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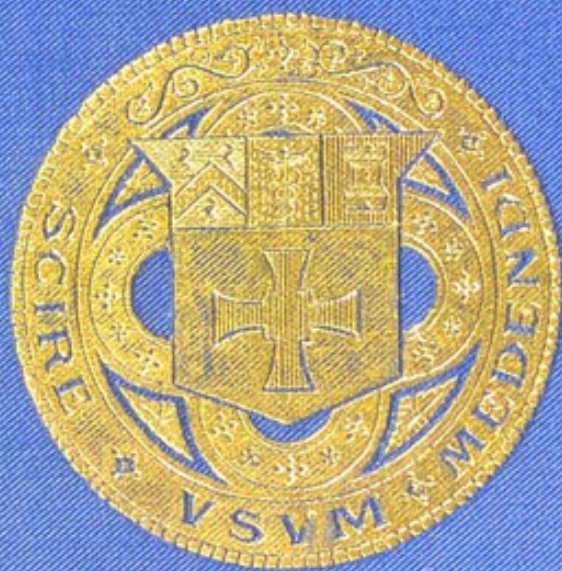
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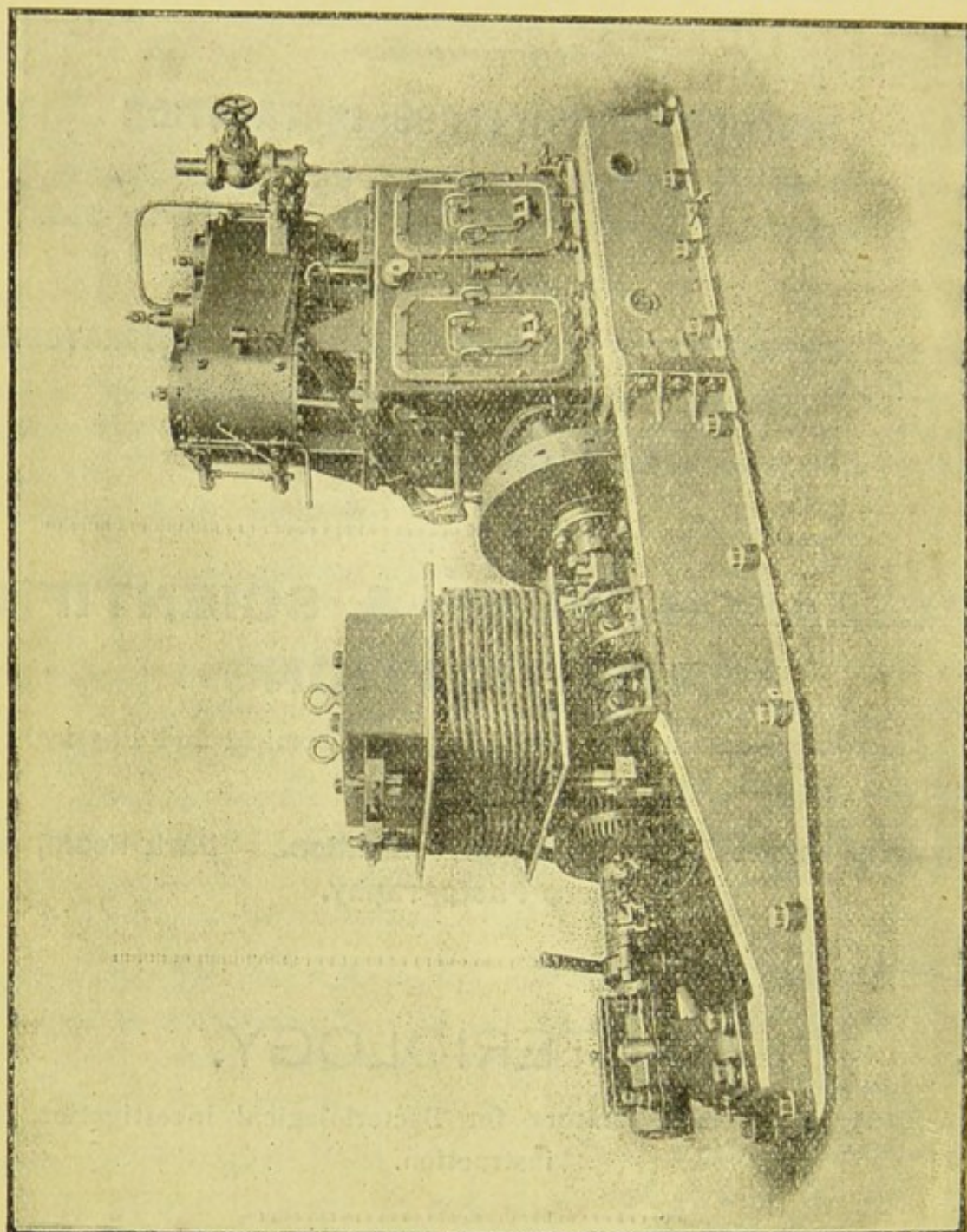
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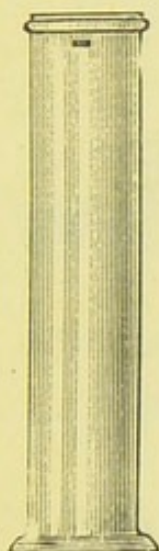
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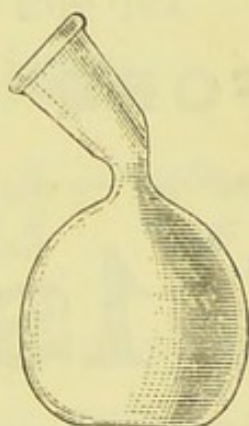
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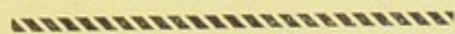
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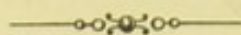


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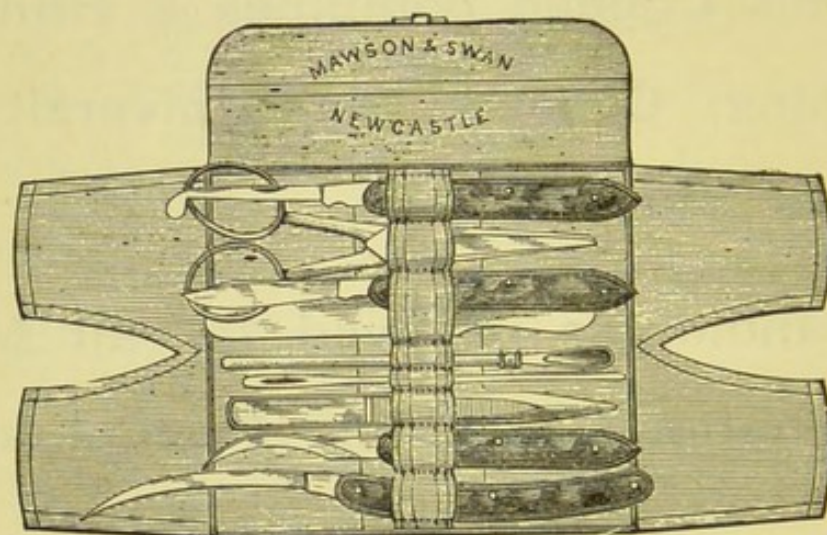
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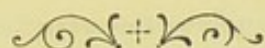
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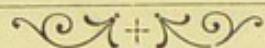
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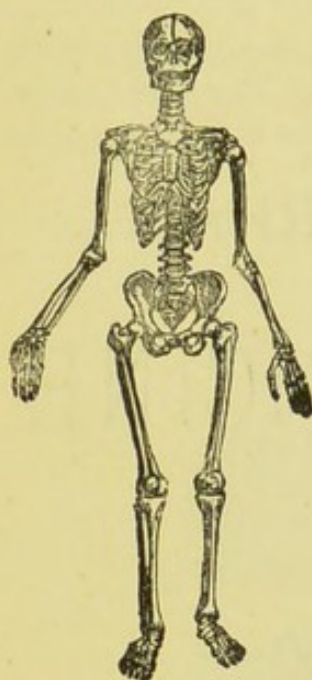




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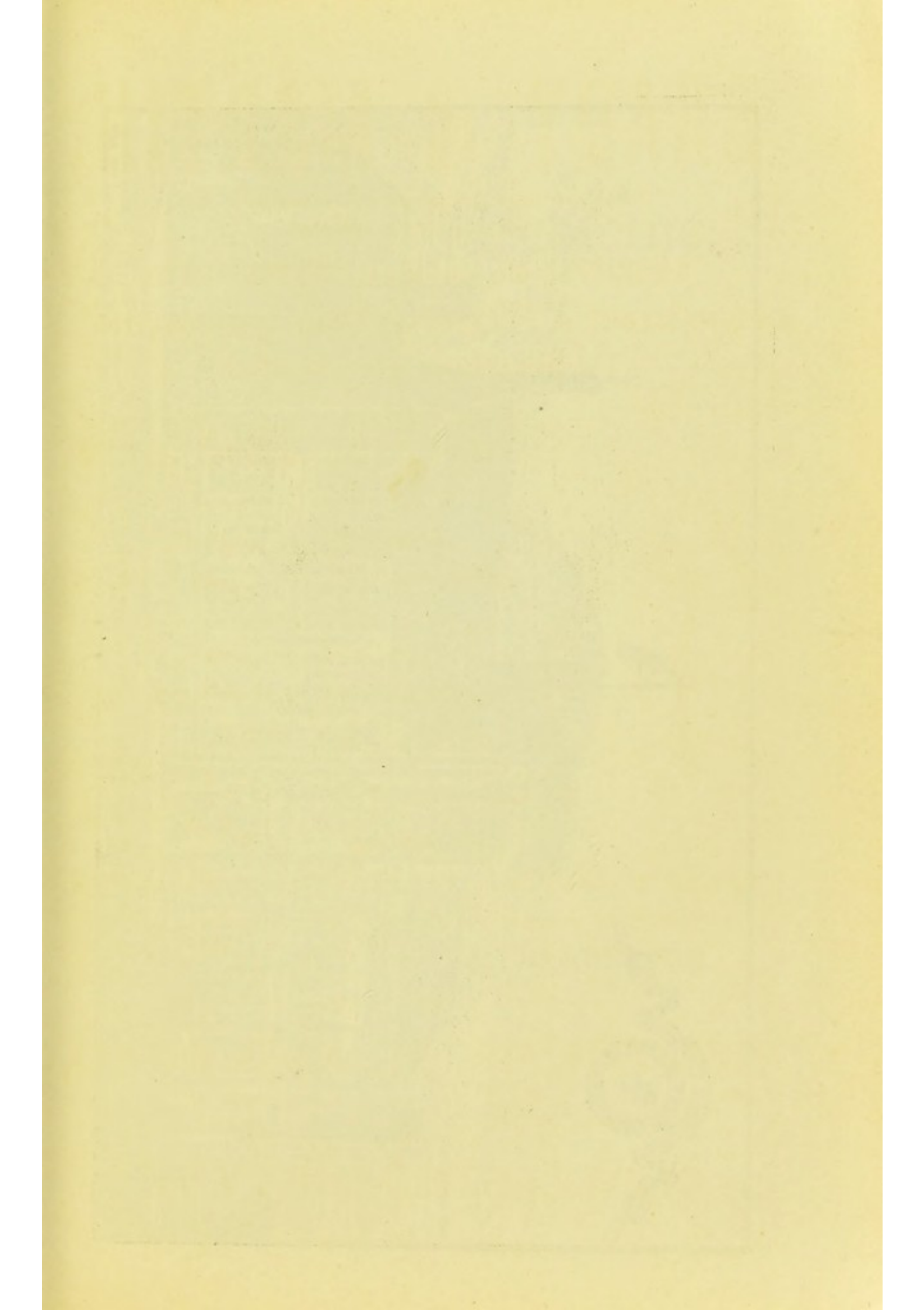
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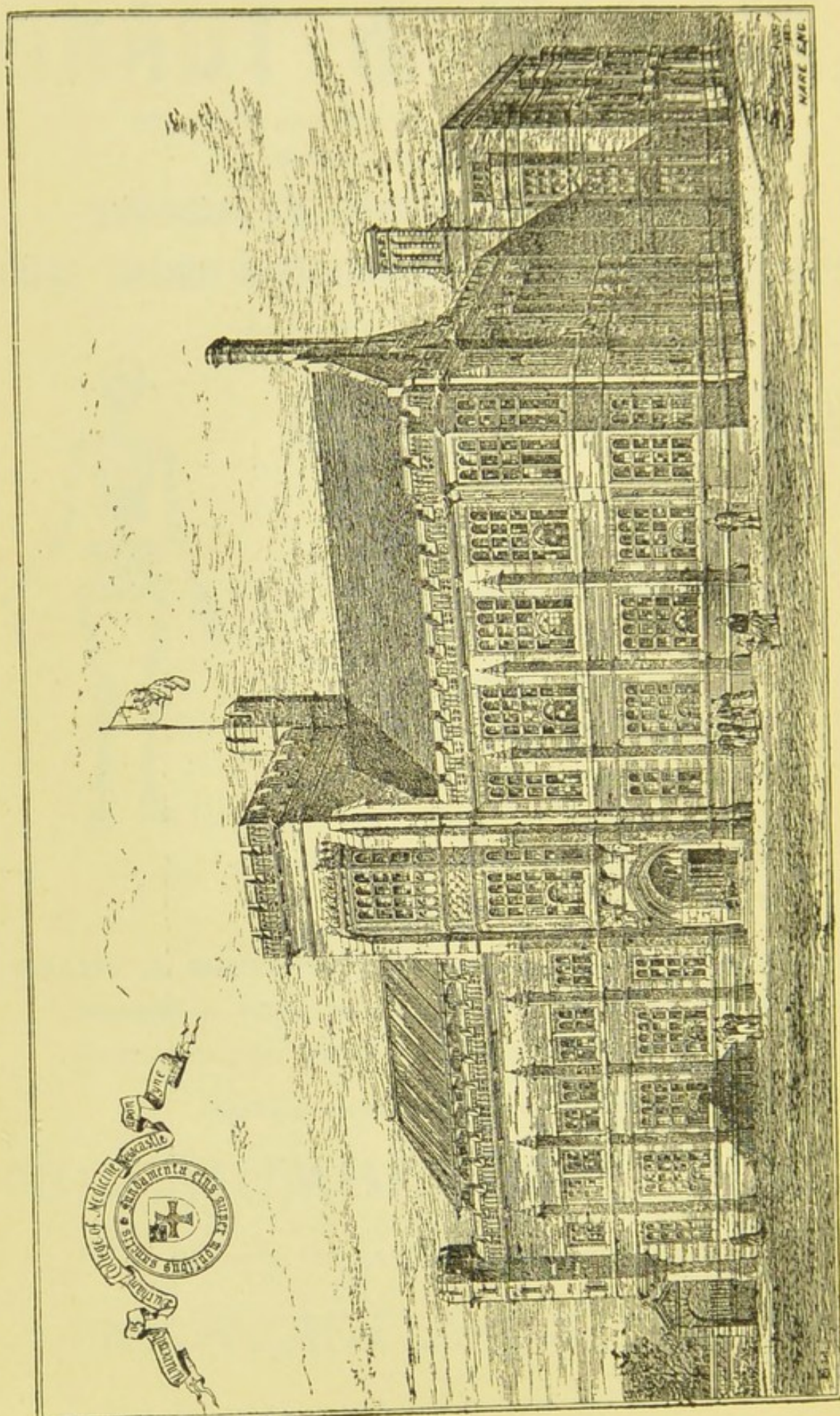
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W. H. W. 1827



UNIVERSITY OF DURHAM

# College of Medicine,

Newcastle-upon-Tyne.

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Calendar for the Year 1899=1900.

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A NEW COLLEGE BUILDING (of which the elevation is shown in the frontispiece of this Calendar) has been erected in Northumberland Road, Northumberland Street, at a cost, for the executive part of the College, of about £31,000. The electric light has recently been installed throughout the whole of the working part of the College, including the Lecture Theatres, Practical Laboratories and Dissecting Room.

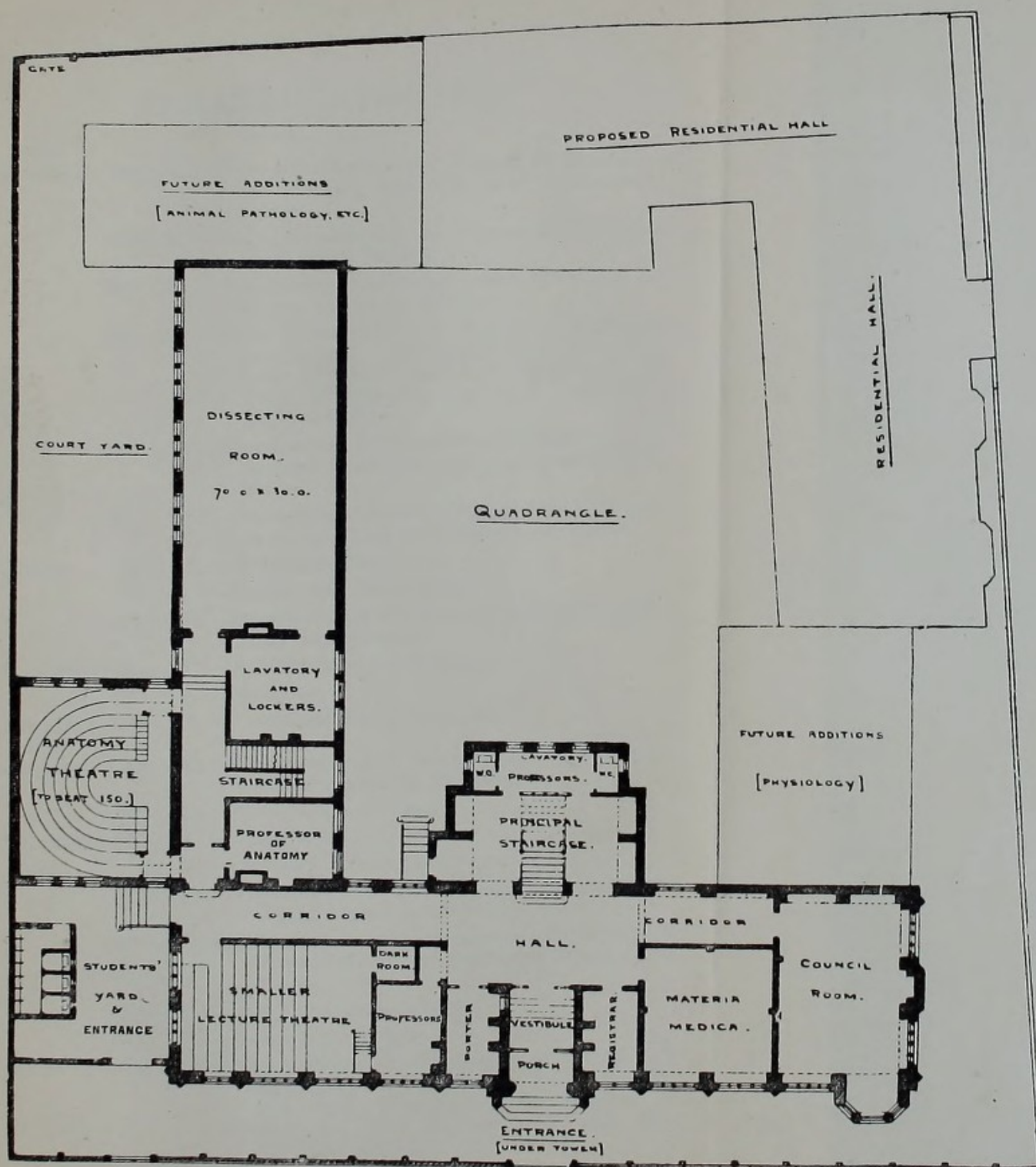
In this Building every modern improvement has been adopted by which the Medical Education and the wellbeing of the Students can be furthered.

It is proposed that a Residential Hall shall be added, so as to give the advantage of University training.

The WINTER SESSION will be commenced on Monday, October 2nd, 1899, and the SUMMER SESSION on Tuesday, May 1st, 1900.

The SECRETARY will be happy to give any information either to Students or their friends. Applications should be made to PROFESSOR HOWDEN, Secretary, College of Medicine, Newcastle-upon-Tyne.

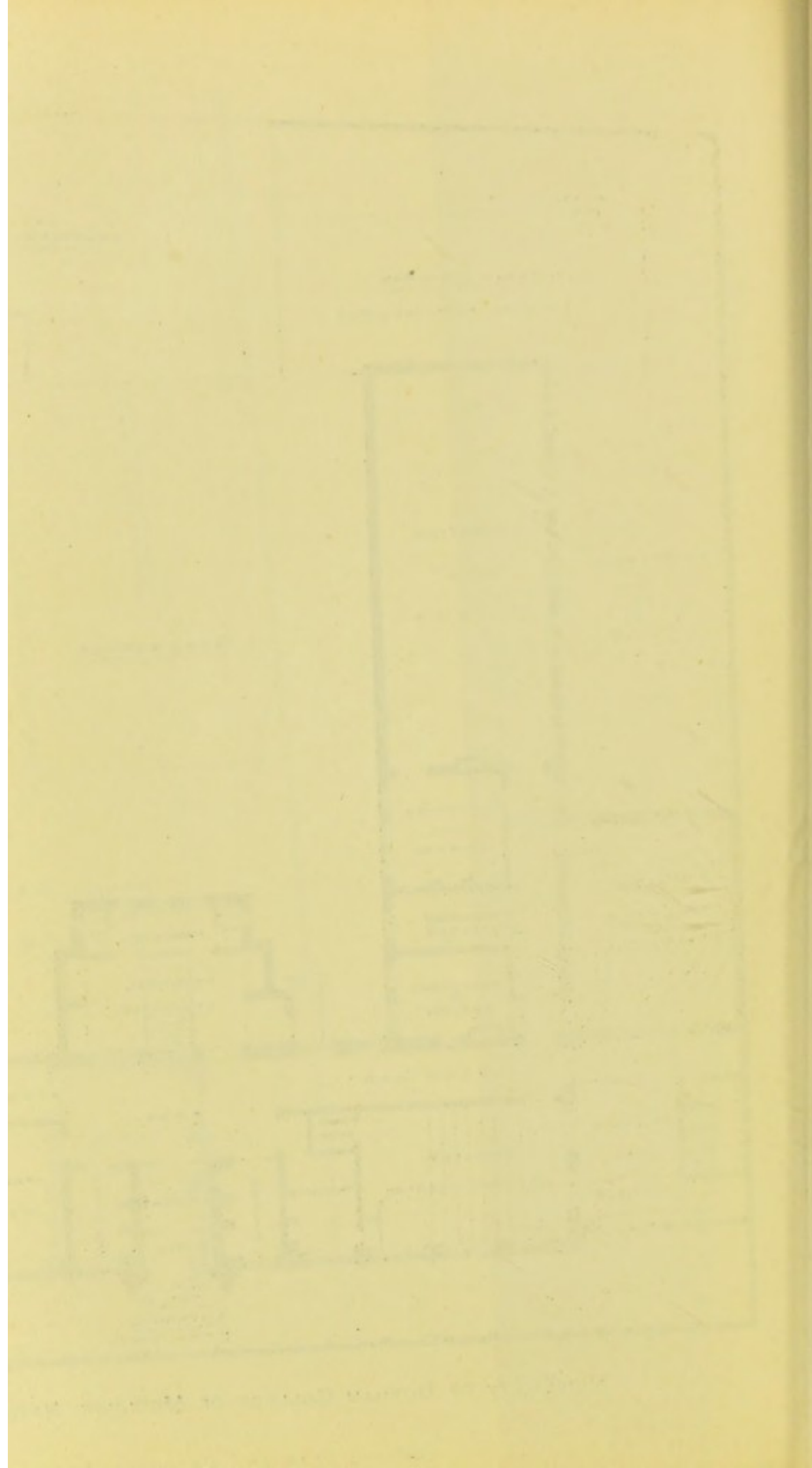




UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-UPON-TYNE.

GROUND PLAN AND PROPOSED ADDITIONS.







## ALMANACK, 1899-1900.

1899.

September 4th...M.—First Examination for Degrees in Medicine and Surgery (old and new regulations) begins.

„ 11th...M.—Second Examination for Degrees in Medicine and Surgery begins.

„ 12th...Tu.—Preliminary Arts Examination for the M.B. Degree begins (at Durham).

„ 18th...M.—Third Examination for Degrees in Medicine and Surgery (new regulations), Examinations for M.D. and M.S. Degrees, and Final Examination for M.B. and B.S. Degrees begin.

„ 19th...Tu.—Examination for Certificate of Proficiency in General Education begins (at Durham), at 9 a.m.

„ 23rd...Sat.—Convocation held at College of Science, Newcastle-on-Tyne, and Degrees conferred.

October 2nd...M. — Winter Session begins.

„ 9th...M. — Registration Book closes.

„ 11th...W.—Examination for University Medical Scholarship (at Durham).

November 8th...W.—Ordinary Meeting of Council.

„ 13th...M.—Open Day.

December 22nd...F. — Christmas Vacation begins.

1900.

January 2nd...Tu.—Preliminary Arts Examination for the M.B. Degree begins (at Durham).

„ 9th...Tu.—The College re-opens.

February 12th...M. — Open Day.

March 7th...W.—Ordinary Meeting of Council.

„ 13th...Tu.—Preliminary Arts Examination for the M.B. Degree begins (at Durham).

„ 20th...Tu.—Examination for Certificate of Proficiency in General Education begins (at Durham), at 9 a.m.

„ 26th...M.—Class Examinations begin.

„ 30th...F.—Winter Session ends.

April 2nd...M.—Examinations for the Degree of Bachelor in Hygiene, for the Diploma in Public Health, and First Examination for Degrees in Medicine and Surgery (old and new regulations) begin.



1900.	
April	9th...M.—Second Examination for Degrees in Medicine and Surgery begins.
„	23rd...M.—Third Examination for Degrees in Medicine and Surgery (new regulations), Examinations for M.D. and M.S. Degrees, and Final Examinations for M.B. and B.S. Degrees begin.
„	28th...Sat.—Convocation held at College of Medicine, Newcastle-on-Tyne, and Degrees conferred.
May	1st...Tu.—Summer Session begins.
„	8th...Tu.—Registration Book closes.
June	20th...W.—Ordinary Meeting of Council.
July	23rd...M.—Class Examinations begin.
„	25th...W.—Annual Meeting of the Members of the College.
„	27th...Fri.—Summer Session ends.
August	8th...W.—Ordinary Meeting of Council.
September	3rd...M.—First Examination for Degrees in Medicine and Surgery (old and new regulations) begins.
„	10th...M.—Second Examination for Degrees in Medicine and Surgery begins.
„	11th...Tu.—Preliminary Arts Examination for the M.B. Degree begins (at Durham).
„	17th...M.—Third Examination for Degrees in Medicine and Surgery (new regulations), Examination for M.D. and M.S. Degrees, and Final Examinations for M.B. and B.S. Degrees begin.
„	18th...Tu.—Examination for Certificate of Proficiency in General Education begins (at Durham), at 9 a.m.
„	22nd...Sat.—Convocation held at Durham, and Degrees conferred.
October	1st...M.—Winter Session begins.
„	8th...M.—Registration Book closes.



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One Diploma and six Degrees are conferred by the University of Durham, viz. :—The Diploma in Public Health, and the Degrees of Bachelor in Medicine, Doctor in Medicine, Bachelor in Surgery, Master in Surgery, Bachelor in Hygiene, and Doctor in Hygiene. These degrees are open to Men and Women.

Attendance at the College of Medicine for one year is equivalent to one year of residence at Durham for the Degree of B.A.

---

### SCHOLARSHIPS, MEDALS, AND PRIZES.

A GOLD MEDAL is awarded every year to the Candidate who presents the best Essay for the Degree of M.D., provided that the Essay is judged to be of sufficient merit.

#### AT THE UNIVERSITY OF DURHAM.

Four Scholarships of £25 a year each were set apart in 1856 for Students in Medicine, and are tenable for four years by Students pursuing their medical studies and not of sufficient standing to proceed to a Degree in Medicine.

#### *Regulations for the Medical Scholarships.*

1. In ordinary cases such Medical Scholarships as shall have become vacant shall be filled up at the beginning of Michaelmas Term in each year.
2. The candidates for the Medical Scholarships shall be those persons who have not kept more than one term by residence in the University, or those who are desirous of being admitted as Medical Students.
3. Each candidate must produce to the Warden satisfactory testimonials of character.



4. Unless there be special Examiners appointed for the purpose, the Examiners for the First Public Examination in Arts shall be Examiners for the Medical Scholarships.

5. The subjects of Examination shall be the Greek and Latin Languages, some portion of English History, Arithmetic, and English Composition. The Examiners shall report to the Warden and Senate, for Election, the Students who shall pass the best Examination. The books and particular portions of English History shall be fixed by the Warden and Senate three months at least before the Examination.

6. If no candidate duly qualified present himself, the Warden shall have power to appoint a second Examination at a later period of the Academical year. If a student be elected at this Examination, he shall be regarded as if he had obtained the Scholarship in the preceding Michaelmas Term; but no one shall be elected unless he pass a satisfactory Examination.

7. The Medical Scholarships shall be tenable for four years, by Medical Students who reside and pursue their studies either at Durham or Newcastle-upon-Tyne, as Medical Students, provided that they produce satisfactory testimonials of character, and pass the Public Examination in a creditable manner.

8. If a Scholarship be forfeited by failure at the Examination at the end of the first year, or from any other cause before the end of the three years, the Warden and Senate shall have power to assign the Scholarship for the remaining part of the period to a student not already a Scholar, who is recommended as having passed the best examination at the end of his first year.

The subjects of the Examination, which will be commenced on Wednesday, October 11th, 1899, are:—The Gospel of St. Luke in Greek; Latin Grammar; Tacitus, Annals I.; Virgil, *Æneid*, Books V., VI.; Arithmetic and Algebra; Euclid, Books I. and II.; English History to the Norman Conquest.

The subjects for the Examination, which will be commenced on Wednesday, October 10th, 1900, will be the same as those given above, excepting the following:—English History: William I. to end of Henry II.

#### AT THE COLLEGE OF MEDICINE.

DICKINSON MEMORIAL SCHOLARSHIP.—The friends of the late JOHN DICKINSON, M.B. Dunelm., who was Medical Officer of the Universities' Mission to Central



Africa in 1863, desiring to testify their admiration for his character, and their sorrow at his untimely death, subscribed a sum of £300, to which a further sum of £65 10s. has lately been added, accruing from the years in which the Scholarship was not awarded, Mrs. WALKER and Mr. WM. HENRY DICKINSON further contributing to raise the amount to £400. The interest of this amount is awarded annually after examination, at the end of the Summer Session. Any Full Student of the College of Medicine who has passed the Second Examination of any of the Licensing Bodies named in Schedule A of the Medical Act, 1858, is eligible for the Scholarship. The subjects of Examination are Medicine, Surgery, Midwifery, and Pathology. With this Scholarship is also presented a Gold Medal. Candidates for the Dickinson Scholarship must enter for the Examinations in their fifth year, and the years must have been consecutive.

**TULLOCH SCHOLARSHIP.**—The interest of the sum of £400, bequeathed by the late BENJAMIN TULLOCH, Esq., Surgeon, Newcastle-upon-Tyne, is awarded annually at the end of the Winter Session to the Full Student who passes the best examination in the subjects of Anatomy, Physiology, and Chemistry. This Scholarship may be entered for by Students at the end of their first year, or at the end of their second year of study; but no Student is eligible who commenced his medical curriculum more than two academical years before the date of Examination.

**CHARLTON MEMORIAL SCHOLARSHIP.**—The friends (professional and private) of the late EDWARD CHARLTON, M.D. Edin., D.C.L. Dunelm., President of the College, and Professor of Medicine, to show their appreciation of his professional and scientific worth, and to perpetuate his memory, contributed a sum of money, by means of which his portrait has been placed in the Library of the Royal Infirmary, Newcastle-upon-Tyne, and £700 invested to found a Scholarship in Medicine in the College, to be awarded annually at the end of the Winter Session after examination. The fund was invested in the purchase of £464 North Eastern Railway Consols; a further sum of



£37 16s. arising from a year in which the Scholarship was not awarded has since been invested in the purchase of £27 North Eastern Railway Consols, thus raising the capital of the Scholarship to the sum of £491 North Eastern Railway Stock. The Scholarship is open to Full Students of the College who have attended the Class on the Principles and Practice of Medicine, and may be competed for at the end of their fourth or fifth Winter—the Winters must have been consecutive.

**GIBB SCHOLARSHIP.**—Dr. GIBB, one of the oldest Members of the College, having presented the sum of £500 for the purpose, the interest on this sum is awarded annually as a Scholarship in Pathology, at the end of the Summer Session, to the Full Student who passes the best examination in that subject, but no Student shall be eligible after the completion of his curriculum.

**LUKE ARMSTRONG MEMORIAL SCHOLARSHIP.**—The friends of the late Dr. LUKE ARMSTRONG, who was connected with the College as Lecturer for a period of twenty-four years, desiring to testify their esteem and to perpetuate his memory, contributed £680, which has been invested to found a Scholarship in Comparative Pathology. The Scholarship is open to all Graduates in Medicine or Hygiene, and to Candidates for those Degrees who have spent at least six months at the University of Durham, and whose age does not exceed 30 years. The Scholarship will be awarded annually to the Author of the best Essay on some subject in Comparative Pathology which has been approved by the Professor of Comparative Pathology.

The Essay may be illustrated by drawings, preparations, and specimens. These, together with the Prize Essay, shall become the property of the College of Medicine.

The Essay must be sent to the Professor of Comparative Pathology not later than July 1st each year. The successful Candidate will be styled the Luke Armstrong Scholar in Comparative Pathology. By permission the Scholar may publish his Essay.



**STEPHEN SCOTT SCHOLARSHIP.**—The late STEPHEN SCOTT, Esq., of Harrogate, formerly of Newcastle-upon-Tyne, generously presented to the College of Medicine the sum of £1,000, for the purpose of founding a Scholarship. The Competition shall be by an original Essay. By the terms of Mr. Scott's gift, the subject of the Essay was at first limited to "Hernia and Allied Subjects," but afterwards he kindly consented to extend the scope of the Essay so as to include any Surgical Subject. Any Graduate in Medicine or Surgery of the University of Durham, or any Student of the University of Durham College of Medicine shall be eligible to compete for the Scholarship, provided that such Student shall have kept at least one Academical year in attendance at the College, and that in any case his age does not exceed 30 years at the time when the Essay is sent in.

The Competition shall take place every year, and the Essays must be presented not later than the 15th day of July.

The Essay must be illustrated by drawings, preparations, and specimens at the choice of the Essayist. The Judges shall be the Lecturers on Surgery. The subject of the proposed Essay must be submitted for the approval of the Professor of Surgery. The Scholarship will not be awarded unless the Examiners deem the Essay of sufficient merit, and in case it is at any time withheld, the proceeds shall be applied to the purposes of the Scholarship in such manner as the Trustees may direct, either by addition to the capital sum, or by giving an additional prize on any other occasion when a second Essay shall be deemed to deserve it. The Essays shall be the property of the College of Medicine, and also all specimens, preparations, etc., illustrating them, but the writer of the successful Essay shall be permitted to publish it.

**HEATH SCHOLARSHIP.**—The late GEORGE YEOMAN HEATH, M.D., M.B., D.C.L., F.R.C.S., Professor of Surgery in the University of Durham, and President of the University of Durham College of Medicine, bequeathed the sum of £4,000, to found a Scholarship in Surgery, the interest to be awarded every second year.



In accordance with the will of the late G. Y. HEATH, the Trustees of the Heath Scholarship will award and pay to the writer of the best original Essay the sum of £200.

All Graduates in Medicine or in Surgery of the University of Durham are eligible to compete for this scholarship.

The subject of the Essay for 1900 is "The Urinary Tract—its injuries and surgical diseases, their pathology, diagnosis, and treatment," and for 1902 "The Cerebro-spinal Nervous System—its injuries and surgical diseases, their pathology, diagnosis, and treatment."

The Essay must be type-written or printed, and delivered to the Trustees not later than March 31st, in the years above-mentioned. The Essay, together with any Specimens, Drawings, Casts, Microscopical Preparations, or other means of illustration accompanying it, will become the property of the College of Medicine, Newcastle-upon-Tyne.

By permission, the Essay may be printed for general circulation by the Heath Scholar.

W. C. ARNISON, M.D., } *Trustees of the*  
FREDERICK PAGE, M.D., } *Heath Scholarship.*

GIBSON PRIZE.—Under the will of the late Dr. CHARLES GIBSON the College has lately come into the possession of the sum of £225—to be employed in founding an annual prize in the subject of Midwifery and Diseases of Women and Children. Dr. GIBSON entered the Newcastle School of Medicine and Surgery as a Student in 1837—three years after the foundation of the School. In 1851, he was appointed Lecturer on Midwifery and Diseases of Women and Children—a post which he held until his death in April, 1894. Students, who have attended one course of lectures on Midwifery, are eligible to compete once for this prize, at the end of their third or fourth year.

COLLEGE PRIZES AND CERTIFICATES.—In connection with each of the Courses of Lectures named below, Prizes of Books and Honours Certificates are awarded at the end of the Session in which the Course is given, to those Students attending the Course who pass the best Examination in the subject treated of.



## WINTER SESSION.

- |  |                 |
|--|-----------------|
| 1.—Anatomy   | { Senior Class. |
|  | { Junior Class. |
| 2.—Dissections   | { Senior Class. |
|  | { Junior Class. |
| 3.—Physiology.   |                 |
| 4.—Practical Physiology<br>(Physiological Chemistry<br>and Physics). |                 |
| 5.—Chemistry.  |                 |
| 6.—Physics.  |                 |
| 7.—Biology.  |                 |
| 8.—Medicine.   |                 |
| 9.—Surgery.  |                 |
| 10.—Midwifery and Diseases<br>of Women and Children.                 |                 |
| 11.—Public Health.   |                 |
| 12.—Regional Anatomy.  |                 |

## SUMMER SESSION.

- 1.—Practical Chemistry.
- 2.—Practical Histology.
- 3.—Practical Physics.
- 4.—Materia Medica and Therapeutics.
- 5.—Medical Jurisprudence.
- 6.—Pathological Anatomy.
- 7.—Operative Surgery.
- 8.—Biology.
- 9.—Psychological Medicine.

The Prizes will consist of Books. The Prize in each Class will be awarded to the Student who obtains the highest marks in the Class Examination, provided that he obtain not less than 80 per cent. of the full marks obtainable. The Certificates will be divided into three Classes, viz. :—First-Class Honours, corresponding to marks of 80 per cent. and upwards; Second-Class Honours to marks of from 75 to 80 per cent.; and Third-Class Honours to marks of from 70 to 75 per cent.

Students who have attended a First-year's Course only, are eligible for these Prizes in the Junior Classes of Anatomy and Dissections, and in those of Chemistry, Physics, Practical Chemistry, Practical Physics, and Biology; Second-year Students only in the Classes of Physiology, Practical Physiology, Practical Histology, and Materia Medica, and in the Senior Classes of Anatomy and Dissections; Third-year Students only in the Classes of Midwifery, Medical Jurisprudence, Public Health, and Pathology; Third and Fourth-year Students in the Classes of Medicine and Surgery, and Fourth-year Students in the Classes of Operative Surgery, and Regional Anatomy; Fourth or Fifth-year's Students are eligible to compete for the Prize in Psychology, but they must sit for the Examination at the end of the Session in which the Class has been attended. Students, after taking out a Second Course of Lectures, will not be allowed to compete for these Prizes, except in Medicine and Surgery. Medical Study will be held as having commenced at the date of registration on the books of a recognised Medical School.

The Council reserves the right of withholding any of the above Scholarships, Prizes, or Certificates, when a satisfactory degree of proficiency is not shown at the Examination, and no Scholarship, Medal, or Prize can be competed for by any Student who has obtained it in any previous year.



AT THE ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

GOYDER MEMORIAL SCHOLARSHIP.—The interest of the sum of £325, contributed by friends (professional and private) of the late CHARLES MCIVOR GOYDER, Surgeon, whereby his memory may be perpetuated, and Medical Students incited to emulate his meritorious example, will be awarded annually to the Student who shall most distinguish himself in Clinical Medicine and Clinical Surgery at the Royal Infirmary, Newcastle-upon-Tyne, under the following Regulations, viz.:—

1st. That the Scholarship be attached to the Royal Infirmary, Newcastle-upon Tyne, and be termed the Goyder Memorial Scholarship.

2nd. That the Subjects of Examination be Clinical Medicine and Clinical Surgery.

3rd. That the Scholarship be open for competition to Students during their fourth and fifth years only of medical study ; that the Scholarship shall not be taken twice by the same Student ; and that no Student be eligible for examination unless he be a Full Student, both at the College of Medicine and at the Royal Infirmary, Newcastle-upon-Tyne.

4th. That the Examination for the Scholarship be in the hands of the Honorary Staff of the Royal Infirmary, Newcastle-upon-Tyne, and that the Honorary Staff shall have power, if the Candidates do not show sufficient merit, to withhold the Scholarship. In the following year the Scholarship not awarded shall be competed for, in addition to the Scholarship of that year, but both shall not be held by the same individual.

5th. That, with the permission of the Authorities of the University of Durham College of Medicine, the Goyder Memorial Scholarship be presented at the annual distribution of the College Scholarships and Prizes.

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COLLEGE AND INFIRMARY OFFICES TENABLE  
BY STUDENTS OF THE COLLEGE.

ASSISTANT DEMONSTRATORS OF ANATOMY.—Assistant Demonstrators are appointed yearly by the Council of the College from amongst the Senior Students. They each receive an honorarium of £5.



\*Two or more PROSECTORS for the Lectures on Anatomy are selected every Session from amongst the Senior Students.

\*ASSISTANT-DEMONSTRATORS OF PHYSIOLOGY.—Assistant-Demonstrators to the Lecturers on Practical Physiology are chosen yearly by the Council of the College, from amongst Students who have passed a Primary Examination.

\*ASSISTANT-DEMONSTRATORS OF PATHOLOGY.—Assistant-Demonstrators to the Lecturer on Pathology are appointed yearly from amongst Students who have passed a Primary Examination.

\*CLINICAL CLERKS AND DRESSERS are appointed periodically.

\*ASSISTANTS TO THE PATHOLOGIST.—Assistants in the Pathological Department of the Royal Infirmary are appointed in March, June, September, and December.

\*ASSISTANTS TO THE DENTAL SURGEON.—Two Assistants are appointed in March, June, September, and December.

\*ASSISTANTS IN THE EYE DEPARTMENT.—Two Assistants are appointed in March, June, September, and December.

\*ASSISTANTS IN THE SKIN DEPARTMENT.—Three Assistants are appointed in March, June, September, and December.

\*ASSISTANTS IN THE THROAT, NOSE, AND EAR DEPARTMENT.—Three Assistants are appointed in March, June, September, and December.

The Office of Resident Medical Assistant to the City Hospital for Infectious Diseases is open to qualified Students. The holder is appointed for one year, at a salary of £50, with board, lodging, etc., and is eligible for re-election for a further period of one year, at £70. This appointment affords an excellent opportunity for the study of Infectious Fevers.

\* These appointments are unpaid, but confer certain privileges and offer great advantages for practical study.



## LIBRARIES AND MUSEUMS.

The MEDICAL LIBRARY at the Royal Infirmary contains about 6,000 volumes. New books are constantly being added, whilst the series of works of reference is very comprehensive. The Library is open free to all Students on deposit of one guinea caution-money with the Librarian, who attends on Tuesdays, Thursdays, and Saturdays, from 11 a.m. to 12 noon.

The LIBRARY at the College is provided with standard medical books for daily reference, and the ordinary medical journals. Books, *except the ordinary class text-books*, may be obtained for home use. A Library and Museum fee of ten shillings a year is charged in the case of Students who take only a part of their curriculum at Newcastle. In the case of Full Students of the College the fee is a composition one of fifteen shillings. The sum so obtained is exclusively utilised for the purpose of maintaining and increasing the Library, and the collection of Anatomical Preparations, Materia Medica Specimens, etc., which are specially set apart for the use of the Students.

The LIBRARIES OF THE DURHAM COLLEGE OF SCIENCE and of the LITERARY AND PHILOSOPHICAL SOCIETY are accessible to Students. The Library of the latter contains about 50,000 volumes of general and special literature, and a Reading Room, provided with the ordinary magazines and periodical literature. It is open to Students on payment of one guinea annual subscription.

The MUSEUMS OF PATHOLOGY, ANATOMY, MATERIA MEDICA, AND HYGIENE, at the College of Medicine, are open to Students during the same hours as the College.

A LABORATORY has recently been fitted up in the College of Medicine with all the apparatus required for the Practical Study of Bacteriology. This Laboratory will be open to members of the class each day during January, February, and March, and at any time for private research on payment of one guinea per month.

A MUSEUM OF GEOLOGY AND NATURAL HISTORY in the Durham College of Science is open Daily.



## DEPARTMENTS OF PRACTICAL STUDY.

## IN THE COLLEGE OF MEDICINE.

PRACTICAL ANATOMY, under the superintendence of Professor Howden, aided by Demonstrators, is carried on during the winter daily from 9 a.m. till 5 p.m., except on Saturdays, when the Dissecting Room is closed at noon. Dissection is also carried on in the summer.

PRACTICAL HISTOLOGY AND PHYSIOLOGY.—A course of Practical Histology is given during the summer, and a course of Practical Physiological Chemistry and Physics during the winter in the Physiological Laboratory. Students desiring to undertake original investigations, or to practice physiological methods, may be admitted to work in the Laboratories on the fulfilment of certain conditions. Application in all cases must be made to the Professor.

PRACTICAL PATHOLOGY.—A course of Practical Pathology is conducted during the Summer Session in the Pathological Laboratory. On application to the Lecturer arrangements may be made for advanced or research work in Morbid Histology or Chemical Pathology.

OPERATIVE SURGERY is taught, during the Summer Session, by the Lecturers on Surgery.

PRACTICAL CHEMISTRY, under the superintendence of Professor BEDSON, M.A., D.Sc., assisted by Demonstrators, is taught in the Durham College of Science. The Laboratories are appointed so as to meet the requirements of all classes of Students, and to provide facilities for research. Each Student has a fully-fitted bench to himself, provided with all the necessary apparatus and reagents. The Laboratories are open daily from 10 a.m. till 5 p.m. during both winter and summer.

PRACTICAL PHYSICS, under the superintendence of Professor H. STROUD, M.A., D.Sc., assisted by Demonstrators, is taught at the Durham College of Science. Special



Laboratory Courses are arranged for Students desiring to study some one branch of Physics, and opportunity is afforded for undertaking research. The General Laboratory course is given during the Summer Session. The Laboratory is open daily during the College Sessions.

**PRACTICAL BIOLOGY.**—A Course of Lectures on Biology, with Practical Work in the Laboratory, is conducted by Professor M. C. POTTER, M.A., F.L.S., at the Durham College of Science. The Laboratory is well lighted and adapted for the requirements of Students; it is fitted up with the necessary models and apparatus, and every opportunity is given for the prosecution of research. The Laboratory is open daily during the College Sessions.

**PRACTICAL BACTERIOLOGY.**—A Course of Lectures on Comparative Pathology, with practical instruction in Bacteriology, is given during the months of January, February, and March, in the Bacteriological Laboratory, and a short course of Lectures on Elementary Bacteriology with demonstrations will be given as a part of the Public Health course, during October, November, and December, by Professor MURRAY, M.A., M.D., F.R.C.P. Special arrangements for advanced or research work may be made at any time on application to the Professor of Comparative Pathology.

#### IN THE ROYAL INFIRMARY.

**PATHOLOGY.**—Demonstrations on Morbid Anatomy are given by the Pathologist at the Royal Infirmary at 11.30 a.m. as opportunity occurs.

**DISEASES OF THE EYE** may be studied under Mr. Williamson, in a special department at the Royal Infirmary. Demonstrations are given on Mondays at 11 o'clock, and on Thursdays at 9 o'clock.

**DISEASES OF THE SKIN.**—A special department for Diseases of the Skin is conducted by Dr. Limont at the Royal Infirmary. Demonstrations are given in the Out-patient Department, on Fridays, at 9.30 a.m.



DISEASES OF THE THROAT, NOSE, AND EAR.—A special department for Diseases of the Throat, Nose, and Ear is conducted by Mr. Walter Ridley, at the Royal Infirmary. Demonstrations are given in the Out-patient Department, on Thursdays, from 10 to 12 o'clock.

DEPARTMENT FOR DISEASES OF WOMEN.—Demonstrations in the Out-patient Department by the Physicians on Tuesdays at 10 a.m. Clinical Lectures by the Surgeons once a fortnight and Ward Demonstrations as opportunity offers.

ORTHOPÆDIC DEPARTMENT.—Mr. Martin gives demonstrations in this department on Wednesdays at 11 a.m.

PHARMACY is taught in the Dispensary of the Royal Infirmary without extra fee in the case of Full Students of the College.

#### OUT-DOOR SANITARY PRACTICE IN THE DEPARTMENT OF THE MEDICAL OFFICER OF HEALTH FOR NEWCASTLE-UPON-TYNE.

The Course of six months may be arranged by applying to Dr. H. E. ARMSTRONG, Medical Officer of Health, Town Hall, Newcastle-upon-Tyne. Fee, eight guineas.

CLINICAL INSTRUCTION IN INFECTIOUS DISEASES.—A Course of Lectures and Clinical Instruction at the City Hospital for Infectious Diseases, Walker Gate, will be given during the first half of the Winter Session by Dr. HENRY E. ARMSTRONG, Medical Superintendent. Fee, two guineas.

Opportunities for practical study, of which Students are strongly recommended to take advantage, are offered by the following Institutions:—The Dispensary, Hospital for Infectious Diseases, Eye Infirmary, Children's Hospital, Coxlodge Lunatic Asylum, Dunston Lunatic Asylum, Durham County Asylum, and the Northumberland County Asylum.

#### IN OTHER INSTITUTIONS.

PSYCHOLOGY.—Clinical Instruction is given weekly, during the summer, in the wards of the Northumberland County Asylum, Morpeth, by the Medical Superintendent,



Dr. T. W. McDOWALL. Three months' Resident Clinical Clerkship in any County or Borough Asylum may be substituted for three months' attendance on Hospital Practice in the curriculum for the Degrees in Medicine of the University of Durham.

VACCINATION.—Certificates in Vaccination are given by Dr. FRANK HAWTHORN, Government Teacher and Examiner in Vaccination, The Dispensary, Nelson Street, Newcastle, after a Course of Instruction, which is given on Wednesdays, between 3 and 4 o'clock p.m. Each Student must attend one day a week for six consecutive weeks. Fee, one guinea and a half. ΓΕ-

THE NEWCASTLE LYING-IN HOSPITAL, New Bridge Street, which contains 12 beds, and the Out-door Maternity Department connected with it—in which 300 cases are annually attended, are both available, without fee, for the practical study of Midwifery, by Senior Students of the College. The cases are attended under the supervision of the Medical Officers of the Charities. Application must be made to the Visiting Surgeon, Dr. J. STANLEY MANFORD, 18, Eldon Square.

CHEMISTRY, PHYSICS, BOTANY, AND ZOOLOGY are taught, theoretically and practically, by the Professors of the subjects in the Durham College of Science.

RESIDENCE FOR WOMEN STUDENTS. — Eslington Tower, Newcastle-upon-Tyne. Mistress: Miss PERRY, formerly of Cheltenham College for Ladies. This Hostel, which is recognised by the Council of the College as a residence for Women Students, is pleasantly situated, within a few minutes' walk of the College, and has been specially fitted up for the accommodation of Students. It contains, in addition to the general dining and sitting rooms, a very large study, several small single rooms, and combined study bedrooms, to be shared by two or three Students—all most comfortably furnished, and affording every facility for successful work. The sanitary arrangements have been carried out under the supervision of the



Sanitary Association. The inclusive term fee for board and residence will vary with the room chosen, the minimum fee being £1 1s. per week.

LODGINGS.—A list of suitable lodgings is kept by the Secretary of the College.

### INFORMATION FOR STUDENTS BEGINNING MEDICAL EDUCATION.

All Students before entering the Medical Profession are required—

(A) To pass a *Registration Examination* in General Education.

The *Registration Examination* of the University of Durham will be commenced at Durham, on Tuesday, September 19th, 1899, and again on Tuesday, March 20th, 1900, and on Tuesday, September 18th, 1900.

The Examination is called the *Examination for a Certificate of Proficiency in General Education*, and is accepted by the General Medical Council as a Registration Examination. The following are the regulations in regard to it :—

1. Each Candidate shall pay a fee of £1 on each separate occasion on which he shall desire to be examined. Candidates who may wish to be examined in Shorthand must pay an extra fee of Five Shillings for this part of the examination.

2. Every person intending to present himself for examination shall send notice of his intention to the Examination Secretary, Rev. Henry Ellershaw, M.A., the University of Durham, one month before the day of Examination, stating name in full, the particular subjects in which he desires to be examined and enclosing the required fee.

3.—Candidates sending in their names after the time appointed have to pay an additional fee of 5s. Candidates sending in their names after the list is printed have to pay an additional fee of £1. No name may be withdrawn after the list is printed. The list is printed at least a clear week before the examination begins.

4. The necessary subjects of examination, until further notice, shall be the following :—

- i. ENGLISH.—Writing from dictation ; Grammar ; composition of a short essay ; analysis and parsing of sentences ; and knowledge of a portion of some special author, to be announced at least six months before the date of the Examination.



The author selected for 1899 is Shakespere, *Merchant of Venice*, and for 1900 and 1901 is Shakespere, *King Lear*. Marks not exceeding five per cent. of the total marks obtainable in this section of the examination may be assigned to candidates who show a competent knowledge of Shorthand.

- ii. LATIN.—Grammar; translation into English of specified books, and also of passages from books not specified; translation into Latin of easy English sentences. The author selected for 1899 is Virgil, *Aeneid*, XI. and XII., and for 1900 and 1901 is Virgil, *Aeneid*, I. and II.
- iii. ARITHMETIC.—Simple and Compound Rules, Vulgar and Decimal Fractions, Practice, Proportion, and Interest.
- iv. ALGEBRA.—Up to and including Simple Equations.
- v. EUCLID.—Books I., II., III., with easy deductions.  
And any one of the following :—
- vi. GREEK.—Grammar; translation into English of some specified books, and also of passages from books not specified; translation of easy English sentences into Greek. The author selected for 1899 is Xenophon, *Anabasis*, IV. and V., and for 1900 and 1901 is Xenophon, *Anabasis* VI. and VII.
- vii. FRENCH.—Grammar; translation into English of some specified books, and also of passages from books not specified; translation from English into French. The author selected for 1899 is Madame de Staël, *le Directoire*, and for 1900 and 1901 is P. Mérimée, *Colomba*.
- viii. GERMAN.—Grammar; translation into English of some specified books, and also of passages from books not specified; translation from English into German. The author selected for 1899 is Kohlrausch, *Das Jahr*, 1813, and for 1900 and 1901 is Goethe, *Knabenjahre*.

In the awarding of Certificates, considerable weight throughout the Examination shall be given to the grammar and spelling of the candidates' answers.

This Certificate will be accepted by the General Medical Council as a Registration Examination, provided that the Candidate shall have passed in subjects i., ii., iii., iv., v., and any one of the three vi., vii., viii. at the same Examination.

The Examinations in General Education of the following Examining bodies are also recognised by the General Medical Council as qualifying for Registration :—

1. Universities of the United Kingdom (Oxford and Cambridge, Locals, etc.)
2. Medical Licensing Bodies.
3. Educational Bodies other than Universities.
  - (a) College of Preceptors.
  - (b) Scotch Education Department.
  - (c) Educational Institute of Scotland.
  - (d) Intermediate Education Board of Ireland.



#### 4. Indian, Colonial and Foreign Universities and Colleges.

(B.) To register on the books of some University granting Medical Degrees, or of some recognised School of Medicine.

Having passed a Registration Examination, the Student should next communicate with the Secretary of the College of Medicine, and enter his name on the books of the College, paying the fees required for Lectures. (See pages 50-52.) He will then receive a certificate from the Secretary of his having commenced medical study, together with a form of application for registration in the books of the General Medical Council.

(C.) To register on the books of the General Medical Council.

N.B.—Attendance upon Medical Lectures, or any Medical Study previous to this last-named Registration (C) is not recognised by any Examining Board. Attendance upon Lectures, etc., may be commenced at any time after passing the Registration Examination.

*Intending Students are recommended to pass the Examination enumerated in the Regulations on pages 67 and 68.*

The Student should forward to the Registrar of the Branch Council for England, 299, Oxford Street, London, W.:—(1) The form of application for registration, filled up according to the printed directions attached to it, together with (2) the certificate of having begun Medical Study, and (3) a certificate of having passed the Registration Examination. A certificate of registration, and the certificate of having passed the Registration Examination will be returned to the Student by the Registrar of the Council.

N.B.—Unless the Student enter his name at a School of Medicine, and forward the necessary papers (1, 2, and 3, above-named) to the Registrar of the General Council in London, within *fifteen* days from the commencement of his first Winter or Summer Session, his course of study for that Session will not be recognised by the Council.

For the Degrees of Bachelor and Doctor in Hygiene, see Regulations, pages 79-84.

For the Diploma in Public Health, see Regulations, page 85.



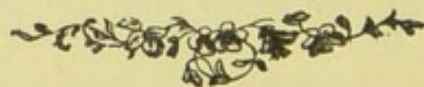
## DENTAL COURSE.

Students can fulfil the following portion of the Curriculum required for the Licences in Dental Surgery of the Royal Colleges of Surgeons of England and Edinburgh, and of the Faculty of Physicians and Surgeons of Glasgow, at the University of Durham College of Medicine, and the Royal Infirmary, Newcastle-upon-Tyne, viz.:—

Anatomy	...	...	...	...	1 Course, 6 Months.
Physiology	...	...	...	...	1 „ 6 „
Practical Physiology	...	...	...	...	1 „ 3 „
Surgery, including the elements of Surgical Pathology	...	...	...	...	1 „ 6 „
Medicine, including the elements of general Pathology	...	...	...	...	1 „ 6 „
Chemistry and Physics, with Practical Laboratory Work	...	...	...	...	1 „ 6 „
Dissections, with Demonstrations...	...	...	...	...	12 Months.
Medical and Surgical Hospital Practice	...	...	...	...	2 Winter Sessions.
Medical and Surgical Clinical Lectures	...	...	...	...	2 „ „

The Composition Fee for the above Courses of Lectures, etc., at the College of Medicine, is thirty guineas, in addition to which there is a Library Fee of fifteen shillings, and an annual Athletic Fee of one guinea. The fee for Hospital Practice, etc., at the Royal Infirmary is twelve guineas, and an additional fee of two guineas a year, during the period of attendance on Hospital Practice, is payable to the Committee of the Infirmary. Particulars may be obtained on application to the Secretary of the College of Medicine.

The remaining portion of the Curriculum required for a Licence in Dental Surgery can be fulfilled at the Newcastle-upon-Tyne Dental Hospital. Particulars of this part of the Curriculum may be obtained from Mr. R. L. MARKHAM, Dean of the Dental Hospital, Newcastle-upon-Tyne.





REGULATIONS FOR STUDENTS COMMENCING  
PROFESSIONAL STUDY ON OR AFTER  
JANUARY 1ST, 1892.

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All Students before entering the Medical Profession are required—

- (a) To pass a Preliminary or *Registration Examination* in General Education. See pages 25 and 26.
- (b) To Register on the books of some University granting Medical Degrees, or of some recognised School of Medicine. See page 27.
- (c) To Register on the books of the General Medical Council. See page 27.
- (d) The Student, when registered by the General Medical Council, is considered to have commenced his Professional Education, of which the curriculum for ordinary qualifications must be a period of *bond fide* study during not less than five years.
- (e) Graduates in Arts or Science of any University recognised by the Medical Council who shall have spent a year in the study of Physics, Chemistry, and Biology, and have passed an examination in these subjects for the Degrees in question, shall be held to have completed the first of the five years of Medical Study.
- (f) Students who hold the title of Associate in Science of the University of Durham, and who have registered as Medical Students before the commencement of their second year in Science, will be allowed to reckon their second year's course in Science as one of the five years of Medical Study.

For Degrees in Medicine, the University of Durham requires certificates of attendance upon the following Courses of Study (all of which Courses, with the exception of Practical Midwifery, Practical Pharmacy, and Vaccination, must be attended at one or more recognised Medical Schools):—

Anatomy	...	...	...	2 Courses, 6 Months each.
Dissections	...	...	...	2 do. 6 do.
Physiology	...	...	...	1 Course, 6 Months.
Chemistry	...	...	...	1 do. 6 do.
Physics	...	...	...	1 do. 6 do.
Elementary Biology	...	...	...	1 do. 3 do.



Materia Medica, Therapeutics, and Pharmacology	...	...	1 Course, 3 Months.
Practical Histology	...	...	1 do. 3 do.
Do. Physiology	...	...	1 do. 3 do.
Practical Chemistry	...	...	1 do. 3 do.
Practical Physics	...	...	1 do. 3 do.
Practical Pharmacy	...	...	1 do. 3 do.
Medicine	...	...	2 Courses, 6 Months each.
Surgery	...	...	2 do. 6 do.
Public Health	...	...	1 Course.
Forensic Medicine	...	...	1 do. 3 Months.
Midwifery and Diseases of Women and Children	...	...	1 do. 3 do.
Pathology	...	...	1 do. 3 do.
Clinical Medical Lectures	...	...	2 Winter Sessions.
Clinical Surgical Lectures	...	...	2 Summer do.
*Medical Hospital Practice	...	...	3 Winter do.
Surgical Hospital Practice	...	...	2 Summer do.
† Medical Clinical Clerkship	...	...	6 Months.
† Surgical Dressing	...	...	6 do.
† Post-Mortem Demonstrations	...	...	2 Winter Sessions. 2 Summer do.
Clinical Obstetrics	...	...	3 Months.
Personal attendance on not less than twenty cases of Midwifery.			
† Vaccination (Certified by Licensed Teacher of Vaccination).	...	...	
Mental Diseases...	...	...	1 Course, 3 Months.
† Infectious Diseases—A Course of Clinical Instruction comprising the observation of not less than 20 cases.	...	...	

\* Three months Resident Clinical Clerkship in any County or Borough Asylum, may be substituted for three months attendance on Hospital Practice in the Curriculum for the Degrees in Medicine of the University of Durham.

† Students must show a certificate of having attended not less than 25 post-mortem demonstrations.

‡ The fees for these courses of instruction are indicated on pages 23, 24, 50, 51, and 52.

For Degrees in Surgery, in addition to the above, Certificates of Attendance on the following Courses attended at one or more recognised Medical Schools are required, viz. :—

Operative Surgery	...	...	1 Course.
Regional Anatomy	...	...	1 Course.



Students are recommended to commence their Course at the beginning of the Winter Session, and to carry out the curriculum on some such plan as the following :—

FIRST WINTER.	FIRST SUMMER.
Anatomy. Dissections. Chemistry. Physics. Elementary Biology.	Practical Chemistry. Practical Physics. Elementary Biology (if not attended during the Winter).
SECOND WINTER.	SECOND SUMMER.
Anatomy. Physiology. Practical Physiology. Dissections.	Practical Histology. Practical Pharmacy. Materia Medica, Therapeutics, and Pharmacology.
THIRD WINTER.	THIRD SUMMER.
Medicine. Surgery. Hospital Practice, with Clinical Lectures. Midwifery and Diseases of Women and Children. Public Health. Practical Midwifery.	Pathology. Practical Pathology. Medical Jurisprudence. Hospital Practice, with Clinical Lectures.
FOURTH WINTER.	FOURTH SUMMER.
Medicine. Surgery. Regional Anatomy. Hospital Practice, with Clinical Lectures.	Mental Diseases. Operative Surgery. Hospital Practice, with Clinical Lectures.
FIFTH WINTER.	FIFTH SUMMER.
Infectious Diseases, and Clinical Lectures.	Clinical Lectures. Mental Diseases (if not attended during the Fourth Summer).



# WINTER SESSION,

1899-1900.

COMMENCING OCTOBER 2ND, 1899, ENDING MARCH 30TH,  
1900.

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## LECTURES AND LECTURERS.

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### ANATOMY.

ROBERT HOWDEN, M.A., M.B., F.R.S.E.,  
Professor of Anatomy in the University.

During the Session the instruction will consist of:—

- I.—A Course of Lectures on Systematic Anatomy.
- II.—A Course of Anatomical Demonstrations on recent Dissections.
- III.—A Short Course of Lectures on Regional and Applied Anatomy.
- IV.—Practical Work in the Dissecting Room and Dissecting Room Demonstrations.

#### I.—SYSTEMATIC LECTURES.

The Class of Systematic Anatomy is divided into two Sections—JUNIOR and SENIOR.

To the JUNIOR DIVISION a Course of Lectures will be given on the Bones, Joints and Muscles of the Body generally, together with an outline of the Vascular, Nervous and Alimentary Systems.

This class will meet, up to Christmas, on Mondays and Fridays at 12 noon, and after Christmas on Mondays, Wednesdays, and Fridays at 12 noon. In connection with it a course of tutorial instruction will be given in Osteology.

Each Student is recommended to provide himself with what is known as a “half-set” of bones and a disarticulated skull for home study.



To the SENIOR CLASS a Course of Lectures will be given on the Anatomy of the Thorax, Abdomen, Head and Neck and Limbs, including the Brain and Sense Organs. The most important facts regarding the development of the various systems will also be dealt with.

This class will meet, up to Christmas, on Tuesdays, Wednesdays, and Thursdays at 12 noon. After Christmas the Wednesday lectures are discontinued.

Attendance on both Junior and Senior Classes is necessary in order to make up one complete Anatomical Course. Students are recommended to attend these classes in two consecutive years, but both classes may be attended in one year if due cause for the same is shown.

## II.—COURSE OF ANATOMICAL DEMONSTRATIONS.

A regular Series of Anatomical Demonstrations will be given in the Lecture Theatre on Mondays, Tuesdays, and Wednesdays at 2.15 p.m. Each Demonstration will be illustrated by a carefully prepared recent dissection of the part. This Course is especially intended for the Senior Students, but the Junior Students are recommended to attend those on the extremities.

## III.—LECTURES ON MEDICAL AND SURGICAL APPLIED ANATOMY.

This Course will be given on Thursdays and Fridays at 2.15 p.m., during the first half of the Session. It will, as far as possible, be illustrated by recent dissections, and will also include demonstrations, on the living subject, of Anatomical facts as applied to Medicine and Surgery. This course is intended for Senior Students, in their fourth year, who mean to proceed to the B.S. Examination.

## IV.—PRACTICAL WORK IN THE DISSECTING ROOM.

The Dissecting room will be open from 9 a.m. till 5 p.m. on Monday, Tuesday, Wednesday, Thursday and Friday, and from 9 a.m. till 12 noon on Saturday. The Professor of Anatomy and his Assistants will attend in the room daily.



The detailed regulations for the Dissecting Room may be had on application to the Professor of Anatomy.

**INSTRUMENTS.**—Each Student must furnish himself with a Dissecting Case containing: four to six Scalpels, a pair of Forceps, a set of Chain Hooks, a pair of Scissors, and a Blow Pipe and Needle.

**TEXT BOOKS.**—For *Systematic Anatomy*, any one of the following: Quain's Anatomy. Gray's Anatomy. Morris' Treatise on Anatomy. For *Practical Anatomy*, any one of the following: Cunningham's Dissector's Guide. Ellis' Demonstrations of Anatomy. Heath's Practical Anatomy. For *Regional and Surface Anatomy*: Treves' Surgical Anatomy.

## PHYSIOLOGY.

THOMAS OLIVER, M.A., M.D., F.R.C.P., F.R.S.E., Professor of Physiology in the University, Physician to the Royal Infirmary, Newcastle, and GEO. E. WILLIAMSON, M.A., F.R.C.S., Surgeon to the Royal Infirmary, Newcastle.

*On Monday, Wednesday, and Friday, at 9.15 a.m.*

In addition to the systematic Course of Lectures on Physiology, there will be held special written and *vivâ voce* Examinations for both Senior and Junior Students.

**TEXT BOOK.**—Kirke's Handbook of Physiology, by Halliburton.

## PRACTICAL PHYSIOLOGY.

(PRACTICAL PHYSIOLOGICAL CHEMISTRY AND PHYSICS.)

Professor OLIVER, M.A., M.D., F.R.C.P., F.R.S.E., and  
ROBERT A. BOLAM, M.D.

*On Monday, Wednesday, and Friday at 10.15 a.m. during the first half of the Winter Session.*

Each Student attends the Laboratory and performs a course of practical work embracing:—

Chemistry of Carbohydrates, Fats, Proteids, and allied groups.

Chemistry of Foods.—Milk, Bread, etc.

Chemistry of Digestion.—Saliva, Bile, Peptic and Pancreatic Digestion.



Chemistry of Urine.—Normal and Pathological. Quantitative Estimation of Urea, Sugar, etc.

Chemistry of Blood, with the Estimation of Hæmoglobin and the Enumeration of Corpuscles.

Electrical Preliminaries.—Batteries, Keys, Induction Coil, Galvanometer, Shunts, etc.

Use of Recording Apparatus, Moist Chamber, Myographs, Nerve Muscle Preparations—Sphygmograph, Cardiograph, Heart Lever—Ophthalmoscope, Artificial Eye, Laryngoscope.

Demonstrations will likewise be given on Blood Pressure, Innervation of Heart, Respiration, Secretion, etc.

TEXT BOOKS.—Halliburton's Essentials of Chemical Physiology. Brodie's Essentials of Experimental Physiology.

## PRINCIPLES AND PRACTICE OF MEDICINE.

G. H. PHILIPSON, M.A., M.D., D.C.L., F.R.C.P., Professor of Medicine in the University, Consulting Physician to the Royal Infirmary, Newcastle.

*On Monday, Wednesday, and Friday at 5 p.m.*

This Course will comprise the consideration of Diseases arranged under the two Divisions of General and Local.

A succinct account will be given of the principal facts and doctrines of General Pathology in their relation to Etiology, the intimate Constitution, the Anatomical Characters, the Evolution and the Pathogeny of the Disease under consideration; whilst in addition, Diagnosis, Prognosis, Therapeutics, Prophylaxis, Vital Statistics, and Nosology will be reviewed.

The Course will be illustrated by drawings and wax models, and with preparations and recent specimens of morbid structures.

TEXT BOOKS.—Bristowe's Theory and Practice of Medicine. Robert's Theory and Practice of Medicine. Osler's Principles and Practice of Medicine.



## PRINCIPLES AND PRACTICE OF SURGERY.

W. C. ARNISON, M.D., D.C.L., M.R.C.S., Professor of Surgery in the University, and Consulting Surgeon to the Royal Infirmary, Newcastle, and F. PAGE, M.A., M.D., Surgeon to the Royal Infirmary, Consulting Surgeon to the Fleming Memorial Hospital for Sick Children, and to the Borough Lunatic Asylum, Coxlodge, Newcastle-upon-Tyne.

*On Monday, Wednesday, and Friday, at 6 p.m.*

### SYLLABUS OF THE FIRST PORTION OF THE COURSE GIVEN BY PROFESSOR ARNISON.

Inflammation.	Wounds—Poisoned and Gun-shot.
Suppuration—Abscess, Hectic.	Burns and Scalds.
Pyæmia.	Fractures, General Pathology of.
Sinus—Fistula.	Dislocations, General Pathology of.
Ulceration.	Diseases of Bones.
Mortification.	Diseases of Joints.
Erysipelas.	Syphilis.
Tetanus.	
Wounds, Repair of.	

The second portion of the Course will be given by Mr. Page. It will consist of Lectures upon the Surgical Diseases of the various systems.

TEXT BOOKS.—Erichsen's Science and Art of Surgery. Walsham's Theory and Practice of Surgery. Treves' System of Surgery. Nettleship's Diseases of the Eye.

## MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN.

T. C. NESHAM, M.D., M.R.C.S., Physician-Accoucheur to the Newcastle Lying-in-Hospital.

*On Tuesday, Wednesday, and Thursday, at 3 p.m. during the first half of the Session.*

PART I.—Obstetric Anatomy and Physiology of Female Pelvis and Generative Organs. Pregnancy. The Phenomena, Mechanism, and Management of Natural Labour. Anæsthesia in Labour.



PART II.—The Phenomena, Mechanism, and Management of Præternatural Labour—Tedious, Instrumental, and Impracticable; including the operations of Induction of Premature Labour, Turning, Forceps, Craniotomy, Cephalotripsy, etc., accompanied by Demonstrations on the Phantom.

PART III.—Uterine Hæmorrhage, Abortion, Placenta Prævia, Post-partum Hæmorrhage, Puerperal Eclampsia, Septicæmia, Phlegmasia Dolens, Puerperal Insanity, Puerperal Venous Thrombosis and Embolism, etc.

TEXT BOOKS.—Playfair's Theory and Practice of Midwifery. Galabin's Midwifery. Difficult Labour, Herman.

## PRINCIPLES OF CHEMISTRY.

Professor BEDSON, M.A., D.Sc., at the Durham College of Science.

*On Monday, Wednesday, and Friday, at 11 a.m.*

THE GENERAL PRINCIPLES OF CHEMISTRY.—A description of the properties of the commoner elements (non-metallic and metallic), and their more important compounds.

Students are required to satisfy the Professor that they are keeping regular notes of the Lectures, and will be expected to pass satisfactorily at least one of the terminal examinations.

TEXT BOOKS.—Roscoe's Lessons in Elementary Chemistry. Tilden's Manual of Inorganic Chemistry. Lupton's Chemical Arithmetic.

## ORGANIC CHEMISTRY.

During the second half of the Winter Session a Series of Lectures will be given on *Organic Chemistry*. This Class will meet on Tuesday and Thursday, at 11 a.m., and on Friday, at 3 p.m.

Full Students may attend without payment of fee, and are expected to supplement their attendance on the Course of Lectures on the Principles of Chemistry delivered during the first Winter Session by attending these Lectures.

TEXT BOOK.—Perkin and Kipping's Organic Chemistry. Parts I. and II.



**PHYSICS.**

Professor H. STROUD, M.A., D.Sc., at the Durham College of Science.

*On Tuesday, at 10 a.m., during the Winter Session, and on Monday, at 4 p.m., during the Summer Session.*

The Lectures will be devoted to the demonstration of the principal Laws and Phenomena comprehended in the Synopses of Subjects of the First Examination for the Degree of Bachelor in Medicine. (See page 97.)

Written answers to questions set in the Lectures will be expected to be worked out and brought by Students, and will be returned corrected.

TEXT BOOKS.—D. E. Jones' Heat and Light. Cummings' Electricity, treated experimentally.

**LECTURES ON****SANITARY CHEMISTRY AND PHYSICS.**

*(During first half of Session.)*

Professors BEDSON and STROUD, at the Durham College of Science.

*On Thursday—Physics, 4 p.m., Chemistry, 5 p.m.*

**SANITARY CHEMISTRY.****LABORATORY COURSE.**

*(Times to be arranged.)*

Professor BEDSON, at the Durham College of Science.

BOOKS RECOMMENDED.—Parkes' Hygiene. Wilson's Hygiene. Stevenson and Murphy's Treatise on Hygiene and Public Health. Wanklyn's Water Analysis. Noel Hartley's Air, Water, and Disinfectants. Hydrostatics and Pneumatics, Magnus (Longmans). Laws of Health, Corfield (Longmans), and selections from other works.

**BIOLOGY.**

Professor M. C. POTTER, M.A., F.L.S., at the Durham College of Science.

*On Tuesday and Thursday at 11 a.m.*

A Course of Lectures with Practical work will be given during the Winter Session, corresponding to that arranged in the Summer Session (see p. 46).

These Courses are accepted by the Royal Colleges of Physicians and Surgeons as covering the instruction in Comparative Anatomy required for the Diploma of F.R.C.S.



## PUBLIC HEALTH.

HENRY E. ARMSTRONG, D.Hy., M.R.C.S., Medical Officer of Health for the City and County of Newcastle-upon-Tyne, and Medical Superintendent of the City Hospital for Infectious Diseases.

*\* On Tuesday and Thursday, at 4 p.m.*

Part I.—Sanitary Medicine.

„ II.—Practical Hygiene.

„ III.—Elementary Bacteriology.

\* N.B.—On Monday at 3 p.m. during the first half of the Winter Session, Professor Murray will Lecture on Elementary Bacteriology, and give demonstrations on Friday afternoon in the Laboratory.

TEXT BOOKS.—Wilson's Hand-book of Hygiene. Newsholme's Vital Statistics. Louis Parkes' Hygiene and Public Health. Knight's Public Health Acts. Scott's Elementary Meteorology.

## COMPARATIVE PATHOLOGY AND BACTERIOLOGY.

GEORGE R. MURRAY, M.A., M.D., F.R.C.P., Heath Professor of Comparative Pathology in the University, Physician to the Royal Infirmary, Newcastle-upon-Tyne.

The instruction given in this department will consist of :—

- 1.—Course of Lectures on Elementary Bacteriology.
- 2.—Course of Lectures on Comparative Pathology.
- 3.—Course of Practical Bacteriology.

### 1.—ELEMENTARY BACTERIOLOGY.

A Course of Lectures on Elementary Bacteriology will be given as a part of the Public Health Course on Monday at 3 p.m. during October, November, and December. Demonstrations will be given in the Laboratory on Friday afternoon. This Course may be taken separately on payment of a fee of two guineas.

### 2.—COMPARATIVE PATHOLOGY.

A Course of Lectures with Demonstrations on Comparative Pathology will be given on Monday, Wednesday, and Friday at 2.30 p.m. during January, February, and March. This



Course may be taken separately on payment of a fee of three guineas.

### 3.—PRACTICAL BACTERIOLOGY.

This Course will be given on Monday, Wednesday, and Friday, from 3 till 5 p.m. during January, February, and March. During these months the Laboratory is open daily to members of the class from 10 till 5. This Course can only be taken in conjunction with the Lectures on Comparative Pathology.

The Laboratory is open for private research on payment of one guinea per month.

#### SYLLABUS.

The Comparative Pathology of Anthrax, Tuberculosis, Glanders, Tetanus, Diphtheria, Actinomycosis, Rabies, and Diseases caused by Animal Parasites.

The Morphology of Microbes and Animal Parasites.

The various methods of artificial cultivation of Micro-organisms. The mode of preparation and method of sterilisation of liquid and solid culture media.

The staining of microbes in fluids and in the tissues.

The Bacteriological examination of Earth, Air, Water, Food, etc.

Modes of infection (natural and artificial) by Pathogenic Micro-organisms, and Animal Parasites.

Special characteristics and properties of the Pathogenic Micro-organisms of Actinomycosis, Anthrax, Blue Pus, Chicken Cholera, Asiatic Cholera, Diphtheria, Erysipelas, Endocarditis, Glanders, Leprosy, Malaria, Malignant Œdema, Osteo-myelitis, Plague, Pneumonia, Pyæmia and Septicæmia, Relapsing Fever, Suppuration, Swine Erysipelas, Tetanus, Tuberculosis, Typhoid Fever, etc.

Natural and Acquired Immunity. The preparation of Antitoxic Serums.

Every Student is required to provide himself with a good microscope, which if possible should be fitted with a  $\frac{1}{2}$  inch, a  $\frac{1}{4}$  inch, and a  $\frac{1}{12}$  inch (oil immersion) lens with an Abbe's condenser.

BOOKS RECOMMENDED.—Manual of Bacteriology, Muir and Ritchie, or Manual of Bacteriology, Crookshank. Practical Bacteriology Kanthack and Drysdale. Tropical Diseases, Manson. Parasites, Cobbold, or Parasites of Man, Leuckart.

BACTERIOLOGICAL DIAGNOSIS.—The ordinary Bacteriological examinations for the purposes of clinical diagnosis are made in this department for Medical Practitioners at a fee of five shillings for each examination; for Hospitals and Sanitary Authorities, half-a-crown is charged.

### PRACTICAL PHARMACY.

In the Dispensary of the Royal Infirmary.



# SUMMER SESSION,

1900.

COMMENCING MAY 1ST, ENDING JULY 27TH.

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## LECTURES AND LECTURERS.

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### MEDICAL JURISPRUDENCE.

J. MURPHY, M.A., M.D., Surgeon to the Sunderland Infirmary.

*On Tuesday and Thursday, at 4 p.m.*

Definition of Medical Jurisprudence.

The legal position of Medical Men.

The Coroner's Court. The Medical Witness.

Suspended Animation. Death. Certificate of Death, when to be refused. Legal presumption of Death. Dying declarations. Wills made at the time of Death. Methods of Dying. Changes in the condition of a Corpse.

Wounds. Legal Definition of. Dangerous to life. Causing grievous bodily harm. Was the Wound received during Life or after Death? Homicide. Suicide. Accident. Did the Injury cause Death, directly or indirectly? Murder. Manslaughter. Particular injuries of the Head, Heart, and other Organs. Gunshot Wounds. Railway injuries, Compensation for.



Offences against Chastity. Rape. Pregnancy. Criminal Abortion. Infanticide. Concealment of Birth.

Asphyxia. Drowning. Hanging. Suffocation.

Inheritance. Life Assurance. Lunacy. Legal Responsibility of the Insane. Toxicology.

TEXT BOOK.—Guy and Ferrier's Handbook.

### **PATHOLOGY.**

DAVID DRUMMOND, M.A., M.D., D.C.L., Physician to the Royal Infirmary, Newcastle, assisted by ROBERT A. BOLAM, M.D., B.S.

*Monday, Wednesday, and Friday, at 4 p.m.*

In this Course each Student will receive a complete series of ready-mounted specimens prepared by the Paraffin, Celloidin, and Freezing Methods. At each meeting of the Class the subjects relating to the specimens distributed are first dealt with in a brief Lecture, illustrated by means of Photomicrographs and by the Projection Microscope. This is followed by individual demonstration of the slides for the day. For this purpose every Member of the Class, before commencing the Course, must be provided with a good microscope having low and high powers.

In connection with this Course Dr. Bolam will give a series of Demonstrations on Chemical Pathology.

TEXT BOOKS.—Green's Pathology and Morbid Anatomy. Sims Woodhead's Practical Pathology.

### **MATERIA MEDICA AND THERAPEUTICS.**

S. McBEAN, M.A., M.D.

*On Monday, Wednesday, and Friday, at 4 p.m.*

### **OPERATIVE SURGERY.**

W. C. ARNISON, M.D., D.C.L., M.R.C.S., Professor of Surgery in the University, and Consulting Surgeon to the Royal Infirmary, Newcastle, and F. PAGE, M.A., M.D., Surgeon to the Royal Infirmary, Consulting



Surgeon to the Fleming Memorial Hospital for Sick Children, and to the Borough Lunatic Asylum, Cox-lodge, Newcastle.

*Daily at 8.30 a.m., by Professor Arnison.*

*On Monday, Tuesday, Wednesday, and Thursday at 3 p.m.,  
by Mr. Page.*

Every Student attending the Class is called upon to perform Operations on the dead subject in turn, and to answer questions as to the different modes in which each operation may be performed.

TEXT BOOKS.—Treves' Operative Surgery. Jacobson's Operative Surgery.

## PRACTICAL PHYSIOLOGY.

G. E. WILLIAMSON, M.A., F.R.C.S., Surgeon to the Royal Infirmary, Newcastle, and R. A. BOLAM, M.D., B.S.

### I.—PRACTICAL HISTOLOGY.

Mr. WILLIAMSON.

*Tuesday at 12, Wednesday and Saturday at 9 a.m.*

Each Student is rendered familiar with the fundamental methods of Histology by making for himself preparations of the more common tissues. Stained sections, prepared chiefly by the Paraffin Method, are also distributed, so that at the end of the course the Student will possess a complete set of specimens illustrating the minute anatomy of the tissues and organs of the body. By means of the Electric Lantern and Projection Microscope, the various tissues are systematically demonstrated upon the screen—Lectures being given at intervals for this purpose.

APPARATUS.—Each Student must provide himself, before commencing the Course, with the following apparatus and re-agents:—A good microscope, with low and high powers; box for slides, to hold nine dozen; nine dozen micro slides, 3 inches by 1 inch; thin cover slips,  $\frac{3}{4}$ -inch circles or squares,  $\frac{1}{2}$  ounce; labels for slides; a note book; two strong



handled needles; pair of fine forceps; small camel hair brush; section lifter; two small watch glasses; an "Army" razor (1s.); a wide-mouthed capped bottle fitted with pipette and containing Xylol; similar bottle containing Canada Balsam in Xylol; small bottle of Schällibaum's Collodion; small bottle of Farrant's Medium; small bottle of Glycerine.

TEXT BOOK.—Schäfer's Essentials of Histology.

## II.—ADVANCED PRACTICAL PHYSIOLOGY.

R. A. BOLAM, M.D., B.S.

This Course is intended for Students who are preparing for the Intermediate Examination in Medicine of the London University, or for the Primary Fellowship Examination of the Royal College of Surgeons. It consists of Laboratory Work in Physiological Physics, Chemical Physiology, and Histological Methods of a more advanced nature.

This Class meets for two hours twice a week during the Winter or the Summer Session. The fee for the Class of Advanced Practical Physiology is three guineas for a three months' Course.

## PRACTICAL CHEMISTRY.

Professor BEDSON, M.A., D.Sc., at the Durham College of Science.

*Every Monday and Wednesday, from 10 a.m. to 1 p.m., and Tuesday, from 2 p.m. to 5 p.m.*

This Course is intended to make the Student familiar with the elements of qualitative analysis; the detection of the commoner bases and acids in simple salts; the reactions of glucose, cane sugar, fats, urea, uric acid, and of the commoner alkaloids.

A portion of the time set apart for this Course is devoted to a series of Lectures on the elements of Organic Chemistry. The Laboratories are open daily from 10 a.m. to 1 p.m., and from 2 p.m. to 5 p.m.



## PRACTICAL PHYSICS.

Professor H. STROUD, M.A., D.Sc., at the Durham College of Science.

*Wednesday and Friday, from 2 p.m. to 5 p.m., during the Summer Session. (See also page 38).*

This Course is designed to afford Students the opportunity of becoming familiar with the use of the simpler Physical Instruments. It will include experiments in Experimental Mechanics, Heat, Electricity, and Optics.

TEXT BOOK.—Stroud's Elementary Practical Physics.

## SANITARY CHEMISTRY.

LABORATORY COURSE.

*(Times to be arranged.)*

Professor BEDSON, at the Durham College of Science.

BOOKS RECOMMENDED.—Parkes' Hygiene. Wilson's Hygiene. Stephenson and Murphy's Treatise on Hygiene and Public Health. Wanklyn's Water Analysis. Noel Hartley's Air, Water, and Disinfectants. Hydrostatics and Pneumatics, Magnus (Longmans). Laws of Health, Corfield (Longmans), and selections from other works.

## PSYCHOLOGICAL MEDICINE.

T. W. McDOWALL, M.D., Medical Superintendent of Northumberland County Asylum, Morpeth.

*Every Tuesday at the College of Medicine, Newcastle-on-Tyne, at 2 p.m.*

*On Thursday or Friday at the Asylum, Morpeth, at 2.45 p.m.*

The chief object of this Course is to convey Clinical Instruction. Systematic Lectures will be delivered at the College on Tuesdays, at 2 p.m., when the Classification, Causes, Symptoms, Treatment, and some of the Medico-legal Relations of Mental Diseases will be considered.

During the Clinical Instruction at the Asylum, Students will have opportunities of examining cases and thus becoming familiar with the various forms of insanity.

TEXT BOOKS.—Any one of the following: Blandford's Insanity and its Treatment. Savage's Manual on Insanity. Clouston's Clinical Lectures on Mental Diseases. Campbell Clark's Mental Diseases.



**ANATOMY.**

Professor HOWDEN, M.A., M.B., F.R.S.E.

*Dissections are carried on in Summer.*

A Course of Demonstrations on Anatomy for Senior Students will be given on Tuesday, Thursday, and Friday, at 9 a.m.

**NATURAL HISTORY.**

Professor G. S. BRADY, LL.D., M.D., F.R.S.

The Course of Lectures on Natural History delivered in the Durham College of Science qualifies for the primary examination for the Fellowship of the Royal College of Surgeons of England.

**ELEMENTARY BIOLOGY.**

Professor M. C. POTTER, M.A., F.L.S., at the Durham College of Science.

*Every Tuesday and Thursday, from 9 a.m. to 12; Saturdays, 10 a.m. to 1 p.m.*

The fundamental facts and laws of the Morphology, Histology, Physiology, and Life-histories of Plants as illustrated by, *Bacterium*, *Saccharomyces*, *Hæmatococcus*, *Spirogyra*, *Mucor*, *Fucus*, *Fern*, *Flowering Plant*.

The fundamental facts and laws of Animal Morphology as illustrated by *Amæba*, *Vorticella*, *Hydra*, *Tænia*, *Lumbricus*, *Astacus*, *Amphioxus*, *Scyllium*, *Rana*, *Lepus*.

A consideration of the general developmental history of *Amphioxus*, *Rana* and *Gallus*.

Practical instruction in the general structure of each of the animal and vegetable types above specified will be given.

Each Student is required to provide himself with Microscope, Dissecting Instruments, and Razor.

TEXT BOOKS.—Marshall and Hurst's Practical Zoology. Marshall's Frog. Bower's Practical Botany. Potter's Botany.

**CURATOR OF MUSEUM.**

Professor HOWDEN, M.A., M.B., F.R.S.E.



TIME TABLES OF LECTURES AND CLASSES.  
WINTER, 1899-1900.

	M.	TU.	W.	TH.	F.	S.
*Anatomy Lectures { Senior	—	12	12	12	—	—
Junior	12	—	—	—	12	—
Regional	—	—	—	2·15	2·15	—
Anatomical Demonstrations	2·15	2·15	2·15	—	—	—
Physiology .. .. .	9·15	—	9·15	—	9·15	—
Chemistry .. .. .	11	—	11	—	11	—
**Organic Chemistry .. ..	—	11	—	11	3	—
Medicine .. .. .	5	—	5	—	5	—
Surgery .. .. .	6	—	6	—	6	—
p Midwifery and Diseases of Women and Children ..	—	3	3	3	—	—
Public Health Lectures ..	†3	4	—	4	—	—
‡ Comparative Pathology ..	2·30	—	2·30	—	2·30	—
Physics .. .. .	—	10	—	—	—	—
Practical Anatomy .. ..	9-5	9-5	9-5	9-5	9-5	9-12
Practical Chemistry .. ..	9·30-4·30	—	9·30-4·30	—	—	9·30-12·30
‡ Practical Bacteriology ..	10-5	10-5	10-5	10-5	10-5	10-12
Biology .. .. .	—	11	—	11	—	—
Practical Physiology .. ..	10·15	—	10·15	—	10·15	—

\* After Christmas the Junior Class will meet on Wednesdays at 12 instead of the Senior. \*\* During January, February, and March. † Elementary Bacteriology during October, November, and December. ‡ During January, February, and March. p During October, November, and December.

SUMMER, 1900.

	M.	TU.	W.	TH.	F.	S.
Medical Jurisprudence ..	—	4	—	4	—	—
Pathology .. .. .	4	—	4	—	4	—
Elementary Biology .. ..	—	9-12	—	9-12	—	10-1
Materia Medica .. .. .	4	—	4	—	4	—
Operative Surgery .. {	8·30 a.m. 3 p.m.	8·30 a.m. 3 p.m.	8·30 a.m. 3 p.m.	8·30 a.m. 3 p.m.	8·30 a.m.	8·30 a.m.
Practical Chemistry .. ..	10-1	2-5	10-1	—	—	—
Practical Histology .. ..	—	12	9	—	—	9
Psychological Medicine ..	—	2	—	2·45*	2·45*	—
Practical Anatomy .. ..	9-5	9-5	9-5	9-5	9-5	9-12
Anatomical Demonstrations	—	9	—	9	9	—
Practical Physics .. .. .	—	—	2-5	—	2-5	—
Physics .. .. .	4	—	—	—	—	—

\* In the Wards of the Northumberland County Asylum, Morpeth.



VISITING DAYS, ETC., AT ROYAL INFIRMARY.  
1899-1900.

	M.	TU.	W.	TH.	F.	S.
In-Patient Department.						
Physicians:—						
Dr. Drummond .. .. .	—	—	10	—	—	10
Dr. Oliver .. .. .	10	—	—	—	10	—
Dr. Limont .. .. .	10	—	—	10	—	—
Dr. Murray .. .. .	—	10	—	—	—	10
Surgeons:—						
Dr. Hume .. .. .	—	—	*10	—	—	10
Mr. Page .. .. .	—	—	10	—	—	*10
Mr. Williamson .. .. .	—	10	—	—	*10	—
Mr. Morison .. .. .	*10	—	—	—	10	—
Out-Patient Department.						
Physicians:—						
Dr. Drummond .. .. .	10:30	—	—	—	—	—
Dr. Oliver .. .. .	—	10	—	—	—	—
Dr. Limont .. .. .	—	—	—	—	9:30	—
Dr. Murray .. .. .	—	—	10	—	—	—
Assistant Surgeons:—						
Mr. Ridley .. .. .	—	—	—	9	—	9
Mr. Martin .. .. .	—	—	9	—	—	9
Mr. Angus .. .. .	9	—	—	—	9	—
Mr. Rutherford .. .. .	9	—	—	—	9	—
Medical Clinical Lecture ..	—	—	11	—	—	—
Surgical „ „ ..	—	—	—	10	—	—
Eye Department:—						
Mr. Williamson .. .. .	11	—	—	9	—	—
Skin Department:—						
Dr. Limont .. .. .	—	—	—	—	9:30	—
Department for Diseases of Women .. .. .	—	10	—	—	—	—
Throat & Ear Department:—						
Mr. Ridley .. .. .	—	—	—	10	—	—
Orthopædic Department:—						
Mr. Martin .. .. .	—	—	11	—	—	—
Dental Surgeon:—						
Mr. Markham .. .. .	—	4	—	—	4	—
Casualties and Reception of In and Out-Patients:—						
By House Physicians and House Surgeons .. .. .	2 p.m.	2 p.m.	2 p.m.	2 p.m.	2 p.m.	2 p.m.

\* Operation Days.



## HOSPITAL PRACTICE.

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Hospital Practice may be attended at the Royal Infirmary, Newcastle, in which the required Medical and Surgical Clinical Lectures are delivered. Clinical Instruction is given in the Wards, and Examinations are held by the Physicians and Surgeons.

### *Physicians.*

DR. DRUMMOND.

DR. OLIVER.

DR. LIMONT.

DR. MURRAY.

### *Surgeons.*

DR. HUME.

MR. PAGE.

MR. WILLIAMSON.

MR. MORISON.

## CLINICAL LECTURES.

Lectures on Clinical Medicine are delivered by the Physicians, in rotation, on Wednesdays at 11 o'clock. Notice of the days and hours of the Clinical Instruction in the Wards is posted in the entrance hall of the Royal Infirmary at the commencement of the Winter and Summer Sessions.

Lectures on Clinical Surgery are delivered by the Surgeons, in rotation, on Thursdays at 10 o'clock.

Pathological Demonstrations are given at 11.30 a.m., as opportunity offers, by the Pathologist.

EYE DEPARTMENT.—Demonstrations are given to the Students on Mondays at 11 o'clock, and on Thursdays at 9 a.m.

SKIN DEPARTMENT.—Demonstrations are given in the out-patient department on Fridays at 9.30 a.m.

THROAT AND EAR DEPARTMENT.—Demonstrations are given in the out-patient department on Thursdays at 10 a.m.

DEPARTMENT FOR DISEASES OF WOMEN.—Demonstrations in out-patient department by the Physicians on Tuesdays at 10 a.m. Clinical Lectures by the Surgeons once a fortnight and Ward Demonstrations as opportunity offers.

ORTHOPÆDIC DEPARTMENT.—Demonstrations are given on Wednesdays at 11 a.m.



HOSPITAL FOR INFECTIOUS DISEASES.—Notice of the days and hours of Clinical Instruction will be posted in the College of Medicine and in the Royal Infirmary, at the beginning of the Winter Session.

NORTHUMBERLAND COUNTY LUNATIC ASYLUM.—Clinical Instruction is given weekly during the Summer Session.

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### FEES FOR LECTURES AND HOSPITAL PRACTICE.

1. A Composition Ticket for the complete series of Courses of Lectures at the College\* may be obtained :—

- (i.) By the payment of 70 guineas on entrance.
- (ii.) By two payments, the first of 45 guineas at the commencement of the first year, and 35 guineas at the commencement of the second year.
- (iii.) By the payment of three annual instalments, the first of 35 guineas, the second of 30 guineas, and the third of 20 guineas, at the commencement of the Sessional Year.

In the event of it becoming necessary for a Student to take out any extra course, he will be required to pay the special fee for that course.

\* \* \* The Council wish it to be clearly understood that the payment of the composition fee does not confer the right to attend the College in perpetuity, and that if, after the completion of his curriculum, the further attendance of a Student shall be deemed from any cause undesirable, the Council shall have the right, if they think proper, to debar such Student from further attendance.

Single Courses of Lectures, 5 guineas, except the Courses of Practical Pharmacy and Physics, which are each 2 guineas ; and the Course of Lectures on Sanitary Chemistry and

\* By the complete series of Courses of Lectures is understood the series of Courses tabulated on pp. 29 to 31 of this Prospectus.



Physics for the Degree of Bachelor in Hygiene and for the Diploma in Public Health, which is 3 guineas. The Fee for three months' instruction in the Chemical Laboratory is 5 guineas, and for three months' instruction in the Bacteriological Laboratory, 6 guineas. The Fee for Dissections is 3 guineas in Winter, and 2 guineas in the Summer. The Fee for each Course or half Course attended by Candidates rejected at any Degree Examination is 2 guineas.

2. Fees for attendance on Hospital Practice :—

	Guineas.
For three months' Medical and Surgical Practice	5
Six months' Medical and Surgical Practice ...	8
One year's Medical and Surgical Practice in one payment ... ..	12
Composition Fee for Medical and Surgical Practice in one payment ... ..	25

Or by instalments at the commencement of the Sessional Year, viz. :—First year, 12 guineas ; second year, 10 guineas ; third year, 6 guineas ; or by two instalments, viz. :—First year, 14 guineas ; second year, 12 guineas.

In addition to the above fees, the Committee of the Royal Infirmary require the payment of 2 guineas yearly up to three years, from every Student attending the Royal Infirmary for a year or part of a year, which payment has to be made to the House Governor. After three years of attendance, such payment will be no longer necessary.

3. The fee for attendance on the Practice of the Hospital for Infectious Diseases during the Winter is 2 guineas.

The fee for six months' practical study of out-door Sanitary work is 8 guineas.

The fee for a course of instruction in Vaccination is one guinea and a half.

A fee of half-a-guinea is charged for each "Part" taken for Dissection, and from every Member of the Class on Operative Surgery.

A fee of 10s. is required for the use of the College Library from Students attending the College for one year only, and a fee of 15s. from those attending for the full period.




One guinea caution money, to be returned at the end of the Session, less the cost of any loss or damage, is required for the use of Apparatus in the Chemical Laboratories, and 10s. caution money for the use of Books.

Every Student is required to join the Athletic Club, which is managed by an Executive Committee elected by the Students, and supported by the Staff of the College, to promote Athletic Pursuits, viz.: Football (Association and Rugby), Cricket, Tennis, Swimming, etc.

The Club Ground, six acres in extent, offers exceptional facilities for Cricket, Lawn Tennis, and Football, and is provided with a comfortable Pavillion, while a Professional Groundsman is in constant attendance.

The Subscription is 1 guinea per annum, payable to the Secretary at the time of Registration.

Fees for Lectures, etc., at the College, must be paid to the Secretary at the College; Fees for Hospital Practice or Clinical Lectures, to the Senior House Physician at the Royal Infirmary; Fees for attendance at the Hospital for Infectious Diseases and out-door Sanitary work to Dr. H. E. Armstrong, Health Department, Town Hall; and the fee for course of instruction in Vaccination to Dr. Frank Hawthorn, The Dispensary, Nelson Street, Newcastle-on-Tyne.

 Students must understand that they are expected to attend all the Lectures in each Course in their curriculum, and that except in case of absence due to sickness or other unavoidable cause (to be approved by the Council), such attendance is necessary. Otherwise their Certificates are liable to be withheld.

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### RULES TO BE OBSERVED BY STUDENTS.

1. All Students, including those attending the Hospital Practice or Clinical Lectures, must enrol their names on the College Register *within a week* from the beginning of each Session. *Students who desire to enter after that time must make special application, and state why they have delayed entering their names.*



2. Students are required to be punctual and orderly in their attendance upon Lectures and Demonstrations, and to observe decorum in the College, Hospital, and elsewhere.

3. Regularity of attendance and orderly conduct at Lectures, Classes, and Class Examinations are necessary to secure Certificates of Attendance.

The following Resolutions have been adopted by the Council, viz. :—

(a) That a return be presented at the end of each Winter Session by the Professor of Anatomy, giving the names of those Students who have failed to present themselves for, or who have failed to pass their examinations within reasonable time, together with a report of their general conduct.

(b) That if a Student be known to be systematically neglecting his work at the College or Hospital, or fail to present himself for his examination within a reasonable time of the period at which in ordinary course he might have presented himself, a report of the fact be sent by the Council, to his parents or guardians, or to the person to whom the Student may be responsible for his conduct.

(c) Students systematically neglecting their work, or not complying with the regulations of the College, are liable to suspension.

4. Certificates and Prizes will only be granted when the work and conduct of the Student are satisfactory to the Council, and in all cases a Certificate or Prize may be refused on the ground that a Student has not conducted himself properly.

5. Students are required to make good, to the satisfaction of the Council, any damage or injury they may cause to the property of the College.

6. No specimens or preparations may be removed from the Museum, nor may any Books, or unbound Medical Journals, lying on the tables of the Students' Room or Museum be removed from the room.

7. Students are required to wear Academical Dress at Lectures, and at Class and Degree Examinations.



8. The infringement of the above, or any other rules, which may from time to time be passed by the Council, renders a Student liable to suspension or immediate dismissal from the College, and to the forfeiture of all fees, certificates, and privileges as a Student of the College.

9. No fee will be returned for any portion of the curriculum that a Student may have forfeited by irregularity or misconduct.

10. Smoking is strictly prohibited inside the College buildings, except in the Students' room and Dissecting room.

11. Every Student is required, on entering the College, to sign the following form :—

I, the undersigned, being a Student of the University of Durham College of Medicine, Newcastle-upon-Tyne, hereby undertake to comply with all Rules and Regulations of the College, and to conduct myself on all occasions in an orderly manner. I fully understand that I have no claim upon the Council of the College in respect of any Fees paid by or due from me in case such Fees are forfeited by any irregularity or misconduct on my part.

The Professor of Anatomy is specially empowered to see that the above rules of the College are observed, and carried out by the Students.





## SCHOLARS AND PRIZEMEN.

### University Scholars.

1856—William C. Arnison	1877—A. J. Beanlands
1857—Evan Thompson	1878—C. S. Blair
1858—John Hope	1879—J. S. Reveley
1859—W. R. Coward	1880—J. M. Robson
1860—A. O. Haslewood	1881—A. Green
1861—G. C. Gilchrist	1882—L. L. Bailes, B.A.
1862—F. W. Newcombe	1883—L. A. Baine
1863—W. J. Davidson	1884—A. E. Cope
1864—F. S. Higgs	1885—F. Bulman, B.A.
1865—No Candidate	1886—R. H. Shaw
1866—{ Dudley Eglington	1887—G. Foggin, B.A.
{ Charles Gibson	1888—W. E. Peacock
1867—R. W. Young	1889—Jno. Braithwaite
1868—Michael Hodgson	1890—R. A. Morris
1869—John Murray	1891—G. W. Harbottle
1870—Thomas Lindsay	1892—M. A. Archdall
1871—John B. Emmerson	1893—H. A. Fielden
1872—Motherwell Duggan	1894—H. B. Fawcus
1873—Chas. Riddell Bell	1895—F. W. Lambelle
1874—Chas. M. Goyder	1896—J. H. Graham
1875—J. R. Dodd	1897—W. M. Emmerson
1876—W. Robinson	1898—W. H. Peacock

### Dickinson Scholars.

1868—James Douglas Murray	1884—No Award
1869—George Rowell	1885—F. Proud
1870—John Teasdale Clarke	1886—B. G. Sumpter
1871—W. T. Kaye	1887—No Award
1872—Auburn Wilkinson	1888—H. J. Parry
1873—W. T. Wilson, M.A.	1889—R. H. Shaw
1874—No Award	1890—No Award
1875—George Newton	1891—No Award
1876—M. Duggan	1892—W. H. Bishop
1877—M. Malvin	1893—R. A. Morris
1878—C. M. Goyder	1894—E. R. Kendall
1879—Jno. R. Dodd	1895—J. R. Adamson
1880—W. G. Black	1896—Charles Salkeld, B.A.
1881—W. Robinson	1897—(No Award)
1882—S. Brookfield	1898—G. G. Turner
1883—No Award	



### Tulloch Scholars.

1877—J. R. Dodd	1888—No Award
1878—No Award	1889—No Award
1879—{ W. Robinson	1890—J. P. Willis
{ C. H. C. Milburn	1891—C. G. B. Kempe
1880—Samuel Brookfield	1892—Thos. Horton
1881—I. Hartley	1893—Jno. R. Adamson
1882—J. S. Reveley	1894—A. G. W. Pearson
1883—F. Proud	1895—Henry Coxon Coxon
1884—A. F. Bradbury	1896—Edward Gofton
1885—L. A. Baine	1897—J. R. Burn
1886—A. E. Cope	1898—Alfred Parkin
1887—F. Bulman, B.A.	1899—James Bowden Waters

### Charlton Scholars.

1877—Mark Malvin	*1889—R. H. Shaw
1878—C. M. Goyder	1890—Henry Smith
1879—Hugh T. Bowman	1891—W. J. Durant
1880—W. G. Black	1892—J. P. Willis
1881—W. Robinson	1893—A. E. Thompson
1882—S. Brookfield	1894—T. C. Barkas
1883—H. M. Fenwick	1895—E. R. Kendall
1884—J. M. Lazenby	1896—C. Salkeld, B.A.
1885—H. T. Platt	1897—D. W. Patterson
1886—B. G. Sumpter	1898—James Milligan
1887—J. W. Leech	1899—F. W. Lambelle
1888—H. J. Parry	

### Gibb Scholars.

1879—J. Foggin	1891—Benjamin May
1880—W. G. Black	1892—{ H. E. Gamlen
1881—W. Robinson	{ W. E. Peacock
1882—A. Dodd	1893—R. A. Morris
1883—J. M. Lazenby	1894—{ E. R. Kendall
1884—Fredk. Proud	{ W. E. Alderson
1885—A. Green	1895—F. S. Walker
1886—M. M. Bowlan	1896—Charles Salkeld, B.A.
1887—H. J. Parry	1897—H. Coxon Coxon
1888—A. E. Cope	1898—{ J. Muirhead
1889—R. F. Craggs	{ G. G. Turner
1890—Alf. Cox	

### Goyder Scholars.

1885—No Scholarship awarded	1893—B. H. Morris
1886—W. Baigent	1894—T. C. Barkas
1887—No Award	1895—E. R. Kendall
1888—H. J. Parry	1896—Norman McCall-Smith
1889—R. H. Shaw	1897—W. L. W. Walker
1890—Thos. Beattie	1898—G. G. Turner
1891—Wm. Jas. Durant	1899—James Muirhead
1892—J. P. Willis	

In the Examination for the Charlton Scholarship in 1889, Mr. C. A. Dalgleish obtained the highest number of marks, but was ineligible for the scholarship being a Fifth Year's Student.



### Gibson Prizemen.

1897—D. W. Patterson  
1898—Edward Gofton

1899—F. W. Lambelle

### Luke Armstrong Scholars.

(FINAL EXAMINATION FOR DEGREE OF M.B.)

1889—Albert Ernest Cope, M.B., B.S.  
1890—Thos. Beattie, M.B., B.S.  
1891—Edward Cecil Willcox, M.B., B.S.  
1892—Wm. Harvey Maidlow, M.B., B.S., M.R.C.S., L.R.C.P.  
1893—Bedlington Howell Morris, M.B., B.S.  
1894—Thomas Horton, M.B., B.S.  
1895—Chas. Allan La Touche Brough, M.B., B.S., L.R.C.P.  
1896—Edwin Gilbert Emerson Arnold, M.B., B.S., M.R.C.S.,  
L.R.C.P.  
1897—D. W. Patterson, M.B., B.S.

### Luke Armstrong Scholar in Comparative Pathology.

1898—P. E. Turner, M.B., B.S., M.R.C.S., L.R.C.P.

### Stephen Scott Scholars.

1893—No Award	1896—No Award
1894—No Award	1897—Bertram C. Stevens
1895—C. G. B. Kempe, M.B., B.S.	1898—No Award

### Heath Scholars.

1896—George Palmerston Newbolt, M.B., F.R.C.S.  
1898—C. G. B. Kempe, M.B., B.S.

### Assistant Demonstrators of Anatomy.

1880-81	{ B. W. Walker, L.R.C.P., M.R.C.S. C. Vise, M.R.C.S. D. H. Barley H. M. Fenwick (retired ill) G. W. Ridley, app. Jan., 1881	1883-84	{ T. Carr, M.R.C.S. C. E. Jennings, F.R.C.S., L.R.C.P. A. C. Dove A. J. H. Montague
1881-82	{ S. T. Pruen James Watson F. E. Abbot I. Hartley (retired) G. G. Howitt, app. Jan., 1882	1884-85	{ F. Bass, F.R.C.S. P. Boobbyer, M.R.C.S. R. Heelis, M.R.C.S. W. Race A. B. Blacker, M.R.C.S.
1882-83	{ Simpson Powell, M.R.C.S. Cornelius C. Caleb F. A. Saw G. P. Newbolt	1885-86	{ G. A. E. Murray, L.R.C.P., M.R.C.S. C. U. Laws, M.R.C.S.



1886-87	{ T. Wholey, L.R.C.P., M.R.C.S. A. M. Jones, M.R.C.S., L.S.A.	1892-93	{ W. E. Alderson W. E. Rielly G. E. Pearcey P. Davidson
1887-88	{ R. C. Benington, L.R.C.P. M.R.C.S. W. H. Coates, F.C.S. H. B. Angus	1893-94	{ H. L. Hatch, M.R.C.S., L.R.C.P. H. D. Senior, M.R.C.S., L.R.C.P. H. Robinson, M.R.C.S., L.R.C.P.
1888-89	{ James Scott Tew, M.R.C.S., L.S.A. Avery Clough Waters, M.R.C.S., L.S.A.	1894-95	{ James Coltman Percy Holgate Charles Salkeld, B.A. T. O. Scott, M.A.
1889-90	{ C. W. Turner, M.R.C.S. J. A. Hutton, M.R.C.S., L.R.C.P. T. M. Allison R. H. Cole	1895-96	{ H. C. Coxon J. M. Gover W. B. Milbanke G. G. Turner
1890-91	{ J. P. Willis Benj. May W. E. Peacock A. E. Merewether	1896-97	{ N. C. Bailes J. W. H. Boyd Edward Gofton J. Muirhead
1891-92	{ C. H. Bryant A. Y. Richardson C. G. B. Kempe J. T. M. Whitling	1897-98	{ Reginald Alderson Maurice Jacobs F. W. Lambelle
		1898-99	{ T. S. Coates George Mack A. Parkin A. H. Proctor

### Assistant Curators of Museum.

1878-79	—H. T. Bowman	1883-84	{ J. M. Lazenby B. C. Simpson
1879-80	—R. P. Stubbs	1884-85	—A. F. Bradbury (6 mos.)
1880-81	—W. Robinson	1885	—J. Stokes (6 mos.)
1881-82	{ J. Waldy (retired) S. Brookfield (App. Oct. 1881)	1886	—G. W. Davis, L.R.C.P. M.R.C.S.
1882-83	{ A. Dodd (retired) A. Bourne	1887	—C. R. Adams

### Assistant Demonstrators of Physiology.

1879	{ C. H. C. Milburn W. Turnbull	1881	{ G. W. Ridley F. L. Carter
1880	{ R. Hardie D. H. Barley H. M. Fenwick	1882	—F. L. Carter
		1883	—J. Lazenby



1884	{	B. C. Simpson
	{	W. Race
1885	{	W. Race
	{	W. H. G. Williams
1886	{	W. H. G. Williams
	{	H. J. Parry
	{	H. J. Parry
1887	{	A. E. Cope
	{	A. P. Arnold
1888	{	A. P. Arnold
	{	F. Bulman, B.A.
1889	{	C. W. Turner, M.R.C.S.
	{	A. Cox
1890	{	Jno. Braithwaite
	{	W. E. Peacock
	{	Jno. Braithwaite
1891	{	J. W. H. Eyre
	{	R. A. Bolam
	{	C. H. Bryant
	{	T. C. Barkas
1892	{	Thos. Horton
	{	Geo. E. Pearcey
	{	A. H. Hobbs
1893	{	E. Tonge
	{	T. H. Urwin
	{	J. S. Manford

	{	C. Salkeld, B.A.
	{	T. O. Scott, M.A.
1894	{	E. W. Gilroy
	{	A. G. W. Pearson
	{	J. Coltman
	{	H. C. Coxon
1895	{	L. S. Davison
	{	J. M. Gover
	{	C. Johnson
	{	E. Gofton
	{	L. F. Hemmans
1896	{	J. T. Johnson
	{	Jas. Milligan
	{	Jas. Muirhead
	{	R. H. Dix
1897	{	Jas. Muirhead
	{	Robert Peart
	{	R. S. Hindmarch
1898	{	Alfred Parkin
	{	A. H. Proctor
	{	H. Reah
	{	J. W. Crawford
	{	George Mack
1898-	{	A. Parkin
99	{	A. H. Proctor
	{	Norman B. Walker
	{	J. B. Waters

### Assistant Demonstrators of Pathology.

1887	—	H. J. Parry
1888	—	S. Bodger
1889	—	R. F. Craggs
1890	{	C. W. Turner, M.R.C.S.
	{	W. H. Turnbull
1891	{	W. E. Peacock
	{	Benj. May
	{	Benj. May
1892	{	R. A. Bolam
	{	G. H. V. Appleby
	{	H. E. Gamlen
1893	{	R. A. Bolam
	{	A. Y. Richardson
	{	J. S. Manford
1894	{	E. R. Kendall
	{	Wm. Simpson
	{	G. W. Scott
1895	{	E. W. Gilroy
	{	C. Salkeld, B.A.
	{	T. O. Scott, M.A.

	{	H. C. Coxon
	{	E. W. Gilroy
1896	{	Charles Johnson
	{	C. Salkeld, B.A.
	{	T. O. Scott, M.A.
	{	H. C. Coxon
	{	Edward Gofton
1897	{	L. F. Hemmans
	{	Jas. Milligan
	{	C. Salkeld, B.A.
	{	Norman C. Bailes
	{	J. R. Burn
1898	{	R. H. Dix
	{	J. Muirhead
	{	T. S. P. Parkinson
	{	R. Peart
	{	R. Alderson
	{	J. R. Burn
1899	{	R. H. Dix
	{	T. S. Parkinson
	{	R. Peart
	{	H. Reah



# CLASS PRIZES.

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## SUMMER SESSION, 1898.

### PRACTICAL CHEMISTRY—

Prize and 1st Class Honour Certificate—H. L. Currie

2nd Class Honour Certificate—J. M. Shaw

2nd           "           "           N. B. Walker

2nd           "           "           J. B. Waters

2nd           "           "           J. A. Bennett

3rd           "           "           J. W. Crawford

3rd           "           "           Charles H. Crass

### PRACTICAL PHYSICS—

2nd Class Honour Certificate—J. B. Waters

3rd           "           "           H. L. Currie

3rd           "           "           W. M. Emmerson

### BIOLOGY—

Prize and 1st Class Honour Certificate—J. B. Waters

1st Class Honour Certificate—W. M. Emmerson

2nd           "           "           J. F. Dover

2nd           "           "           N. B. Walker

3rd           "           "           R. Younger

3rd           "           "           W. C. M. Bothwell

3rd           "           "           Andrew Smith

3rd           "           "           J. A. Bennett

### MATERIA MEDICA—

Prize and 1st Class Honour Certificate—W. R. D. Daglish

1st Class Honour Certificate—George Mack

3rd           "           "           T. S. Coates

### PATHOLOGY—

Prize and 1st Class Honour Certificate—F. W. Lambelle

2nd Class Honour Certificate—R. Alderson

### PRACTICAL PHYSIOLOGY—

Prize and 1st Class Honour Certificate—Alfred Parkin

1st Class Honour Certificate—A. H. Proctor

2nd           "           "           R. S. Hindmarch

3rd           "           "           H. Reah

3rd           "           "           Geo. Mack

3rd           "           "           C. C. Adeniyi-Jones



## PRACTICAL HISTOLOGY—

Prize and 1st Class Honour Certificate—J. B. Waters

1st Class Honour Certificate—Lætitia N. Ede

2nd        ,,                ,,        Mary E. De Rusett

## OPERATIVE SURGERY—

3rd Class Honour Certificate—Ed. Gofton

## MEDICAL JURISPRUDENCE—

Prize and 1st Class Honour Certificate—T. S. P. Parkinson

1st Class Honour Certificate—R. Alderson

1st        ,,                ,,        F. W. Lambelle

3rd        ,,                ,,        R. H. Dix

## PSYCHOLOGY—

2nd Class Honour Certificate—J. Muirhead

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WINTER SESSION, 1898-99.

## PRINCIPLES AND PRACTICE OF MEDICINE—

Prize and 1st Class Honour Certificate—Reginald Alderson

2nd Class Honour Certificate—Maurice Jacobs

## PRINCIPLES AND PRACTICE OF SURGERY—

Prize and 1st Class Honour Certificate—Maurice Jacobs

## MIDWIFERY AND DISEASES OF WOMEN AND CHILDREN—

Prize and 1st Class Honour Certificate { R. S. Hindmarch } equal  
  { F. R. Scott }

## PUBLIC HEALTH—

2nd Class Honour Certificate—F. P. Wigfield

ANATOMY—*Senior*—

3rd Class Honour Certificate—J. B. Waters

ANATOMY—*Junior*—

Prize and 1st Class Honour Certificate—J. F. Dover

1st Class Honour Certificate—W. H. Peacock

1st        ,,                ,,        C. H. Crass

1st        ,,                ,,        John Cooper

1st        ,,                ,,        J. R. Wylie

1st        ,,                ,,        B. S. Robson

2nd        ,,                ,,        D. R. Guns

2nd        ,,                ,,        Andrew Smith

2nd        ,,                ,,        W. R. L. Drawbridge

3rd        ,,                ,,        A. L. Wilkinson

3rd        ,,                ,,        A. H. Fullerton



## REGIONAL ANATOMY—

Prize and 1st Class Honour Certificate—R. H. Dix

1st Class Honour Certificate—R. Alderson

1st       "       "       J. R. Burn

2nd       "       "       A. H. Proctor

3rd       "       "       Maurice Jacobs

## PHYSIOLOGY—

Prize and 1st Class Honour Certificate—W. B. Black

## PRACTICAL PHYSIOLOGY—

Prize and 1st Class Honour Certificate—Monica L. M. Robertson

2nd Class Honour Certificate—J. B. Waters

3rd       "       "       W. M. Emmerson

DISSECTIONS—*Senior*—

Prize and 1st Class Honour Certificate—F. W. Ritson

1st Class Honour Certificate—Arthur Budd

2nd       "       "       Monica L. M. Robertson

2nd       "       "       R. Younger

3rd       "       "       J. H. McDowall

DISSECTIONS—*Junior*—

Prize and 1st Class Honour Certificate—A. H. Fullerton

1st Class Honour Certificate—John Cooper

1st       "       "       A. G. Dunn

1st       "       "       Andrew Smith

1st       "       "       A. L. Wilkinson

3rd       "       "       C. D. Relton

## CHEMISTRY—

Prize and 1st Class Honour Certificate—J. F. Dover

1st Class Honour Certificate—John Bolam

2nd       "       "       A. G. Dunn

3rd       "       "       W. H. Peacock

3rd       "       "       J. C. Stewart

3rd       "       "       B. S. Robson

## PHYSICS—

Prize and 1st Class Honour Certificate—J. F. Dover

1st Class Honour Certificate—C. H. Crass

1st       "       "       W. H. Peacock

1st       "       "       J. C. Stewart

1st       "       "       A. G. Dunn

3rd       "       "       J. R. Wylie

3rd       "       "       B. S. Robson

3rd       "       "       D. R. Guns



# LIST OF STUDENTS.

## SESSION 1898-99.

Adeniyi-Jones, Curtis Crispin  
 Alderson, Reginald  
 Alström, Hedda  
 Amyot, Thomas Engelhart  
 Anderton, John Cecil  
 Appleby, Ernest Bertram  
 Armstrong, Frederick George  
 Armstrong, Harry  
 Arnold, Walton Osborne †  
 Atkyns, Charles Harold Godwin  
 Bailes, Norman Christian  
 Bailey, Ernest Eastleigh \*  
 Batten, William Sayce  
 Black, William Brown  
 Blandford, Laurence James  
 Bodman, Christopher Osmond  
 Bolam, John  
 Bolton, Andrew Adams  
 Born, Edward Turner  
 Boyd, James William Hugh  
 Brown, George Burrows  
 Brown, Robert Story  
 Brown, Robert Tilbury †  
 Brown, Victor  
 Brown, William Cowan  
 Brumwell, Andrew William  
 Kinnear  
 Budd, Arthur  
 Burn, Frank Wilfred  
 Burn, James Robert  
 Cann, Thomas Ponsford  
 Carter, Ernest  
 Caton, John Wilfrid  
 Christal, Herbert  
 Clapham, Stanley Cowell †  
 Coates, Thomas Seymour  
 Cooper, John, B.Sc., F.C.S.  
 Cooper, Joseph Edwin  
 Cooper, Robert

Crass, Charles Harold  
 Crawford, John William  
 Cross, John William  
 Cross, Solomon  
 Currie, Harold Linton  
 Daglish, William Robert  
 Davidson  
 Davison, Henry Edward  
 Deans, William Wilkie  
 Denham, Henry  
 De Rusett, Mary Evelyn  
 Dickenson, George Oswald  
 Morrell  
 Dix, Richard Henry  
 Dixon, Henry William §  
 Dodd, Alice Maud  
 Dover, John Frederic  
 Drawbridge, Wilfred Ralph  
 Leycester  
 Dudgeon, Herbert William †  
 Dunn, Arthur Gibson  
 D'Vaz, Mary Jane  
 East, Guy Rowland  
 Ede, Lætitia Nora  
 Egglestone, Henry  
 Ellis, Henry Reginald †  
 Emmerson, William Morton  
 Farrage, James  
 Fawcus, Harold Ben  
 Fleming, William  
 Fox, Ida Emilie  
 Fox, Selina Fitzherbert  
 French, Joseph James  
 Fullerton, Arthur Henry  
 Furnivall, Henry Wallace  
 Galloway, John  
 Garbutt, Richard Henderson  
 Owen  
 Gibb, Charles Courtenay, B.A.

\* L.S.A. † M.R.C.S., L.R.C.P. ‡ M.B., B.S., § M.D.



Gibbons, William  
 Gibson, Charles Henry  
 Gilbertson, Albert James  
 Giles, James Alfred  
 Gill, George Brittan  
 Gisburn, Alfred Ernest  
 Glendinning, Bryden  
 Gofton, Edward  
 Gover, John Maxwell  
 Gowans, Francis Jollie  
 Graham, James Herries  
 Grant, John James  
 Greaves, Robert Bond \*  
 Guns, Daniel Richard  
 Hall, Robert Mills †  
 Halliday, John Rutherford  
 Hardwick, William Brown  
 Harrison, William John  
 Hartigan, James Andrew  
 Haver, Marshall  
 Haward, Walter  
 Hayward, William Curling, † ||  
 Hemmans, Lawrence Fielder  
 Hepplewhite, William George  
   Thomas  
 Heslop, James Willie  
 Hethcote, Douglas  
 Hindmarch, Robert Simpson  
 Hines, Arthur  
 Hodge, Albert Ernest  
 Holmes, Charles Thomas  
 Hope, Charles William Menelaus  
 Horan, Hubert Wolstenholme  
 Hunter, Thomas Charles  
 Hunter, William  
 Inman, Ernest  
 Jacobs, Maurice  
 James, Philip William † ||  
 Jelly, George Aubrey † || \*  
 Johnson, John Tyrer  
 Jupp, Ralph Tennyson  
 Kendal, Hugh Robert  
 Kendal, Lizzie Evelyn  
 Kendle, Ernest John Lambert, B.A.  
 Lambelle, Frederic William  
 Lease, Charles Robert  
 Lindsay, Beatrice

Macfadyen, John  
 Mack, George  
 Macleod, William §  
 Manson, Kenred  
 March, Frederick William  
 Mackie, David  
 Mankar, Babaji sarvottam ||  
 Markham, Henry Herbert  
 Markham, Leonard Montgomery  
 Martin, Ernest  
 Martin, John Henry  
 McConnell, James  
 McDowall, John Herbert  
 McElwee, John, B.A., ¶  
 McKay, John Thomas  
 Milligan, James  
 Mitchell, John Robert  
 Morland, Robert Atkinson  
 Morrison, James Frederick  
 Morrison, John Wilson Howard  
 Moxon, Harold Richard  
 Moyle, Reginald  
 Muirhead, James  
 Murray, Archibald Colin  
 Mûthûswamy-Anthony, Christie  
 Nevin, Robert William  
 Newton, Leonard Clark  
 Noel-Cox, Herbert Lovis  
 Norman, Ernest Edward  
 North-Smith, William Ernest  
 O'Halloran, Matthew  
 Parkin, Alfred  
 Parkinson, Thomas Smirk  
   Percival  
 Peacock, William Henry  
 Peart, Robert  
 Picton, Guy Brougham  
 Pirrie, Robert Reid  
 Pratt, Edward Frederick, ||  
 Proctor, Alfred Henry  
 Prosser, Thomasina Georgina  
 Ramsbottom, Frederick Charles  
 Raw, Stanley  
 Reah, Henry  
 Relton, Charles Duncan  
 Relton, Edward Alfred  
 Renton, Ralph Stuart

\* L.S.A.,   † M.R.C.S.   ‡ M.B., C.M., Edin.   || L.R.C.P.  
                  § M.B., C.M.   ¶ M.D.



Rhodes, Thomas Basil	Travers, Otho Boyle
Richard, Morgan *	Tredgold, Alfred Frank
Ritson, Frederick William	Turnbull, James Atkinson
Roberts, Norcliffe	Vaux, Ralph Thomas
Robertson, Constance Charlotte	Visser, Tys
Robertson, Monica Lucien Mary	Vogwell, Charles Augustus
Robson, Briton Smallman	Walker, Allan Mackie Garnock
Robson, William Greenwell	Walker, Norman Bryan
Routledge, Robert Lowis	Walker, William Longstaffe
Rowell, Thomas	Wight, ¶
Ruffmann, Hermann Heinrich	Waters, James Bowden
Russell, Thomas	Watson, Thomas Blandford
Sanders, Basil Stanley †	Waugh, John
Scorah, Ernest John	Weatherson, Robert Maxwell
Scott, Frederick Riddle	Webb, Bertha Margaret ‡
Seymour, William	Weir, David Henderson
Shaw, John Malcolm	Wetherell, Marmaduke Cordeux
Sidgwick, John Ernest	Widdas, Hugh
Simpson, Frank Tomisman	Wigfield, Frederick Percy
Smith, Andrew	Wilkinson, Auburn Lawrence
Smith, Gayton Warwick	Wilson, Frederick George
Snell, Douglas Montague Brooking	Wilson, Thomas
Spurgin, Basil Edward	Wilson, William Frank
Stainthorpe, William Waters	Wiltew, Thomas Nicholson
Stewart, Joseph Collingwood	Wolfe, Hermann
Stoker, Fred.	Wolfenden, Hugo
Stonehouse, Gordon	Wood, Alexander
Strachan, Frederick James	Woodger, William Hawkley
Suffield, Thomas John Samuel § *	Woolrabe, Frederick William* *
Sutherland, Wm. Dalziel	Worsley, Richard Le Geyt, *
Swainston, Eliot	Wylie, John Robert
Threlfall, Edward Norman	Yeates, Thomas † †
Tindle, William Lister	Younger, Robert

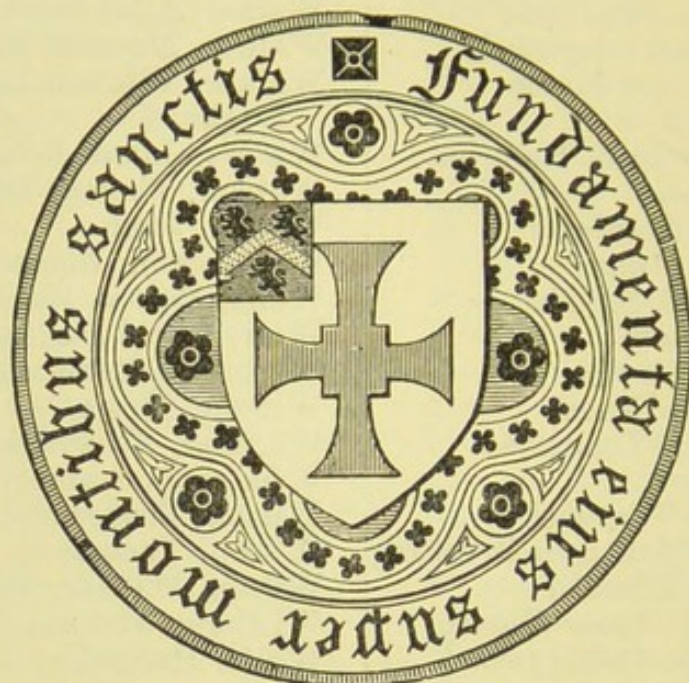
\* L.S.A. † L.R.C.P. and S.E. ‡ M.B., Lond. § L.R.C.P.I.  
 || L.R.C.P. and S.Ed. ¶ M.B., B.S. \*\* M.R.C.P., F.R.C.S., Ed.  
 †† M.B., C.M. Ed. § \* L.R.C.P.I. L.S.A.





# UNIVERSITY OF DURHAM

## FACULTY OF MEDICINE.



### REGULATIONS FOR DEGREES IN MEDICINE, SURGERY AND HYGIENE, AND DIPLOMA IN PUBLIC HEALTH.

THESE DEGREES ARE OPEN TO MEN AND WOMEN.

1. For the Degree of BACHELOR IN MEDICINE (M.B.), every Candidate must be not less than 21 years of age, and must produce Certificates of age, of Registration as a Student in Medicine in the books of the General Medical Council, of good moral conduct, and of attendance on such Lectures and Hospital Practice as the Warden and Senate require.

In addition to the Certificate of Registration, the Candidate must, before entering for his final examination in Medicine, Surgery, etc., produce a Certificate of having passed the Preliminary Examination in Arts for the Degrees in Medicine of the University of Durham, or a certificate of having passed one of the following Examinations:—



1. The First Public Examination for the Degree of B.Litt. of the University of Durham.
2. The First Public Examination in Arts of the University of Durham.
3. The University of Oxford Moderations.
4. The University of Cambridge Previous Examination with the extra subjects.
5. The University of Cambridge General Examination.
6. The Matriculation Examination of the University of London.

unless he shall have, previously to passing the Final Professional Examination, graduated in Arts at one of the following Universities :—Oxford, Cambridge, Durham, London, Victoria (Manchester), Edinburgh, Aberdeen, Glasgow, St. Andrews, Dublin, Queen's University, Royal (Ireland), Calcutta, Madras, Bombay, McGill College (Montreal), Sydney, and Melbourne.

The Preliminary Examination in Arts of the University of Durham is held thrice yearly, in January, March, and September.

Candidates must pass, at one and the same Examination, in four of the following subjects, of which two at least shall be languages, and are expected to show a satisfactory knowledge of the Grammar of the languages chosen :—

FOR SEPT., 1899—JAN., MARCH AND SEPT., 1900—AND JAN., 1901.

1. Greek. Xenophon, *Anabasis*, Book i.
2. Latin. Cicero, *De Amicitia*.\*
3. French. Souvestre, *Le Philosophe sous les toits*.\*
4. German. Hauff's *Die Karavane*.
5. Mechanics, Hydrostatics, and Pneumatics.
6. Euclid. Books iv. and vi.
7. English History. William I.—Henry II.
8. Logic.

FOR MARCH AND SEPTEMBER, 1901, AND JANUARY, 1902.

1. Greek. Xenophon, *Anabasis* Book ii.
2. Latin. Cicero, *De Senectute*.\*
3. French. Mérimée, *Colomba*.\*
4. German. Hauff, *Das Bild des Kaisers*.
5. Mechanics, Hydrostatics, and Pneumatics.
6. Euclid. Books iv. and vi.
7. English History. Richard I.—Richard II.
8. English Literature. Shakespere, *Merchant of Venice*.

\* Pitt Press Series Edition recommended.



The dates on which the Examinations will commence are, September 12th, 1899; January 2nd, March 13th, and September 11th, 1900.

Three papers are set on each day of the Examination; the hours of Examination are 9.45—11.45, 12—2, and 3.30—5.30.

The Examination is held in the University Lecture Rooms, Palace Green, Durham.

A time-table stating the order of the papers will be posted in the College of Medicine ten days before each Examination.

Every candidate must send to the Rev. Henry Ellershaw, M.A., Secretary of Examinations, The University, Durham, *one month before the day of Examination*, his name in full, the fee of one pound, and a statement of the four subjects (in the case of languages, mentioning Author and book, and in the case of history, the period) in which he wishes to be examined.

Candidates sending in their names after the time appointed have to pay an additional fee of five shillings. Candidates sending in their names after the list is printed have to pay an additional fee of £1. No name may be withdrawn after the list is printed. The list is printed at least a clear week before the examination begins.

Any candidate who shall have previously passed the Examination may be admitted at any future time for Examination in Greek only, on sending his name and fee of £1 to the Secretary of Examinations at the required date.

A specimen set of Examination papers will be found on pages 154 to 163.

For the curriculum required see pages 29 to 31. It is necessary that one of the five years of Professional Education should be spent in attendance at the College of Medicine, Newcastle-upon-Tyne. During the year so spent, the Candidate must attend at least two Courses of Lectures in the Winter Session, and two in the Summer Session, together *with the Class and Test Examinations* held in connection with those Classes, and must also attend Medical and



Surgical Hospital Practice and Clinical Lectures on Medicine and Surgery at the Infirmary. Candidates may fulfil this portion of the curriculum at any time before they present themselves for the Final Examination for the Degree. They are not required to reside at Durham. They may spend the other four years of the curriculum either at Newcastle-upon-Tyne, or at one or more of the Schools recognised by the Licensing Bodies named in Schedule (A) of the Medical Act, 1858.

The Lectures on Sanitary Chemistry and Physics and the Course on Practical Chemistry forming part of the curriculum for the Degree of Bachelor in Hygiene and for the Diploma in Public Health cannot be attended as Courses in the curriculum for the Degree of Bachelor in Medicine.

Candidates from Indian Universities must have passed a Matriculation Examination at one of the Indian Universities, and will have to spend one Academic year at the University of Durham College of Medicine, at Newcastle-upon-Tyne, before presenting themselves for the M.B. Degree Examination, in accordance with the regulations on pages 68 and 69 of the Calendar. If the Matriculation Examination at the Indian University did not embrace Latin, and Persian or Sanskrit, then it will be necessary for the Candidate, in addition, to produce evidence that he has passed in Latin, and one of these subjects, or in Greek, within *twelve months* of his presenting himself for the Examination for the Degree in Medicine.

## EXAMINATIONS.

For Candidates registered *before* January 1st, 1892 (*four years' curriculum*), there are *three* professional examinations, each being held twice yearly, viz. : in April and September.

The subjects for the First Examination are :—Elementary Anatomy ; Elementary Physiology ; Botany, with Medical Botany ; Chemistry with Chemical Physics.

The subjects for the Second Examination are :—Anatomy ; Physiology ; Materia Medica, Therapeutics, Pharmacology, and Pharmacy.



The subjects for the Final Examination are :—Medicine and Clinical Medicine ; Surgery and Clinical Surgery ; Midwifery and Diseases of Women and Children ; Pathology ; Medical Jurisprudence ; Public Health.

For Synopses of the subjects, see page 95 and following.

#### DATES OF EXAMINATIONS.

First Examination, September 4th, 1899 ; April 2nd, 1900 ; September 3rd, 1900.

Second Examination, September 11th, 1899 ; April 9th, 1900 ; September 10th, 1900.

Third (Final) Examination, September 18th, 1899 ; April 23rd, 1900 ; September 17th, 1900.

N.B.—The Examinations for Students under the *four years' curriculum* will be discontinued after September, 1901, subsequent to which date all Candidates for Degrees in Medicine and Surgery must pass the examinations required of Students under the five years' curriculum.

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For Candidates registered *after* January 1st, 1892 (*five years' curriculum*), there are *four* professional examinations, each being held twice yearly, viz. : in April and September.

The subjects for the First Examination are :—Elementary Anatomy ; Elementary Biology ; Chemistry ; Physics.

The subjects for the Second Examination are :—Anatomy ; Physiology ; Materia Medica, Therapeutics, Pharmacology, and Pharmacy.

The subjects for the Third Examination are :—Pathology ; Medical Jurisprudence ; Public Health, including Elementary Bacteriology.

The subjects for the Fourth (Final) Examination are :—Medicine, Clinical Medicine and Psychological Medicine ; Surgery and Clinical Surgery ; Midwifery and Diseases of Women and Children.



## DATES OF EXAMINATIONS :—

First Examination, September 4th, 1899 ; April 2nd, 1900 ; September 3rd, 1900.

Second Examination, September 11th, 1899 ; April 9th, 1900 ; September 10th, 1900.

Third Examination, September 18th, 1899 ; April 23rd, 1900 ; September 17th, 1900.

Fourth (Final) Examination, September 18th, 1899 ; April 23rd, 1900 ; September 17th, 1900.

The successful Candidates for the First, Second, Third, and Fourth Examinations for the Degree of Bachelor in Medicine will be arranged in three Classes—in the First and Second (Honours), according to merit, and in the Third (or Pass) in alphabetical order.

Only those Candidates entering for all subjects are eligible to compete for Honours at the First Examination.

Candidates who have completed part of their curriculum elsewhere, may pass their First, Second, and Third Examinations, previous to commencing their year of residence, at Newcastle-upon-Tyne, and previous to passing the Preliminary Examination in Arts of the University.

Candidates will be admitted to each of these examinations after duly certified attendance at a recognised Medical School on Courses of Instruction in the various subjects of the Examination, as set forth in the Schedules of Certificates issued by the University. These may be obtained on application to the Secretary of the University of Durham College of Medicine, Newcastle-upon-Tyne.

Candidates may enter for the Chemistry and Physics portion of the First M.B. Examination as soon as they have registered as Medical Students, provided they show Certificates of having attended the necessary courses of instruction at a recognised school or schools. Further, candidates may enter for the Anatomy and Biology half, or for the whole of the First M.B. Examination, after having attended one Winter Session at a recognised Medical School, provided they show the necessary Certificates of Instruction.



The instruction received *before* Registration will not count as any part of the five years' curriculum.

The following institutions are recognised by the University of Durham for the teaching of Chemistry, Physics, and Biology :—

- (a) The recognised Medical Schools in Great Britain.
- (b) The Durham College of Science, Newcastle-upon-Tyne ; and the other University Colleges in the kingdom.

The First M.B. Examination may be passed in two portions, viz. :—

- (a) Elementary Anatomy and Biology.
- (b) Chemistry and Physics.

Each Examination must be passed before the next can be proceeded with.

\* A Candidate who has passed the First Examination of the Conjoint Board in England of the Royal College of Physicians of London and the Royal College of Surgeons of England, will be exempt from the subject of Biology in the First Examination of the University of Durham.

A Candidate who has passed the First and Second Examinations of the University will be exempt from the First and Second Examinations of the Conjoint Board in England.

\* Candidates who hold a Qualification from a recognised Licensing Board in the United Kingdom at the date of entry for the First Examination for the Degrees in Medicine, are in every case required to pass in Chemistry and Physics ; but they are exempt from Examination in Elementary Anatomy and Biology. All Candidates for the First Examination for the Degrees in Medicine, whether exempt from a portion of it or not, are required to pay the full fee—five pounds.

\* These regulations will not apply to Candidates registering as Medical Students on or after October 1st, 1896. Such Candidates must pass in *all* the subjects of the First Examination of the University of Durham.



The Final Examination for the title of Associate in Science of the University of Durham, will be accepted *pro tanto* for the first Examination for the Degrees of Medicine and Surgery.

All Candidates whether qualified or unqualified, who entered at the University of Durham College of Medicine on or after May 1st, 1885, come under the Regulations hereinbefore enumerated as in force for the Degrees in Medicine of the University of Durham.

2. For the Degree of DOCTOR IN MEDICINE (M.D.) Candidates must be not less than 24 years of age, and must satisfy the University as to their knowledge of Greek. In case they shall not have passed in this subject at the Preliminary Examination in Arts for the M.B. Degree, they must present themselves at Durham for examination in it, at one of the Ordinary Examinations held for this purpose, before they can proceed to the higher degree of M.D. They must also have obtained the Degree of Bachelor in Medicine of the University of Durham, and must have been engaged for at least two years subsequent to the date of acquirement of the Degree of Bachelor in Medicine in attendance on the Practice of a recognised Hospital, or in the Military or Naval Services, or in Medical and Surgical Practice.

Each Candidate must prepare an Essay, based on original research or observation, on some medical subject selected by himself and approved of by the Professor of Medicine, and must pass an Examination thereon, and must be prepared to answer questions on the other subjects of his curriculum so far as they are related to the subject of the Essay.

A Gold Medal will be awarded every academical year to the Candidate who presents the best Essay, provided that the Essay is judged to be of sufficient merit.

The successful Candidate will be permitted to publish his Essay.

Candidates must use for their Essays, thin, strong, cream-wove half-sheet foolscap, size 13 ins. by 8 ins., with a margin on the left hand side one inch and a half in breadth, and the Essay must be type-written on one side of the paper only. The Essay should not exceed thirty pages in length.



The Essays must be forwarded to the Professor of Medicine one month before the date of Examination, and will be retained by the Faculty of Medicine.

If the Essay of any Candidate is not of sufficient merit, notice of the fact will be sent to the Candidate, who will not be required to attend for Examination.

Arrangements have been made by which Bachelors in Medicine resident abroad, and wishing to proceed to the M.D. Degree may do so under special regulations, and may have the degree conferred on them *in absentia*. Particulars of these regulations may be had on application to the Secretary, College of Medicine, Newcastle-upon-Tyne.

3. For the Degree of BACHELOR IN SURGERY (B.S.) every Candidate must have passed the Examination for the Degree of Bachelor in Medicine of the University of Durham, and must have attended one Course of Lectures on Operative Surgery, and one Course on Regional Anatomy.

Candidates will be required to perform operations on the dead body, and to give proof of practical knowledge of the use of surgical instruments and appliances.

4. For the Degree of MASTER IN SURGERY (M.S.) Candidates must not be less than 24 years of age, and must satisfy the University as to their knowledge of Greek. In case they shall not have passed in this subject at the Preliminary Examination in Arts for the M.B. Degree, they must present themselves at Durham for examination in it, at one of the Ordinary Examinations held for this purpose, before they can proceed to the higher Degree of M.S. They must also have obtained the Degree of Bachelor in Surgery of the University of Durham, and must have been engaged for at least two years subsequent to the date of acquirement of the Degree of Bachelor in Surgery in attendance on the practice of a recognised Hospital, or in the Naval or Military Services, or in Medical or Surgical Practice.

The Subjects of Examination are :—Principles and Practice of Surgery ; Surgical Pathology ; Surgical Anatomy ; Surgical Operations ; Clinical Surgery.



The Examinations for the Degrees of DOCTOR IN MEDICINE and BACHELOR and MASTER IN SURGERY take place at the same time as the Final Examination for the Degree of Bachelor in Medicine.

The Examinations for the Degrees above-named, and for Degrees in Hygiene and the Diploma in Public Health, are conducted at the College of Medicine, Northumberland Road, and in the Royal Infirmary at Newcastle-upon-Tyne, and City Hospital for Infectious Diseases. Candidates are examined (1) by printed papers of questions, (2) practically, and (3) *vivâ voce*.

Every Candidate who intends to present himself for any of the above-named Professional Examinations must give at least 28 days' notice\* to the Secretary of the College, and must, at the same time, send the fee and the necessary certificates. If after payment of the fee, a Candidate withdraws his name, or fails to present himself at the Examination, or fails to pass it, he will not receive back the fee, but will be allowed to enter for one subsequent Examination of the same kind without the payment of any additional fee.

In the event of failure at any Examination (except in the case of the Examinations for the Degrees of Doctor in Medicine, Master in Surgery, Bachelor in Hygiene, Doctor in Hygiene, and for the Diploma in Public Health) the Candidate failing will be required to attend a Course of Instruction at a recognised Medical School in the subject or subjects in which he has failed before he can again present himself for Examination.

In the case of Students of this University who fail to pass the First Examination for the Degree of Bachelor in Medicine at the end of their First Year of Study, no fee will be required for this extra Course. This Regulation applies to all Students, whether they have paid the Composition Fee or otherwise, who entered for the First Examination for the Degrees at or subsequently to the Examination held in September, 1887.

\* This rule will be strictly enforced.



Blank forms of Certificates, to be filled in certifying attendance on these extra Courses, may be obtained from the Secretary, College of Medicine, Newcastle-upon-Tyne, to whom they must be re-forwarded, properly filled in, at least 28 days before the date of re-Examination.

Candidates referred at the Final Examination for the Degrees are required to show evidence of having attended at least half a full Course in the subject or subjects in which they have been referred.

At the University of Durham College of Medicine the fee to be paid for each extra Course or half Course, attended by a referred Candidate, is 2 guineas.

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THE DEGREE OF DOCTOR IN MEDICINE, FOR  
MEDICAL PRACTITIONERS OF FIFTEEN  
YEARS' STANDING, WITHOUT RESIDENCE.

The Warden and Senate of the University of Durham, with the view of affording to Practitioners of fifteen years' standing an opportunity of obtaining the degree of Doctor in Medicine, have instituted a Special Examination, under the following Regulations :—

1. That the Candidate shall be registered by the General Council of Medical Education and Registration of the United Kingdom.
2. That the Candidate shall have been in the active practice of his Profession for fifteen years as a Qualified Practitioner.
3. That the Candidate shall not be under 40 years of age, and shall be required to produce evidence to this effect.
4. That the Candidate shall produce a certificate of moral character from three registered Members of the Medical Profession.
5. That if the Candidate shall not have passed previously to his Professional Examination (in virtue of which he has been placed on the Register) an Examination in Arts, he shall be required to pass an Examination in Classics and Mathematics.



The Subjects for this Examination shall be as follows :—

1. An English Essay. (A short Essay on some subject to be specified at the time of the Examination.)
2. Arithmetic.
3. Euclid—Books i. and ii.
4. Latin—Translation from Virgil, *Æneid*, Books i. and ii., with Grammatical Questions.
- 5 One of the following Subjects :—

- i. Greek—Translation from Xenophon's *Memorabilia*, Books i. and ii., with Grammatical Questions.
- ii. French—Translations from Voltaire's *Charles XII.*, with Grammatical Questions.
- iii. German—Translation from Goethe's *Dichtung und Wahrheit*, Book i., with Grammatical Questions.
- iv. Elements of Mechanics, Pneumatics, and Hydrostatics.
- v. Some Treatise on Moral, Political, or Metaphysical Philosophy.

6. That if the Candidate shall have passed, previously to his Professional Examination (in virtue of which he has been placed on the Register), a Preliminary Examination, he shall be required to translate into English, passages in any of the parts specified below of any one of the Latin Authors mentioned :—

Cæsar—De Bello Gallico, first three books.

Virgil—First three books of the *Æneid*.

Celsus—First three books.

The Candidate may choose for himself any one of the three above-named authors.

7. That the Candidate shall be required to pass an Examination in the following Subjects :—



- i. Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics.
- ii. Principles and Practice of Surgery.
- iii. Midwifery and Diseases of Women and Children.
- iv. Pathology—Medical and Surgical.
- v. Anatomy—Medical and Surgical.
- vi. Medical Jurisprudence and Toxicology.

The Examination shall be conducted by printed papers of questions, clinically in the wards of the Royal Infirmary, Newcastle, and by *viva voce* Examination.

8. Natives of India will be placed on the same footing as Natives of Great Britain, with the following variations:—Candidates who are 40 years of age, and have been engaged in actual practice for fifteen years, can proceed to the M.D. Degree Examination for Practitioners in accordance with the regulations on page 76 of the Calendar, provided they bring evidence from one of the Indian Universities that they have passed within one year of their presenting themselves for the Examination for the Practitioners' Degree at the University of Durham, an Examination in Latin, and in addition, either Greek, Persian, or Sanskrit.

9. That the fee shall be 50 guineas.

10. That if the Candidate shall fail to satisfy the Examiners, the sum of 20 guineas shall be retained; but that if he shall again offer himself for the Examination, the sum of 40 guineas only shall then be required.

The Classical portion of the Examination may be taken separately from the Medical portion. For the Classical portion the fee is 10 guineas, which is deducted subsequently from the full fee of 50 guineas.

If the Candidate fail to satisfy the Examiners in the Arts portion of the Examination, a fee of 5 guineas will be required for every subsequent Examination.



Examinations, in accordance with the above Regulations, will be commenced on September 18th, 1899, and again on April 23rd, 1900, and again on September 17th, 1900, at the College of Medicine, Northumberland Road, Newcastle-upon-Tyne.

Gentlemen intending to present themselves as Candidates are required to forward their names to Professor HOWDEN, M.A., M.B., Secretary of the University of Durham College of Medicine, Newcastle-upon-Tyne, at least 28 days before the commencement of the Examination, together with the fee and the before-mentioned certificates.

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## DEGREE OF BACHELOR IN HYGIENE (B.H.Y.).

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### REGULATIONS.

#### I.—EDUCATION.

1. The Candidate shall be a Registered Medical Practitioner and a Graduate in Medicine of a recognised University.

2. He shall not be less than 22 years of age.

3. A period of at least twelve months shall have elapsed after the date when the Candidate obtained his first registrable qualification in Medicine, Surgery, and Midwifery, before he presents himself for examination.

4. He shall have spent six months of professional study subsequent to the attainment of a first registrable qualification in Medicine, Surgery, and Midwifery, in attendance at Newcastle-upon-Tyne, in the following manner:—

#### UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

(a) Course of Lectures on Public Health.

(b) 'Three Months' Course of Lectures on Comparative Pathology with practical work in the Bacteriological Laboratory.



*Out-door Sanitary Work.*

- (c) Six Months' practical study of out-door Sanitary Work under the Medical Officer of Health, Newcastle-upon-Tyne.

*City Hospital for Infectious Diseases, Newcastle-upon-Tyne.*

- (d) Three Months' attendance on the Clinical Practice and Instruction.

Regulation (a) to be omitted in the case of a Candidate who has already attended the course before obtaining a registrable qualification.

Regulation (c) to be omitted in the case of a Practitioner who has himself held appointment as a Medical Officer of Health under conditions not requiring the possession of a Sanitary Diploma under the Local Government (England and Wales) Act, 1888.

## DURHAM COLLEGE OF SCIENCE.

- (e) Course of Lectures on Sanitary Chemistry and Physics.  
 (f) Three Months' practical Instruction in the Chemical Laboratory. This course must not be concurrent with the three months' course of Lectures on Comparative Pathology with practical work in the Bacteriological Laboratory.

BOOKS RECOMMENDED.—Manual of Public Health, by Professor A. Wynter Blyth. Hygiene and Public Health, by Dr. Louis C. Parkes. Handbook of Hygiene, by Dr. Geo. Wilson. Comparative Pathology: Manual of Bacteriology, by Professor Crookshank; Manual of Bacteriology, by Muir and Ritchie; or, Practical Bacteriology, by Kanthack and Drysdale. Parasites of Man, by Leuckart. Sanitary Chemistry and Physics: Sanitary Examination of Water, Air, and Food, by Dr. C. B. Fox. Analysis of Water and Food, by Professor Wanklyn. Air, Water, and Disinfectants, by Mr. Noel Hartley. Dwelling Houses, by Professor Corfield. Meat Inspection, by Professor Walley. Aitken's Practice of Physic: Medical Geography. Law: The Statutes and Bye-laws named under the heading "Examination."—Section (c) on page 81.



## II.—EXAMINATION.

The Candidate shall be required to pass an Examination in the following subjects:—

- (a) **SANITARY CHEMISTRY.**—The examination of Air ; detection of noxious gases and atmospheric impurities.

Water for sanitary purposes ; detection of metals in water ; the action of water on metals.

Milk and Food.

Detection of Poisons in Articles of Dress and Decoration.

- (b) **PHYSICS.**—Hydrodynamics, Pneumatics, and Hydraulics, as applied to Hygiene.

Light ; Propagation of Light ; Reflection and Refraction ; Photometry.

Heat ; Thermometers ; Laws of Heat in relation to Hygiene.

Principles of Hygrometry and Hygrometers.

- (c) **SANITARY LEGISLATION.**—Knowledge of the following Statutes and Bye-Laws, viz.:—The Public Health Act, 1875 ; Rivers Pollution Prevention Act, 1876 ; The Public Health (Water) Act, 1878 ; The Infectious Diseases (Notification) Act, 1889 ; The Local Government Act, 1888 ; The Infectious Diseases (Prevention) Act, 1890 ; The Housing of the Working Classes Act, 1890 ; The Public Health Acts (Amendment) Act, 1890 ; The Model Bye-Laws of the Local Government Board relating to Cleansing, the Prevention of Nuisances, New Streets and Buildings, Slaughter Houses, Common Lodging Houses, Houses Let in Lodgings, Offensive Trades.

Most of the above-mentioned *Statutes* will be found in KNIGHT & Co.'s "Public Health Acts" (latest edition), and the *Bye-Laws* in the work under that title, by the same publishers.



- (*d*) COMPARATIVE PATHOLOGY, ETC.—Knowledge of the Comparative Pathology, Methods of Propagation, and Prevention of Microbic and Parasitic Diseases intertransmissible between Man and the lower Animals; Morphology of Microbes and Animal Parasites; Methods of Microscopical Examination and Artificial Cultivation of Micro-organisms. The Bacteriological Examination of Water, Air, and Earth; The Special Characteristics, Life-history, Properties, and Natural and Artificial Modes of Inoculation of Pathogenic Micro-organisms and Animal Parasites.
- (*e*) VITAL STATISTICS.—Rates of Birth, Death, and Marriage; Methods of Calculation, Classification, and Tabulation of Returns of Sickness and Mortality; Data required and Conclusions deducible therefrom.
- (*f*) NOSOLOGY.—Definition, Nomenclature, and Classification of Diseases.
- (*g*) METEOROLOGY, CLIMATOLOGY, AND GEOGRAPHICAL DISTRIBUTION OF HEALTH AND DISEASE OVER THE GLOBE, AND IN DIFFERENT URBAN AND RURAL DISTRICTS OF THE UNITED KINGDOM.
- (*h*) SANITARY MEDICINE, in relation to the Origin, Propagation, Pathology, and Prevention of Epidemic, Endemic, Epizootic, and other Communicable Diseases; Diseases attributable to Heat, Cold, or Dampness, Insufficiency or Impurity of Air, Food, or Drink; Parasitic and other Diseases affecting the Food and Drink of Man; Diseases due to Habitation, in Cities, Towns, Villages, and separate Houses; Occupation and Trade Operations in relation to the Health of the Workers; Overwork, Intemperance, Heredity; Preventive Measures, Vaccination, Isolation, Disinfection; the Regulation of Noxious and Offensive Manufactures and Trades; the Removal of Nuisances.



- (i) PRACTICAL HYGIENE in reference to Meteorological Apparatus, Sanitary Appliances, the Site, Materials, Construction, Capacity, Lighting, Ventilation, Warming, Dryness, Water Supply, Drainage, and Refuse Disposal, of Houses, Schools, Hospitals, Artizans' Dwellings, Workshops and Work-places, and other buildings of Public or Private Resort; the Construction of Dairies, Abattoirs, and Disinfecting Stations; Action with respect to Nuisances, and Outbreaks of Disease; The Examination of Butchers' Meat and other Food; The Preparation of Sanitary Reports, and other Duties of a Medical Officer of Health.

The Examination will be conducted by written Papers, and practical and *vivâ voce* examination, and will be commenced on April 2nd, 1900.

The Candidate shall also be required—

- (a) To pass an examination on medical clinical cases at the City Hospital for Infectious Diseases, or elsewhere.
- (b) To draw up outlines for Annual or other reports of a Medical Officer of Health.
- (c) To report upon the condition of some actual locality.
- (d) To analyse liquids, gases, and specimens of food.
- (e) To describe the construction and use of Instruments employed in Meteorology, Hygienic Apparatus, and Sanitary Appliances.
- (f) To examine with the Microscope submitted specimens.
- (g) To describe submitted specimens of Diseased Organs and Tissues (Human and other).
- (h) To show a practical acquaintance with the usual methods of Bacteriological investigation.
- (i) To inspect and describe specimens of meat.



Every Candidate wishing to present himself for Examination for the Degree of Bachelor in Hygiene must give at least *twenty-eight days' notice* to Professor Howden, Secretary of the College, and must, at the same time, send the Examination fee and the necessary Certificates.

The Fee for the Examination for the Degree of B.Hy. is Ten Guineas, and for the Degree, Six Guineas.

Holders of the Licence in Sanitary Science of the University of Durham, prior to January, 1892, who are Graduates in Medicine of the University of Durham, are entitled to admission to the Examination for the Degree of Bachelor in Hygiene without residence.

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## REGULATIONS FOR THE DEGREE OF DOCTOR IN HYGIENE (D.HY.).

1. The Candidate shall be a Bachelor in Hygiene.
2. The Candidate shall have been engaged for two years subsequent to the date of his acquirement of the Degree of Bachelor in Hygiene, in practice, as a Medical Officer of Health.
3. The Candidate shall write an essay upon some practical Hygienic subject, selected by himself and approved by the Lecturer on Public Health, and shall be examined thereon, and upon questions relative to the subject of the Essay.

Candidates, for their Essays, must use ruled hand made foolscap paper (16 lbs. per ream weight) with a margin on the left hand side one inch and a half in breadth, and must write on one side of the paper only. The Essay should not exceed twenty pages.

The Essays must be forwarded to the Lecturer on Public Health one month before the date of the Examination, and will be retained by the Faculty of Medicine. If the Essay of any Candidate is not of sufficient merit, notice of the fact will be sent to the Candidate, who will not be required to attend for examination.

The Fee for the Examination for the Degree of D.Hy. is £5 and for the Degree £6 6s.



## REGULATIONS FOR THE DIPLOMA IN PUBLIC HEALTH (D.P.H.).

The Regulations for Education and Examination for the Diploma in Public Health (D.P.H.) are the same as those for the Degree of Bachelor in Hygiene on pages 79 to 84, with the following exceptions, viz. :—

1. That the Candidate is not required to be a Graduate in Medicine of a recognised University.
2. The course of study need not be spent at Newcastle-upon-Tyne.

The Fee for the Examination and Diploma is Ten Guineas.

### REGULATIONS FOR THE DIPLOMA IN PUBLIC HEALTH, FOR MEDICAL PRACTITIONERS, REGISTERED, OR ENTITLED TO BE REGISTERED, ON OR BEFORE JANUARY 1ST, 1890.

1. The Candidate shall be a Medical Practitioner, registered, or entitled to be Registered, on or before January 1st, 1890.
2. The Candidate shall be required to pass the same Examination as that for the ordinary Diploma in Public Health, on pages 81 to 84.
3. Every Candidate wishing to present himself for the Examination must give, at least, *twenty-eight days' notice* to Professor Howden, Secretary of the College, and must, at the same time, send the Examination Fee and the necessary Certificates.
4. The Examination for the Diploma in Public Health will be commenced on April 2nd, 1900.
5. The Fee for the Examination and Diploma is Ten Guineas.



## DIRECTIONS FOR CANDIDATES.

Academical costume to be worn at all the Examinations, except the Practical, and except in the case of Practitioners of fifteen years' standing. Strict punctuality is essential. Candidates who fail to appear when they are called will not be afterwards received, and they will, consequently, lose the marks of the Examination they have not attended.

Any Candidate copying or communicating with others during an Examination will be dismissed, and not allowed to present himself again for Examination.

Particular attention should be paid to the rules respecting numbers, as it is essential that every paper handed in should be properly numbered.

Each Candidate at the commencement of the Examination will be placed at a desk on which his number will be fixed. He should at once gum one of the printed numbers given him on to the card provided, and write his name below the number. The card is then to be enclosed in an envelope and sealed, another of the coloured numbers being affixed to the outside of the envelope.

The separate sheets of paper, on which the answers are written, are to be fixed together by a clip, which should be inserted at the left hand top corner. One of the coloured numbers is to be placed at the right hand top corner of each set of answers. At the end of each Written Examination the answers are to be handed in to the Superintendent of the Examination. The sheets are not to be folded.

Candidates are forbidden to make any enquiry of an Examiner as to the result of an Examination. The Superintendent is the only person authorised to give information upon the subject of the Examination.





# PROGRAMMES OF EXAMINATIONS.

## EXAMINATIONS FOR THE DEGREE OF BACHELOR IN MEDICINE.

(A) For Candidates registered *before* Jannary 1st, 1892 (4 years curriculum).

### FIRST EXAMINATION.

MONDAY ...	{ Sept. 4, 1899, and Apr. 2, 1900, }	{ 9.45 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m. }	{ Elementary Anatomy. Elementary Physiology. Chemistry, with Chemical Physics. Botany, with Medical Botany.
TUESDAY	{ Sept. 5, 1899, and Apr. 3, 1900, }	{ 10 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m. }	{ Chemistry, with Chemical Physics. Botany, with Medical Botany.
WEDNES- DAY	{ Sept. 6, 1899, and Apr. 4, 1900, }	{ 10 a.m. ... }	{ <i>Practical</i> Chemistry.
FRIDAY ...	{ Sept. 8, 1899, and Apr. 6, 1900, }	{ 9.30 a.m. ... }	{ <i>Vivâ voce</i> in all the subjects of the Ex- amination.

### SECOND EXAMINATION.

MONDAY ...	{ Sept. 11, 1899, and Apr. 9, 1900, }	{ 9.45 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m. }	Anatomy. Physiology.
TUESDAY	{ Sept. 12, 1899, and Apr. 10, 1900, }	{ 10 a.m. to 1 p.m. ... }	Materia Medica.
THURSDAY	Sept. 14, 1899, and WEDNESDAY Apr. 11, 1900, }	{ 9.30 a.m. ... }	{ <i>Practical</i> and <i>vivâ voce</i> Ex- amination in all the sub- jects of the Examination.
FRIDAY ...	Sept. 15, 1899, and THURSDAY Apr. 12, 1900, }	{ 9.30 a.m. ... }	{ <i>Practical</i> and <i>vivâ voce</i> Ex- amination in all the sub- jects of the Examination.



## THIRD (FINAL) EXAMINATION.

MONDAY...	{ Sept. 18, 1899, and Apr. 23, 1900,	{ 9.45 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m.	{ Principles and Practice of Medicine. Principles and Practice of Surgery — 5 questions. Surgical Anatomy — 1 question.
TUESDAY	{ Sept. 19, 1899, and Apr. 24, 1900,	{ 10 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m.	{ Medical Jurisprudence, Public Health Pathology. Midwifery and Diseases of Women and Children.
WEDNESDAY and THURSDAY	{ Sept. 20 and 21, 1899, and April 25 and 26, 1900,	{ 9.30 a.m. ...	{ <i>Clinical</i> Examination in Medicine and Surgery.
FRIDAY ...	{ Sept. 22, 1899, and Apr. 27, 1900,	{ 9 a.m. ....	{ <i>Vivâ voce</i> Examination in all the subjects.

(B) For Candidates registered on or *after* January 1st, 1892  
(5 years' curriculum).

## FIRST EXAMINATION.

MONDAY...	{ Sept. 4, 1899, and Apr. 2, 1900,	{ 9.45 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m.	{ Elementary Anatomy. Elementary Biology.
TUESDAY	{ Sept. 5, 1899, and Apr. 3, 1900,	{ 10 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m.	{ Chemistry. Physics.
WEDNESDAY and THURSDAY	{ Sept. 6 and 7, 1899, and April 4 and 5, 1900,	{ 10 a.m. and 2.30 p.m.	{ <i>Practical</i> Chemistry. <i>Practical</i> Physics. <i>Practical</i> Biology.
FRIDAY ...	{ Sept. 8, 1899, and Apr. 6, 1900,	{ 9.30 a.m. ...	{ <i>Vivâ voce</i> in all the subjects of the Examination.



## SECOND EXAMINATION.

MONDAY ...	{ Sept. 11, 1899, and Apr. 9, 1900, }	{ 9.45 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m. }	Anatomy. Physiology.
TUESDAY ...	{ Sept. 12, 1899, and Apr. 10, 1900, }	{ 10 a.m. to 1 p.m. }	{ Materia Medica.
THURSDAY	Sept. 14, 1899, and	{ 9.30 a.m. ... }	{ Practical and vivâ voce Examination in Anatomy and Physiology. Vivâ voce in Materia Medica.
WEDNESDAY	Apr. 11, 1900, }		
FRIDAY	Sept. 15, 1899, and	{ 9.30 a.m. ... }	{ Practical and vivâ voce Examination in Anatomy and Physiology (continued). Vivâ voce Examination in Materia Medica (continued).
THURSDAY	Apr. 12, 1900, }		

## THIRD EXAMINATION.

MONDAY ...	{ Sept. 18, 1899, and Apr. 23, 1900, }	{ 9.45 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m. }	Pathology. Medical Jurisprudence.
TUESDAY	{ Sept. 19, 1899, and Apr. 24, 1900, }	{ 10 a.m. to 1 p.m. }	Public Health.
THURSDAY	{ Sept. 21, 1899, and Apr. 26, 1900, }	{ 2.30 p.m. ... }	{ Vivâ voce Examination in all three subjects.



## FOURTH (FINAL) EXAMINATION.

MONDAY ...	{	Sept. 18, 1899,	}	9.45 a.m. to 1 p.m. ...	{	Principles and Practice of Medicine and Psychological Medicine.
		and				
		Apr. 23, 1900,		2.30 p.m. to 5.30 p.m.	{	Principles and Practice of Surgery — 5 questions.
					{	Surgical Anatomy—1 question.
TUESDAY	{	Sept. 19, 1899,	}	10 a.m. to 1 p.m. ...	{	Clinical and <i>Vivâ voce</i> Examination in Psychological Medicine.
		and				
		Apr. 24, 1900,		2.30 p.m. to 5.30 p.m.	{	Midwifery and Diseases of Women and Children.
WEDNESDAY and THURSDAY	{	Sept. 20 & 21, 1899,	and	Apr. 25 & 26, 1900,	{	Clinical Examination in Medicine and Surgery.
				9.30 a.m.	...	
FRIDAY ...	{	Sept. 22, 1899,	}	9 a.m. ...	{	<i>Vivâ voce</i> Examination in all subjects.
		and				
		Apr. 27, 1900,				



EXAMINATION FOR THE DEGREE OF DOCTOR IN  
MEDICINE FOR PRACTITIONERS OF FIFTEEN  
YEARS' STANDING.

MONDAY ...	{ Sept. 18, 1899, and Apr. 23, 1900,	{ 9.45 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m.	{ Medicine and Allied Sciences. Surgery and the Allied Sciences.
TUESDAY	{ Sept. 19, 1899, and Apr. 24, 1900,	{ 10 a.m. to 1 p.m. ... 2.30 p.m. to 5.30 p.m.	{ Arts Examination. Midwifery, Medical Juris- prudence, Pathology.
WEDNES- DAY and THURSDAY	{ Sept. 20 & 21, 1899, and Apr. 25 & 26, 1900,	{ 9.30 a.m. ...	{ Clinical Ex- amination in Medicine and Surgery.
FRIDAY ...	{ Sept. 22, 1899, and Apr. 27, 1900,	{ 9 a.m. ...	{ Vivâ voce Ex- amination in all subjects.

EXAMINATION FOR THE DEGREE OF DOCTOR IN  
MEDICINE.

WEDNES- DAY ...	{ Sept. 20, 1899, and Apr. 25, 1900,	{ 2 p.m. ...	{ Vivâ voce on Essays—in the Council Room, College of Me- dicine, New- castle-upon- Tyne.
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EXAMINATION FOR DEGREE OF BACHELOR IN  
SURGERY.

WEDNES- DAY ...	{ Sept. 20, 1899, and Apr. 25, 1900,	{ 2 p.m. ...	{ Practical Ex- amination in Operations on the dead sub- ject, and on the use of In- struments.
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# EXAMINATION FOR THE DEGREE OF MASTER IN SURGERY.

MONDAY ...	{ Sept. 18, 1899, and Apr. 23, 1900,	9.45 a.m. to 1 p.m.	{ Principles and Practice of Surgery, 6 questions, of which 4 only must be an- swered.
		2.30 to 5.30 p.m. ...	{ Surgical Ana- tomy, 3 ques- tions; Surgical Pathology, 3 questions; of which 2 only in each divi- sion must be answered.
WEDNES- DAY ...	{ Sept. 20, 1899, and Apr. 25, 1900,	9.30 a.m. ...	{ Clinical Sur- gery, not less than 3 cases ; Surgical In- struments and Appli- ances.
		2 p.m. ...	{ Surgical Opera- tions.
FRIDAY ...	{ Sept. 22, 1899, and Apr. 27, 1900,	9 a.m. ...	{ <i>Vivâ voce</i> Ex- amination.

# EXAMINATION FOR THE DEGREE OF DOCTOR IN HYGIENE.

TUESDAY... Apr. 3, 1900, 10 a.m. ...	{ <i>Vivâ voce</i> on essays —in the Council Room, College of Medicine, New- castle-on-Tyne.
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EXAMINATION FOR THE DEGREE OF BACHELOR IN  
HYGIENE, AND FOR THE DIPLOMA IN PUBLIC HEALTH.

MONDAY	April 2, 1900,	9:45 a.m. to 1 p.m.	To report upon the conditions of some specified locality. To draw up outlines for annual or other reports of a Medical Officer of Health.
		2:30 to 5:30 p.m.	
TUESDAY	April 3, 1900,	10 a.m. to 1 p.m.	PAPER No. 1. Sanitary Legislation 1 Nosology ... 1 Sanitary Medicine 4
		2:30 to 5:30 p.m.	PAPER No. 2. Comparative Pathology. Six Questions.
WEDNESDAY	April 4, 1900,	10 a.m. to 1 p.m.	PAPER No. 3. Sanitary Chemistry and Physics. Six Questions.
		2:30 to 5:30 p.m.	Practical Chemistry. Analyses.—Liquids, Gases, and Specimens of Food.
THURSDAY	April 5, 1900,	9:30 a.m.	CLINICAL EXAMINATION. At the City Hospital for Infectious Diseases, or elsewhere.
		2:30 to 5:30 p.m.	PAPER No. 4. Vital Statistics ... 1 Climatology, Meteorology, etc. 1 Practical Hygiene ... 4
SATURDAY	April 7, 1900,	9:30 a.m.	<i>Vivá voce.</i> Description of Diseased Organs. Microscopical Examination.



## FEES FOR THE EXAMINATIONS, DEGREES, AND DIPLOMA.

	£	s.	d.
For Registration Examination ... ..	1	0	0
„ Extraordinary Registration Examination ... ..	2	0	0
„ Preliminary Arts Examination for Degrees ... ..	1	0	0
„ First Examination for Degree of Bachelor in Medi- cine ... ..	5	0	0
„ Second Examination for Degree of Bachelor in Medicine ... ..	5	0	0
„ Third Examination for Degree of Bachelor in Medi- cine ... ..	5	0	0
„ *Final Examination for Degree of Bachelor in Medi- cine ... ..	10	0	0
„ the Examination for the Degree of M.D. ... ..	5	0	0
„ the Examination for the Degree of B.S. ... ..	5	0	0
„ the Examination for the Degree of M.S. ... ..	5	0	0
„ Examination for the Degree of Bachelor in Hygiene	10	10	0
„ Examination for the Degree of Doctor in Hygiene ...	5	0	0
„ Examination for and for the Diploma in Public Health	10	10	0
„ the Examination for and for the Degree of Doctor in Medicine, for Practitioners of fifteen years' standing... ..	52	10	0
„ a Degree of Bachelor in Medicine ... ..	6	6	0
„ a Degree of Doctor in Medicine ... ..	6	6	0
†, „ a Degree of Bachelor in Surgery ... ..	6	6	0
„ a Degree of Master in Surgery ... ..	6	6	0
„ a Degree of Bachelor in Hygiene ... ..	6	6	0
„ a Degree of Doctor in Hygiene... ..	6	6	0

\* The Fee of Ten Pounds for the Final Examinations will be required from Candidates who have entered at the University of Durham College of Medicine, Newcastle-upon-Tyne, on or after May 1st, 1885, and from Candidates from other Schools of Medicine who commenced their professional studies on or after October 1st, 1883.

† These Fees are paid to the Senior Proctor of the University of Durham on the morning of Convocation, if the Candidate is successful in passing the examination.

The Examinations for Degrees are held at Newcastle-upon-Tyne, and the Degrees conferred in Convocation at the University of Durham, or at Newcastle-upon-Tyne.



## SYNOPSIS

*Of the Subjects included in the Examinations for the Degrees  
in Medicine of the University of Durham.*

FIRST EXAMINATION FOR THE DEGREE OF  
BACHELOR IN MEDICINE.

## NEW REGULATIONS.

## (1) Elementary Anatomy—

Bones, Joints, Ligaments, and Muscles of the Body generally.

## (2) Chemistry—

General characteristics of Chemical action. Conditions under which Chemical Changes take place. Difference between Mechanical Mixtures and Chemical Compounds. Difference between Elementary and Compound Substances. Explanation of Chemical Symbols, Formulæ, and Equations. Calculation of Quantities of Materials necessary to produce or resulting from given Chemical Reactions. Conversion from Volume into Weight and *vice versa*. Corrections for Temperature and Pressure in the Measurements of the Volumes of Gases.

Characteristics of Acids, Bases, and Salts. Nomenclature. Laws of Chemical Combination. Combination of Gases by Volume. The Atomic Theory. Molecules and Molecular Weights. Avogadro's Hypothesis.

Hydrogen, Oxygen, Ozone, Water, its Physical and Chemical Properties. Hydrogen Peroxide. Nitrogen. The Atmosphere, its Relations to Life. Combustion. Diffusion of Gases. Principles of Ventilation. Ammonia and Ammonium Compounds, Nitric Acid, and Nitrates. Oxides of Nitrogen. Nitrous Acid and Nitrites.

Carbon, Carbon Monoxide, Carbon Dioxide. Carbonates. Marsh Gas, Olefiant Gas, Coal Gas. Flame, its Structure and Luminosity. Chlorine, Bromine, Iodine, and Fluorine, and their commonly occurring Compounds.



Sulphur, Sulphuretted Hydrogen and Sulphides, Sulphur Oxides, Sulphuric Acid and Sulphates, Sulphurous Acid and Sulphites.

Phosphorus, Arsenic, and Antimony, and their compounds with Oxygen and with Hydrogen. Phosphoric Acid and Phosphates, Arsenious Acid and Arsenites, Arsenic Acid and Arseniates. The detection of Phosphorus, Arsenic, and Antimony. Boron, Boracic Acid and Borates.

General properties of the more common Metals and their Compounds. The preparation and properties of such as are used in Medicine.

Differences between Organic and Inorganic Compounds, and Organic and Organised Bodies. Methods of determining the composition of Organic Compounds.

Explanation of the terms "Homologue," "Isomerism," "Polymerism," "Metamerism."

Cyanogen, Hydrocyanic Acid, Cyanic Acid and Urea, Uric Acid.

General Characteristics of Hydro-carbons, Alcohols, Ethers, Ethereal Salts, Amines, Aldehydes, Acids, Ketones, Amides.

Methyl and Ethyl Alcohols, their more important derivatives. Acetic Acid and its derivatives. Glycol. Lactic Acid and its homologues. Oxalic Acid and its homologues. Malic and Tartaric Acids.

Glycerine. Fats. Saponification. Allyl Compounds. Carbohydrates. Fermentation. Benzene, Phenol, Benzoic Acid, Salicylic Acid. Glucosides.

Principal Vegetable Acids. The Alkaloids, Nicotine, Conine, Morphine, Strychnine, Brucine, Quinine, Cinchonine. Chemical constituents of Vegetable and Animal Organisms.

### (3) Practical Chemistry—

The Examination will consist in the Qualitative Analysis of solutions or powders, containing not more than one acid or one base, also the preparation of simple compounds. The bases contained in these may be any one of those following, and may be combined with any of the commoner acids :—

Potassium, Sodium [Ammonium].

Calcium, Barium, Strontium, Magnesium, Iron, Manganese, Aluminium, Zinc, Chromium, Copper, Mercury, Lead, Bismuth, Tin, Arsenic, Antimony, and Silver.

The Candidate will be expected to be familiar with the methods of detecting the following substances :—Urea, Uric Acid, Grape Sugar, Morphine, Strychnine, Brucine, Cinchonine, Quinine.



## (4) Physics—

## Experimental Mechanics—

Laws of Motion considered experimentally, and simple applications. General properties of Solids, Liquids and Gases treated in an elementary manner.

## Heat—

Thermometry. Coefficients of Expansion. Calorimetry. Change of State. Hygrometry. Conduction, Convection, and Radiation.

## Magnetism and Electricity—

Simple Phenomena in Magnetism. Batteries : their Constitution and use. The Magnetic, Chemical, and Heating effects of the Electric Current. Ohm's Law. Simple Phenomena of Induced Currents. Elementary Phenomena in Electrostatics.

## Optics—

Propagation, Reflection, and Refraction of Light. Formation of Images by Mirrors and Lenses. The Prism.

## (5) Practical Physics—

Candidates will be expected to be familiar with the use of simple Physical Instruments, and to perform simple experiments in Experimental Mechanics, Heat, Electricity, and Optics.

## (6) Elementary Biology—

- (1) The distinctive properties of Living and Non-living Bodies.—The general conditions favourable and unfavourable to Life.

The structure, growth, and chemical composition of the cell-wall, protoplasm, and nucleus. The properties of protoplasm. The growth, modification, and division of cells. Formation of tissues. Division of labour, Members and Organs

- (2) The differences between Animals and Plants.
- (3) The Structure, Morphology, Physiology, and Life-histories of :—*Saccharomyces* (Yeast); *Bacterium*; *Mucor* (Mould); *Hæmatococcus*; *Spirogyra*; *Fucus* (Brown Seaweed); Fern. Fermentation; Putrefaction.



- (4) The Anatomy, Morphology, and Physiology of the Flowering Plant as illustrated by a consideration of the structure and functions of Stem, Leaf, and Root. The various parts of the Flower and their functions. Fertilisation. The production, dispersal, and germination of Seeds and Fruits.
- (5) The general characteristics of Invertebrate and Vertebrate Animals.
- (6) The Anatomy, Morphology and Life-histories of the Invertebrata as exemplified by the study of *Amœba*, *Vorticella*, *Hydra*, *Lumbricus* (Earthworm), *Tænia*, *Astacus* (Crayfish).
- (7) The Anatomy and Morphology of the Vertebrata as exemplified by the study of the digestive, circulatory, respiratory, urogenital and nervous systems of the *Amphioxus*, *Scyllium* (Dog-fish), *Rana* (Frog), and *Lepus* (Rabbit).
- (8) The Comparative Morphology of the Skeletons of *Scyllium*, *Rana*, and *Lepus*.
- (9) The various methods of reproduction—Vegetative, Asexual, and Sexual.
- (10) The Structure of Ova and Spermatozoids and the elementary principles of Animal Embryology.
- (7) Practical Biology—  
Candidates will be required to show a practical acquaintance with the Animals and Plants mentioned above; they will be expected to make dissections of the Animals and expose the various important organs, and to make preparations to illustrate the structure of the various Plants. Candidates are required to bring their own microscope, razor and dissecting instruments for this Examination.

## SECOND EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.

### OLD AND NEW REGULATIONS.

#### (1) Anatomy—

In addition to a general knowledge of the subject as tested by the written part of the Examination, each Candidate will be required to make a dissection on the recent subject. In the *vivâ voce* examination he will also be required to recognise parts on recent or prepared dissections, and to answer questions on Bones, Joints, etc. He must also have a knowledge of the more important facts regarding the development of the various systems.



## (2) Physiology—

In addition to the written Paper, the Candidate will be expected to perform tests for the more commonly occurring Physiological Products found in the Human Body, to explain the use of Physiological Instruments, and to recognise by the Microscope Histological Specimens.

## (3) Materia Medica and Pharmacy, including the Physiological action of Drugs—

Recognition of the officinal Drugs of the New British Pharmacopœia, knowledge of sources whence they are obtained, and their general properties. The physical and chemical characteristics of Drugs derived from the Inorganic Kingdom, and of the active Principles of Drugs derived from the Organic Kingdom. The Impurities and Adulterations to which the principal Drugs in the Pharmacopœia are liable.

The several Pharmaceutical Groups. The Officinal Preparations of the more important Drugs. The essential ingredients in the more important Preparations and the proportion of these ingredients. The ordinary Doses of the principal Drugs and their Preparations.

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### THIRD EXAMINATION.

## (NEW REGULATIONS.)

## (1) Pathology—

The Candidate is expected to show a general acquaintance with Pathology—Medical and Surgical—and his knowledge of Post-mortem work and Morbid Histology will also be tested.

## (2) Medical Jurisprudence—

Definition of Medical Jurisprudence.

The legal position of Medical Men.

The Coroner's Court. The Medical Witness.

Suspended Animation. Death. Certificate of Death, when to be refused. Legal Presumption of Death. Dying declarations. Wills made at the time of Death. Methods of Dying. Changes in the condition of a Corpse.

Wounds. Legal Definition of. Dangerous to life. Causing grievous bodily harm. Was the wound received during Life or after Death? Homicide. Suicide. Accident. Did the injury cause Death, directly or indirectly? Murder. Manslaughter. Particular injuries of the Head, Heart, and other Organs. Gunshot wounds. Railway injuries, Compensation for.



Offences against Chastity. Rape. Pregnancy. Criminal  
 Abortion. Infanticide. Concealment of Birth.  
 Asphyxia. Drowning. Hanging. Suffocation.  
 Inheritance. Life Assurance. Lunacy. Legal Responsibility  
 of the Insane. Toxicology.

(3) (a) Public Health—

*Sanitary Medicine.*—General Mortality, and its principal features (statistical and other). Zymotic Diseases. Epidemic and Endemic Diseases. Epizootic and Enzootic Diseases, and their relation to Human Diseases. Hygiene in relation to Meteorological and Topographical conditions, climate, air, water, food, clothing, occupation.

*Practical Hygiene.*—The dwelling (site, foundations, structure, etc.). Water supply, Ventilation and Cubic space, Warming and lighting. Conveniences. Drains, sewers. Refuse disposal, destructors. Sewage disposal and treatment. Sewerage works. Hospitals for Infectious Diseases. Disinfection. Vaccination.

(b) Elementary Bacteriology—

The Morphology and ordinary methods of cultivation and staining of Bacteria.

The Bacteriological examination of air and water,

The chief characteristics and properties of the micro-organism of Actinomycosis, Anthrax, Asiatic Cholera, Diphtheria, Erysipelas, Glanders, Malaria, Pneumonia, Suppuration, Septic infections, Tetanus, Tuberculosis and Enteric Fever.

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## FINAL EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.

(OLD REGULATIONS.)

1. Medicine and Clinical Medicine.
2. Surgery and Clinical Surgery.
3. Midwifery and Diseases of Women and Children.
4. Pathology.
5. Medical Jurisprudence.
6. Public Health.



## FINAL EXAMINATION.

(NEW REGULATIONS.)

1. Medicine, Clinical Medicine, and Psychological Medicine.
  2. Surgery and Clinical Surgery.
  3. Midwifery and Diseases of Women and Children.
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## EXAMINATION FOR THE DEGREE OF BACHELOR IN SURGERY.

Surgical Operations.  
Surgical Instruments.

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## EXAMINATION FOR THE DEGREE OF MASTER IN SURGERY.

Surgery, Principles and Practice.  
Surgical Pathology.  
Surgical Anatomy.  
Surgical Operations.  
Clinical Surgery.

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## EXAMINATION FOR THE DEGREE OF DOCTOR IN MEDICINE.

1. Examination on the Subject of an Essay written by the Candidate, and on the other subjects of the curriculum so far as they are related to the Subject of the Essay. (See pages 73 and 74.)



Doctors in Medicine to whom Gold Medals have been awarded for Essays as the most distinguished M.D. Graduates of their year.

1883. East, Frederick William	1891. Robinson, Louis
1884. Robinson, William	1892. Johns, John Francis
1885. Spicer, Frederick	1893. Hadley, Wilfred James
1886. Salvage, John Valentine	1894. Thomson, G. J. Crawford
1887. Cripps, Charles Couper	1895. Beattie, Thomas
1888. Williams-Freeman, J. P.	1896. Bolam, Robert Alfred
1889. Edridge-Green, Fred. W.	1897. Robson, Frederick
1890. Baigent, William	1898. Walker Fred. Septimus

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### SUCCESSFUL CANDIDATES FOR DEGREES IN MEDICINE, SURGERY, AND HYGIENE, AT THE UNIVERSITY OF DUR- HAM, 1898.

Doctors in Medicine who qualified in 1898,  
with the titles of their Essays.

APRIL, 1898.

- Bridges, Ernest Chittenden, M.B., B.S., The diagnosis and treatment of General Septic Peritonitis.  
Brown, Robert Cunyngham, M.B., B.S., Observations on some of the sensory phenomena of Tabes dorsalis.  
Crichton, Harry, M.B., B.S., Acute Rheumatism.  
Joy, Charles Holmes, M.B., B.S., Observations and clinical notes on Influenza.  
Magoris, Nicholas, M.B., B.S., Bronchiectasis.  
Rawes, William, M.B., Mental disorders of the Climacteric Period.  
Shortt, William Rushton, M.B., B.S., Alcoholic Insanity.  
Summerhayes, James Ward, M.B., Rheumatoid Arthritis.  
Tinley, William Edwyn Falkingbridge, M.B., B.S., The differential diagnosis of some acute abdominal lesions.

SEPTEMBER, 1898.

- Gocher, Gilbert, M.B., B.S., The brine baths of Droitwich and their therapeutical value.  
Hall, George Rome, M.B., M.S., The effects of West African Malaria, with special reference to treatment.  
Hodson, Thomas George Smith, M.B., Diabetes Mellitus, its pathology and etiology.



- Meyrick-Jones, Hugh Meyrick, M.B., B.S., Diphtheria and Anti-toxin.  
 Poole, Thomas Brice, M.B., B.S., An analysis of a series of cases occurring in an epidemic of Typhoid Fever.  
 Sanderson, Tom, M.B., B.S. Plumbism, its etiology, pathology, symptomatology, and treatment.  
 Scott, George William, M.B., B.S., Sporadic Cretinism.  
 Shapland, John Dee, M.B., B.S., Ozæna.  
 Simpson, Frederick Hampson, M.B., B.S., An inquiry into the psychic origin of the visceral manifestations of Hysteria.  
 Stewart, Charles, M.B., B.S., Tubercular Meningitis, its etiology, symptoms, diagnosis, and treatment.  
 Streatfeild, Thomas, M.B., B.S., Poisoning by waste products.  
 Thurnam, William Rowland, M.B., B.S., The treatment of Consumption in closed Sanatoria.  
 Walker, Frederick Septimus, M.B., B.S., Tetanus.  
 Warner, Allan, M.B., A clinical study of Puerperal Eclampsia.

### Master in Surgery.

APRIL, 1898.

- Eyre, John William Henry, M.D., B.S.  
 Kendall, Ernest Robert, M.B., B.S.

SEPTEMBER, 1898.

- Alderson, Wilfred Ernest, M.D., B.S.

### Doctor in Medicine for Practitioners of Fifteen Years' Standing.

APRIL, 1898.

- Biggs, Moses George, M.R.C.S., L.S.A.  
 Bryan, Francis Charles, M.R.C.S., L.S.A.  
 Chubb, William Lindsay, M.R.C.S., L.R.C.P.  
 Darley-Hartley, William, M.R.C.S., L.R.C.P.  
 Havell, Charles Graham, M.R.C.S., L.R.C.P.  
 Lightoller, Henry Martin, M.R.C.S., L.R.C.P., L.S.A.  
 McCarthy, Justin McCallum, M.R.C.S., L.S.A.  
 Phillips, Lawrence Willmer Kinglake, M.R.C.S., L.S.A.  
 Turner, Alfred James, L.S.A.

SEPTEMBER, 1898.

- Aird, Thomas Wilson, M.R.C.S., L.R.C.P.  
 Allen, Richmond Robert, L.R.C.P., F.R.C.S., I.  
 Blagg, Arthur Frederick, M.R.C.S., L.R.C.P., L.S.A.  
 Cree, William Edward, M.R.C.S., L.R.C.P., L.S.A.  
 Croft, Edward Octavius, M.R.C.S., L.R.C.P.  
 Cumming, George William Hamilton, M.R.C.S., L.R.C.P.



Dimmock, Henry Peers, M.R.C.S., L.R.C.P.  
 Emms, Alfred Wilson, M.R.C.S., L.S.A.  
 Frost, George, M.R.C.S., L.R.C.P.  
 Gimblett, William Henry, L.R.C.P., L.S.A.  
 Glissan, Benjamin John, L.R.C.P.E.; L.F.P.S.G.  
 Hoyland, Stanley Stenton, M.R.C.S., L.S.A.  
 Morton, Albert Samuel, M.R.C.S., L.S.A.  
 Scale, Thomas William, M.R.C.S., L.R.C.P., L.S.A.  
 Stokes, Henry Fraser, M.R.C.S., L.R.C.P.  
 Warburton, Arthur, M.R.C.S., L.R.C.P.  
 Wingrave, Thomas, M.R.C.S., L.S.A.

### Bachelor in Medicine—Final Examination.

(OLD REGULATIONS.)

APRIL, 1898.

#### *Honours—First Class.*

Stevens, Reginald Charles Jeremie, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.

#### *Honours—Second Class.*

Crossman, Francis Ward, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
 Godwin, Herbert James, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.

#### *Pass List.*

Baylis, Henry Edward Montgomery, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
 Harris, John, B.A., Guy's Hospital.  
 James, Frederick Charles, M.R.C.S., L.R.C.P., St. Thomas' Hospital.  
 Kennard, Howard Percy, St. Thomas' Hospital.  
 Rygate, Arthur Montague, M.R.C.S., L.R.C.P., Guy's Hospital.  
 Tulk-Hart, Thomas John Augustus, M.R.C.S., L.R.C.P., Guy's Hospital.  
 Turner, Percy Edward, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
 Wood, Maurice Dale, St. Bartholomew's Hospital.

SEPTEMBER, 1898.

#### *Honours—Second Class.*

Walsh, Leslie Herbert, M.R.C.S., L.R.C.P., King's College, London.

#### *Pass List.*

Brown, Gerald Burton, L.S.A., Guy's Hospital.  
 Warwick, William Henry, College of Medicine, Newcastle-upon-Tyne.



## Bachelor in Medicine—Final Examination.

(NEW REGULATIONS.)

APRIL, 1898.

### *Honours—Second Class.*

Adams, Thomas George Drabble, College of Medicine, Newcastle-upon-Tyne.  
Lankester, Ralph Albert Rogers, University College Hospital.

### *Pass List.*

Bell, John Thomson, College of Medicine, Newcastle-upon-Tyne.  
Newton, Harold Turner, College of Medicine, Newcastle-upon-Tyne.  
Phillips, Theodore John, College of Medicine, Newcastle-upon-Tyne.

SEPTEMBER, 1898.

### *Honours—First Class.*

Turner, George Grey, College of Medicine, Newcastle-upon-Tyne.  
Dent, Howard Henry Congreve, M.R.C.S., L.R.C.P., Mason College, Birmingham.

### *Honours—Second Class.*

Coxon, Henry Coxon, College of Medicine, Newcastle-upon-Tyne.

### *Pass List.*

Arthur, Arthur Samuel, College of Medicine, Newcastle-upon-Tyne.  
Baker, Joseph Ellis, College of Medicine, Newcastle-upon-Tyne.  
Cooke, Frank Anthony, College of Medicine, Newcastle-upon-Tyne.  
Davison, Leopold Stanley, College of Medicine, Newcastle-upon-Tyne.  
Fenn, Charles Edward, King's College, London.  
Fielden, Henry Adamson, College of Medicine, Newcastle-upon-Tyne.  
Gover, John Maxwell, College of Medicine, Newcastle-upon-Tyne.  
Harris, Herbert George, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
Joyce, Margaret, London School of Medicine for Women.  
Middlemiss, George Whitson, College of Medicine, Newcastle-upon-Tyne.  
Milbanke, William Byron, College of Medicine, Newcastle-upon-Tyne.  
Moorshead, Robert Fletcher, University College, Bristol.  
Rowse, Claudia Anita Prout, London School of Medicine for Women.  
Stewart, Grace Harwood, London School of Medicine for Women.



## Bachelor in Surgery.

APRIL, 1898.

- Adams, Thomas George Drabble, College of Medicine, Newcastle-upon-Tyne.  
 Baylis, Henry Edward Montgomery, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
 Bell, John Thomson, College of Medicine, Newcastle-upon-Tyne.  
 Crossman, Francis Ward, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
 Harris, John B.A., Guy's Hospital.  
 Kennard, Howard Percy, St. Thomas' Hospital.  
 Lankester, Ralph Albert Rogers, University College Hospital.  
 Newton, Harold Turner, College of Medicine, Newcastle-upon-Tyne.  
 Phillips, Theodore John, College of Medicine, Newcastle-upon-Tyne.  
 Stevens, Reginald Charles Jeremie, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
 Tulk-Hart, Thomas John Augustus, M.R.C.S., L.R.C.P., Guy's Hospital.  
 Turner, Percy Edward, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
 Wood, Maurice Dale, St. Bartholomew's Hospital.

SEPTEMBER, 1898.

- Arthur, Arthur Samuel, College of Medicine, Newcastle-upon-Tyne.  
 Baker, Joseph Ellis, College of Medicine, Newcastle-upon-Tyne.  
 Brown, Gerald Burton, L.S.A., Guy's Hospital.  
 Cooke, Frank Anthony, College of Medicine, Newcastle-upon-Tyne.  
 Coxon, Henry Coxon, College of Medicine, Newcastle-upon-Tyne.  
 Davison, Leopold Stanley, College of Medicine, Newcastle-upon-Tyne.  
 Fielden, Henry Adamson, College of Medicine, Newcastle-upon-Tyne.  
 Gover, John Maxwell, College of Medicine, Newcastle-upon-Tyne.  
 Harris, Herbert George, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital.  
 Joyce, Margaret, London School of Medicine for Women.  
 Lloyd, Alfred Phillips, M.B., College of Medicine, Newcastle-upon-Tyne.  
 Middlemiss, George Whitson, College of Medicine, Newcastle-upon-Tyne.  
 Moorshead, Robert Fletcher, University College, Bristol.  
 Milbanke, William Byron, College of Medicine, Newcastle-upon-Tyne.  
 Stewart, Grace Harwood, London School of Medicine for Women.  
 Turner, George Grey, College of Medicine, Newcastle-upon-Tyne.  
 Walsh, Leslie Herbert, M.R.C.S., L.R.C.P., King's College, London.



**Bachelor in Hygiene.**

SEPTEMBER, 1898.

Hardcastle, William, M.B., Lond., M.R.C.S., L.R.C.P.

Wreford, John, M.B., M.R.C.S., L.R.C.P.

**Bachelor in Medicine—Third Examination.**

APRIL, 1898.

*Honours—Second Class.*

Dent, Howard Henry Congreve, M.R.C.S., L.R.C.P., Mason College, Birmingham.

Bailes, Norman Christian, College of Medicine, Newcastle-upon-Tyne.

*Pass List.*

Cross, Solomon, College of Medicine, Newcastle-upon-Tyne.

Dickenson, George Oswald Morrell, College of Medicine, Newcastle-upon-Tyne.

Fawcus, Harold Ben, College of Medicine, Newcastle-upon-Tyne.

Fenn, Charles Edward, King's College, London.

Holmes, Charles Thomas, College of Medicine, Newcastle-upon-Tyne.

Halliday, John Rutherford, College of Medicine, Newcastle-upon-Tyne.

Hethcote, Douglas, College of Medicine, Newcastle-upon-Tyne.

Inman, Ernest, College of Medicine, Newcastle-upon-Tyne.

Johnson, Samuel Percy, Mason College, Birmingham.

Jacobs, Maurice, College of Medicine, Newcastle-upon-Tyne.

Milligan, James, College of Medicine, Newcastle-upon-Tyne.

Muirhead, James, College of Medicine, Newcastle-upon-Tyne.

Routledge, Robert Lewis, College of Medicine, Newcastle-upon-Tyne.

Stewart, Grace Harwood, London School of Medicine for Women.

Threlfall, Edward Norman, College of Medicine, Newcastle-upon-Tyne.

Vogwell, Charles Augustus, College of Medicine, Newcastle-upon-Tyne.

Weir, David Henderson, College of Medicine, Newcastle-upon-Tyne.

SEPTEMBER, 1898.

*Honours—Second Class.*

Burn, James Robert, College of Medicine, Newcastle-upon-Tyne.

Lambelle, Frederick William, College of Medicine, Newcastle-upon-Tyne.

Dix, Richard Henry, College of Medicine, Newcastle-upon-Tyne.

Parkinson, Thomas Smirk Percival, College of Medicine, Newcastle-upon-Tyne.

Peart, Robert, College of Medicine, Newcastle-upon-Tyne.



*Pass List.*

Alderson, Reginald, College of Medicine, Newcastle-upon-Tyne.  
 Brookes, Clifford Harold, St. George's Hospital.  
 Eggleston, Henry, College of Medicine, Newcastle-upon-Tyne.  
 French, Joseph James, College of Medicine, Newcastle-upon-Tyne.  
 Johnston, Duncan Matheson, St. Bartholomew's Hospital.  
 Stuart, Fred, College of Medicine, Newcastle-upon-Tyne.  
 Sheppard, Eleanor, London School of Medicine for Women.  
 Symes, William Johnston, Sheffield School of Medicine.  
 Smith, Leonard Satchwell, Mason College, Birmingham.  
 Vincent, Ralph Harry, St. Bartholomew's Hospital.  
 Wilkinson, Edgar Sheldon, St. Bartholomew's Hospital.

**Bachelor in Medicine—Second Examination.**

APRIL, 1898.

*Honours—Second Class.*

Walsh, Leslie Herbert, M.R.C.S., L.R.C.P., King's College Hospital.  
 Born, Edward Turner, College of Medicine, Newcastle-upon-Tyne.

*Pass List.*

Brown, Robert Story, College of Medicine, Newcastle-upon-Tyne.  
 Brown, George Burrows, College of Medicine, Newcastle-upon-Tyne.  
 French, Joseph James, College of Medicine, Newcastle-upon-Tyne.  
 Fisher, Richard Denington, M.R.C.S., L.R.C.P., London Hospital.  
 Fox, Howard Payne, Cooke's School of Anatomy.  
 Gibson, Charles Henry, College of Medicine, Newcastle-upon-Tyne.  
 Horan, Hubert Wolstenholme, College of Medicine, Newcastle-upon-Tyne.  
 Heslop, James Willie, College of Medicine, Newcastle-upon-Tyne.  
 Kirton, David Henry Jeavons, Mason College, Birmingham.  
 Mitchell, John Robert, College of Medicine, Newcastle-upon-Tyne.  
 Vaux, Ralph Thomas, College of Medicine, Newcastle-upon-Tyne.  
 Wigfield, Frederick Percy, College of Medicine, Newcastle-upon-Tyne.

SEPTEMBER, 1898.

*Honours—First Class.*

Parkin, Alfred, College of Medicine, Newcastle-upon-Tyne.

*Honours—Second Class.*

Mack, George, College of Medicine, Newcastle-upon-Tyne.  
 Simpson, Thomas Young, Cooke's School of Anatomy.  
 Coates, Thomas Seymour, College of Medicine, Newcastle-upon-Tyne.



*Pass List.*

- Adeniyi-Jones, Curtis Crispin, College of Medicine, Newcastle-upon-Tyne.  
 Appleby, Ernest Bertram, College of Medicine, Newcastle-upon-Tyne.  
 Brandon, Arthur John Spiller, St. Thomas' Hospital.  
 Clarkson, Frederick, St. Thomas' Hospital.  
 Caudwell, Francis Bernard Henry, M.R.C.S., L.R.C.P., Charing Cross Hospital.  
 Dudgeon, Herbert William, M.R.C.S., L.R.C.P., Guy's Hospital.  
 Daglish, William Robert Davidson, College of Medicine, Newcastle-upon-Tyne.  
 Froggatt, George Ernest, Middlesex Hospital.  
 Graham, James Herries, College of Medicine, Newcastle-upon-Tyne.  
 Hawes, Ivon Henry Skipwith, St. George's Hospital.  
 Hindmarch, Robert Simpson, College of Medicine, Newcastle-upon-Tyne.  
 Hodge, Albert Ernest, College of Medicine, Newcastle-upon-Tyne.  
 Jenkins, Evan Llewellyn, Westminster Hospital and Cooke's School of Anatomy.  
 Martin, John Henry, College of Medicine, Newcastle-upon-Tyne.  
 Morrison, John Wilson Howard, College of Medicine, Newcastle-upon-Tyne.  
 Murray, William Athol, College of Medicine, Newcastle-upon-Tyne.  
 Proctor, Alfred Henry, College of Medicine, Newcastle-upon-Tyne.  
 Quirke, Michael Joseph, Mason College, Birmingham.  
 Rhodes, Thomas Basil, Mason College, Birmingham.  
 Reah, Henry, College of Medicine, Newcastle-upon-Tyne.  
 Raw, Stanley, College of Medicine, Newcastle-upon-Tyne.  
 Scott, Frederick Riddle, College of Medicine, Newcastle-upon-Tyne.  
 Stainthorpe, William Waters, College of Medicine, Newcastle-upon-Tyne.  
 Sime, Francis Wheler, Guy's Hospital.  
 Turtle, Godfrey de Bec, King's College.  
 Wakefield, Walter, Mason College, Birmingham.

**Bachelor in Medicine—First Examination.**

(OLD REGULATIONS.)

APRIL, 1898.

*The following candidate passed in Chemistry with Chemical Physics, and Botany with Medical Botany:—*

Hardwicke, William Purton Allen, College of Medicine, Newcastle-upon-Tyne.

*The following passed in Chemistry with Chemical Physics:—*

Caudwell, Francis Bernard Henry, M.R.C.S., L.R.C.P., Charing Cross Hospital.



Dudgeon, Herbert William, M.R.C.S., L.R.C.P., Guy's Hospital.  
 Fisher, Richard Denington, M.R.C.S., L.R.C.P., London Hospital.

*The following candidate passed in Elementary Anatomy:—*

Smith, William Ernest North, College of Medicine, Newcastle-upon-Tyne.

SEPTEMBER, 1898.

*The following passed in Chemistry with Chemical Physics:—*

Bird, Arthur Hinckes, L.S.A., St. Mary's Hospital.  
 Hayward, William Curling, M.R.C.S., L.R.C.P., Charing Cross Hospital.  
 Woolrabe, Frederic William, L.R.C.P. and S., E.; L.F.P.S., G.; Melbourne University.

## Bachelor in Medicine—First Examination.

(NEW REGULATIONS.)

APRIL, 1898.

*The following passed in Elementary Anatomy and Biology,  
 Chemistry and Physics:—*

*Honours—Second Class.*

Jessop Harry, Mason College, Birmingham.

*Pass List.*

Hawkins, Katharine Mary Helen, London School of Medicine for Women.  
 Manson, Kenred, College of Medicine, Newcastle-upon-Tyne.  
 Markham, Leonard Montgomery, College of Medicine, Newcastle-upon-Tyne.  
 Newton, Leonard Clark, College of Medicine, Newcastle-upon-Tyne.  
 Nevin, Robert William, College of Medicine, Newcastle-upon-Tyne.  
 Ramsbottom, Frederick Charles, College of Medicine, Newcastle-upon-Tyne.

*The following passed in Chemistry and Physics:—*

Dodd, Alice Maud, London School of Medicine for Women.  
 Fox, Ida Emilie, London School of Medicine for Women.  
 Furnivall, Henry Wallace, University College Hospital, London.  
 Giles, James Alfred, College of Medicine, Newcastle-upon-Tyne.  
 Hawes, Ivon Henry Skipwith, St. George's Hospital.  
 Ledgard, Florence Dyer Durell, London School of Medicine for Women.  
 Milner-Moore, Edward Henry, St. Mary's Hospital.



*The following passed in Elementary Anatomy and Biology:—*

Amyot, Thomas Engelhart, College of Medicine, Newcastle-upon-Tyne.  
 Bradford, Anthony Bouchier, St. Thomas' Hospital.  
 Cox, Clement Harlow, Mason College, Birmingham.  
 Haver, Marshall, College of Medicine, Newcastle-upon-Tyne.  
 Norman, Ernest Edward, College of Medicine, Newcastle-upon-Tyne.  
 Osborne, Ernest, Mason College, Birmingham.  
 Pemberton, Thomas Eben, Mason College, Birmingham.  
 Renton, Ralph Stuart, College of Medicine, Newcastle-upon-Tyne.  
 Smith, Gayton Warwick, Guy's Hospital.  
 Spurgin, Basil Edward, College of Medicine, Newcastle-upon-Tyne.

*The following passed in Elementary Anatomy,  
Chemistry, and Physics:—*

Froggatt, George Ernest, Middlesex Hospital.  
 Gisburn, Alfred Ernest, College of Medicine, Newcastle-upon-Tyne.  
 Hendley, Philip Arthur, King's College, London.  
 Nesfield, Vincent Blumhardt, St. Mary's Hospital.  
 Turtle, Godfrey de Bec, King's College, London.

*The following Candidate passed in Elementary Anatomy:—*

Stewart, Charles Ravenscroft, St. George's Hospital.

SEPTEMBER, 1898.

*Honours—First Class.*

Waters, James Bowden, College of Medicine, Newcastle-upon-Tyne.

*Honours—Second Class.*

Walker, Norman Bryan, College of Medicine, Newcastle-upon-Tyne.

*Pass List.*

Crawford, John William, College of Medicine, Newcastle-upon-Tyne.  
 Emmerson, William Morton, College of Medicine, Newcastle-upon-Tyne.  
 East, Guy Rowland, College of Medicine, Newcastle-upon-Tyne.  
 Moyle, Reginald, Guy's Hospital.  
 Pirrie, Robert Reid, College of Medicine, Newcastle-upon-Tyne.  
 Ryman, Carl Anders, St. George's Hospital.  
 Wilson, Thomas, College of Medicine, Newcastle-upon-Tyne.  
 Younger, Robert, College of Medicine, Newcastle-upon-Tyne.



*The following passed in Chemistry and Physics:—*

- Amyot, Thomas Engelhart, College of Medicine, Newcastle-upon-Tyne.  
 Bradford, Anthony Bouchier, St. Thomas' Hospital.  
 Cox, Clement Harlow, Mason College, Birmingham.  
 Gibb, Charles Courtenay, College of Medicine, Newcastle-upon-Tyne.  
 Renton, Ralph Stuart, College of Medicine, Newcastle-upon-Tyne.  
 Stewart, Charles Ravenscroft, St. George's Hospital.  
 Thomas, John Benjamin, St. Mary's Hospital.

*The following passed in Elementary Anatomy and Biology:—*

- Armstrong, Frederick George, College of Medicine, Newcastle-upon-Tyne.  
 Cross, John William, College of Medicine, Newcastle-upon-Tyne.  
 Lamplough, Wharram Henry, Mason College, Birmingham.  
 McDowall, John Herbert, College of Medicine, Newcastle-upon-Tyne.  
 Rivaz, Percy Montgomery, St. Bartholomew's Hospital.  
 Robertson, Monica Lucien Mary, London School of Medicine for Women.

*The following passed in Elementary Anatomy, Chemistry, and Physics:—*

- Rutherford, Thomas Corrie, St. Thomas' Hospital.

*The following passed in Elementary Anatomy:—*

- Brandon, Arthur John Spiller, St. Thomas' Hospital.  
 Fisher, Charles, St. Bartholomew's Hospital.  
 Milner-Moore, Edward Henry, St. Mary's Hospital.  
 Parrott, John Norman, St. Mary's Hospital.





# EXAMINATION PAPERS FOR THE DEGREES.

## FIRST EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.

(OLD REGULATIONS.—FOUR YEARS' CURRICULUM.)

APRIL, 1898.

### Chemistry with Chemical Physics.

Professors BEDSON and STROUD, *Examiners*.

#### SECTION I.

- 1.—State the law of constant proportion. What experiments would you make with hydrogen and oxygen to illustrate the meaning of this law?
- 2.—Describe the preparation and properties of bromine. With what other elements is bromine usually associated? In what manner does it resemble the other elements of this group.
- 3.—What volume of sulphuretted hydrogen, measured at  $91^{\circ}\text{C}$ ., and under a pressure of 380 mm. of mercury, can be obtained from 110 grams of iron sulphide?  
 $\text{Fe} = 56, \text{S} = 32.$

#### SECTION II.

- 4.—Give an account of the manufacture and properties of ethyl alcohol. Why is this compound represented by the formula  $\text{C}_2\text{H}_5\text{OH}$ ? Explain, fully, what this formula indicates of the constitution of this compound.
- 5.—How are tartaric and oxalic acids obtained? How would you distinguish between an oxalate and a tartrate?
- 6.—What is a fat? How would you obtain glycerol from beef suet?

#### SECTION III.

- 7.—Define a unit of heat. State the quantities of heat required (a) to melt one gram of ice, (b) to raise one gram of water from  $0^{\circ}$  to  $100^{\circ}\text{C}$ ., (c) to convert one gram of water at  $100^{\circ}\text{C}$ . into steam at  $100^{\circ}\text{C}$ .



- 8.—A vertical wire is arranged, through which a very strong electric current is passed. State the nature of the magnetic field in the neighbourhood of the wire, and explain how you would experimentally explore the field.
- 9.—A parallel beam of white light falls upon one of the faces of an equilateral glass prism at an angle of incidence of  $45^\circ$ . Trace generally the course of the light through the prism, the index of refraction of the glass for sodium light being  $3/2$ .

(Six questions must be answered, and not more than six, two to be taken from each Section.)

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SEPTEMBER, 1898.

## Chemistry with Chemical Physics.

Professors BEDSON and STROUD, *Examiners*.

### SECTION I.

- 1.—What weight of zinc dissolved in dilute sulphuric acid would produce hydrogen sufficient to unite with 20 litres of chlorine, measured at  $91^\circ \text{C}$ . and 600 mm.  
 $\text{Zn} = 65, \text{Cl} = 35.5$ .
- 2.—Describe exactly how you would prepare and collect a jar of sulphur dioxide. Explain by equations the reactions which take place when this compound reacts with each of the following, (*a*) chlorine water, (*b*) an aqueous solution of sulphuretted hydrogen, (*c*) a solution of caustic soda, (*d*) dilute nitric acid.
- 3.—Explain, fully, the meaning of the formula  $\text{H}_2\text{O}$ . Describe exactly how you would establish the truth of this formula.

### SECTION II.

- 4.—Give three modes of formation of oxalic acid, explaining the reactions by equations. How would you distinguish calcium oxalate from calcium tartrate?
- 5.—What reactions are employed for the recognition of (*a*) urea, (*b*) grape sugar, (*c*) uric acid?
- 6.—Give equations representing the action of each of the following on ethyl alcohol, (*a*) hydrobromic acid, (*b*) sulphuric acid, (*c*) iodine and caustic soda.

### SECTION III.

- 7.—Upon what does the boiling point of a liquid depend? Describe some suitable method for determining the boiling point of alcohol.



- 8.—Describe the magnetic field in the neighbourhood of a coil of wire transmitting an electric current, (*a*) when the length of the coil is long compared with its diameter, (*b*) when it is short. Explain how you would perform the experiments.
- 9.—What are the essential portions of a projection lantern? How does the size of the image on the screen depend on the relative distances of the slide and screen from the focussing lens? Prove your statements.

(Six questions must be answered, and not more than six, two to be taken from each Section.)

### Elementary Anatomy.

Professor HOWDEN, *Examiner*.

- 1.—Describe the right parietal bone, and give an account of its articulations.
- 2.—Give the distinguishing characters of a typical dorsal vertebra. What special features characterise the 12th dorsal vertebra?
- 3.—Contrast the lower articular surface of the femur with the lower articular surface of the humerus.
- 4.—Describe the origins and insertions of the following muscles, and indicate the action of each, (*a*) flexor carpi radialis, (*b*) deltoideus, (*c*) supinator radii longus, (*d*) rectus femoris, (*e*) popliteus, (*f*) peroneus longus.

(All these questions must be answered.)

### Botany, with Medical Botany.

Professor POTTER, *Examiner*.

- 1.—What do you understand by bulbs, rhizomes, and tubers. Give examples of each, and point out the part they play in the plant economy.
- 2.—What are the essential members of a flower? Describe their structure, and give an account of their functions.
- 3.—Explain clearly what is meant by the terms *fruit* and *seed*. Give examples of true and false fruits.
- 4.—Give an account of the structure of a leaf as seen in transverse section. Show how its structure is adapted for the performance of its special functions.
- 5.—Describe the structure, and give an account of the functions of root-hairs.
- 6.—What are the characteristics of the Natural Orders Ranunculaceæ, Umbelliferæ, Solonaceæ? Mention two useful or poisonous plants from each.

(All these questions must be answered.)



# FIRST EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.

(NEW REGULATIONS.—FIVE YEARS' CURRICULUM.)

APRIL, 1898.

## Elementary Anatomy.

Professor HOWDEN, *Examiner*.

- 1.—Describe the right parietal bone, and give an account of its articulations.
- 2.—Give the distinguishing characters of a typical dorsal vertebra. What special features characterise the 12th dorsal vertebra?
- 3.—Contrast the lower articular surface of the femur with the lower articular surface of the humerus.
- 4.—Describe the origins and insertions of the following muscles, and indicate the action of each, (*a*) flexor carpi radialis, (*b*) deltoideus, (*c*) supinator radii longus, (*d*) rectus femoris, (*e*) popliteus, (*f*) peroneus longus.

(All these questions must be answered.)

## Elementary Biology.

Professor POTTER, *Examiner*.

- 1.—What are the essential members of a flower? Describe their structure and give an account of their functions.
- 2.—Describe the structure of a Spirogyra. Give a full account of its life-history.
- 3.—What are the distinctive features of the alimentary canal of carnivorous and herbivorous animals? Illustrate your answer by a comparative reference to types you have studied.
- 4.—Describe the vertebral column and pelvic girdle of the frog. Enumerate the spinal nerves, and give a short account of their distribution.
- 5.—Write an account of the life-history of the tape-worm (*Tænia*).
- 6.—Describe the structure of the mature ovum of a frog. Trace the changes which occur during the development as far as the formation of the three primitive layers. State briefly the structures which are derived from each of these.

(All these questions must be answered.)



## Chemistry.

Professor BEDSON, *Examiner*.

- 1.—State the law of constant proportion. What experiments would you make with hydrogen and oxygen to illustrate the meaning of this law?
  - 2.—Describe the preparation and properties of bromine. With what other elements is bromine usually associated? In what manner does it resemble the other members of this group?
  - 3.—What volume of sulphuretted hydrogen, measured at  $91^{\circ}$  C. and under a pressure of 380 mm. of mercury, can be obtained from 110 grams of iron sulphide?  
 $\text{Fe} = 56, \text{S} = 32.$
  - 4.—Give an account of the manufacture and properties of ethyl alcohol. Why is this compound represented by the formula  $\text{C}_2\text{H}_5\text{OH}$ ? Explain, fully, what this formula indicates of the constitution of this compound.
  - 5.—How are tartaric and oxalic acids obtained? How would you distinguish between an oxalate and a tartrate?
  - 6.—What is fat? How would you obtain glycerol from beef suet?
- (All these questions must be answered.)

## Physics.

Professor STROUD, *Examiner*.

- 1.—Describe Atwood's machine, and explain how it may be used to illustrate the laws of falling bodies.
- 2.—Describe, as fully as you can, the changes in volume that occur (a) when ice melts, (b) when water is gradually raised in temperature from  $0^{\circ}$  to  $100^{\circ}$  C.
- 3.—Explain how the latent heat of steam may be determined.  
8 grams of steam at  $100^{\circ}$  C. are passed into a calorimeter containing 250 grams of water at  $10^{\circ}$  C. The temperature rises to  $29^{\circ}$  C. Calculate the latent heat of steam.
- 4.—You are given a bar of steel with one end marked to be magnetised, so that the marked end is north-seeking. You are also provided with a length of insulated wire and a suitable battery. Describe the method of magnetisation, and give a figure of your arrangement.
- 5.—Upon what does the E.M.F. of a battery depend? The E.M.F. of a Daniell cell being 1.1 volts and of a Grove 2 volts, what is the E.M.F. in the circuit (a) when the zinc of the Daniell is joined to that of the Grove, and the copper and platinum are connected to the ends of the circuit; (b) when the zinc of the Daniell is joined to the platinum of the Grove, and the copper of the Daniell and the zinc of the Grove are connected to the ends of the circuit?



- 6.—State the laws of the reflection of light, and explain the formation of a real image of an object placed before a concave mirror at a distance greater than its radius of curvature. Give a diagram.

(All these questions must be answered.)

SEPTEMBER, 1898.

### Elementary Anatomy.

Professor HOWDEN, *Examiner*.

- 1.—Describe the articulations of the superior maxillary bone.
- 2.—Give the distinguishing characters of the *first* and *second* ribs.
- 3.—Name the structures which enter into the formation of the radio-carpal or wrist joint and indicate their relationship to each other. What movements take place at this articulation?
- 4.—Name the muscles which are *inserted* into the tarsal bones and indicate precisely the exact insertion of each.

(All these questions must be answered.)

### Elementary Biology.

Professor POTTER, *Examiner*.

- 1.—Describe, fully, the structure of a vegetable cell (*a*) when newly formed, (*b*) when in the adult condition.
- 2.—What do you understand by the terms *seed* and *spore*?  
Describe the structure of any seed and spore with which you may be acquainted and give an account of the conditions necessary for their further development.
- 3.—Give an account of the various methods of reproduction found in *Hydra*.  
Describe, fully, the structure of a tentacle.
- 4.—Describe the nervous system of *Astacus* (crayfish).  
In what respects do the nervous systems of vertebrates and invertebrates differ?
- 5.—Describe the arterial system of *Scyllium* (dog-fish).  
Give a short account of the structure of the heart and of the mechanism by which respiration is effected.
- 6.—Compare the alimentary canals of carnivorous and herbivorous animals. Illustrate your answer by special reference to the frog and the rabbit.

(All these questions must be answered.)



## Chemistry.

Professor BEDSON, *Examiner*.

- 1.—What weight of zinc dissolved in dilute sulphuric acid would produce hydrogen sufficient to unite with 20 litres of chlorine, measured at  $91^{\circ}\text{C}$ . and 600 mm. ?

$$\text{Zn} = 65, \text{Cl} = 35.5.$$

- 2.—Describe exactly how you would prepare and collect a jar of sulphur dioxide. Explain, by equations, the reactions which take place when this compound reacts with each of the following, (a) chlorine water; (b) an aqueous solution of sulphuretted hydrogen; (c) a solution of caustic soda; (d) dilute nitric acid.
- 3.—Explain, fully, the meaning of the formula  $\text{H}_2\text{O}$ . Describe exactly how you would establish the truth of this formula.
- 4.—Give three modes of formation of oxalic acid, explaining the reactions by equations. How would you distinguish calcium oxalate from calcium tartrate?
- 5.—What reactions are employed for the recognition of (a) urea, (b) grape sugar, (c) uric acid?
- 6.—Give equations representing the action of each of the following on ethyl alcohol, (a) hydrobromic acid, (b) sulphuric acid, (c) iodine and caustic soda.

(All these questions must be answered.)

## Physics.

Professor STROUD, *Examiner*.

- 1.—In an experiment with the Atwood Machine, the time of fall from rest through a distance = 315 centimetres is 10 seconds. What is the acceleration of the system during the fall, and what is the velocity at the end of the fall?
- 2.—The coefficient of linear expansion of zinc =  $\cdot 00003$ . A zinc cube (edge = 5 cms. at  $0^{\circ}\text{C}$ .) is raised in temperature to  $100^{\circ}\text{C}$ . Calculate its volume at this temperature.
- 3.—Describe the usual form of calorimeter used in the laboratory.

Such a calorimeter of copper (mass = 100 grams) contains 200 grams of water, initially at the temperature of  $30^{\circ}\text{C}$ . The calorimeter and its contents fall in temperature to  $20^{\circ}\text{C}$ ., the temperature of the surroundings. Explain how heat is lost, and calculate the number of units of heat lost.



- 4.—Two magnets of the same length are compared by the method of deflection. The mean deflection for the one is  $2\frac{1}{2}$  degrees and for the other 4 degrees. Explain how the pole strengths can be compared, and describe the method.
- 5.—What is the source of the energy when a battery is used to produce an electric current? Describe experiments to demonstrate the means that can be adopted to ascertain whether a given wire is transmitting an electric current.
- 6.—What is meant by the refraction of light? What are the laws of refraction, and how can they be demonstrated? Under what circumstances is the incident beam upon the plane separating surface between two media in no part refracted but wholly reflected?

(All these questions must be answered.)

## SECOND EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.

APRIL, 1898.

### Anatomy.

Professors HOWDEN and THOMSON, *Examiners.*

- 1.—Describe the triangular ligament of the urethra, and give an account of its relation
- 2.—How is the brachial plexus formed? What are its relations in the neck? Describe the branches which arise from the plexus *above* the clavicle, tracing each from its origin to its distribution.
- 3.—Describe, step by step, the dissection necessary to expose the anterior interosseous nerve of the fore-arm, and name the muscles which are supplied by it.
- 4.—Describe the temporo-maxillary articulation, and mention the structures which are in immediate relation to it.
- 5.—Describe the right auricle of the heart. Contrast its appearance in the adult with that in a nine months' foetus.
- 6.—Write a detailed account of the arteries in and around the knee joint, carefully noting their course and relations.

(Four questions only to be answered, of which two are to be taken from the first half of the paper, and two from the second half.)



## Physiology.

Mr. G. E. WILLIAMSON and Dr. T. G. BRODIE, *Examiners*.

- 1.—Give an account of the innervation of the heart, and explain the circumstances which affect the frequency and character of its beat.
- 2.—What is the chemical composition of the gastric juice? How does it act on the various constituents of the food and what are the causes modifying the amount of the secretion and its activity?
- 3.—Give briefly the structure and functions of the skin.
- 4.—Give a short account of the chief chemical and physical properties of hæmoglobin. Describe how hæmoglobin is destroyed within the body, giving the experiments upon which your statements are based.
- 5.—Describe carefully the method by which the lung is distended during an inspiration. What is the function of the pleura?
- 6.—What is the histological structure of the cortex cerebri? What do you understand by cerebral localisation? Describe the result of stimulation of any one area on the Rolandic convolutions.

(Four questions only to be answered, of which two are to be taken from the first half of the paper, and two from the second half.)

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## Materia Medica with Pharmacy.

Dr. McBEAN, *Examiner*.

- 1.—How is hydrocyanic acid prepared? Describe the respiratory changes which take place when a large or poisonous dose of the acid is taken.
- 2.—How is iodine obtained and what are its physical characters? Describe the preparation of sodium iodide. What is the dose, and how is iodism said to be produced?
- 3.—Name the official preparations of arsenious acid. How is liquor arsenici hydrochloricus prepared? Contrast the action of arsenious acid with quinine as an antiperiodic.
- 4.—Name four official preparations of zinc. Describe the preparation of zinc sulphate, and give the general action of salts of zinc.
- 5.—What part or parts of the plant *hyoscyamus niger* are official? Name official preparations, and describe the preparation of extract. Give doses of the different preparations, also their therapeutic uses.



- 6.—Name official preparations of ergot, and give doses of each. Describe the action of ergotin upon vaso-motor nervous system, also upon the pregnant uterus.

(Four questions must be answered, and not more than four.)

SEPTEMBER, 1898.

## Anatomy.

Professors HOWDEN and THOMSON, *Examiners*.

- 1.—Describe the course, relations, and tributaries of the right and left innominate veins.
- 2.—Give an account of the position and relations of the *male* bladder in the adult, and contrast the viscus of the adult with that of the child. How are the relations of the adult bladder modified by the amount of fluid it may contain?
- 3.—Describe the attachments of the following muscles. Discuss the action of each, and state its nerve supply, (*a*) pectoralis major, (*b*) flexor carpi ulnaris, (*c*) rectus femoris, (*d*) tibialis posticus.
- 4.—Describe the form, structure, position, and relations of the epiglottis.
- 5.—Describe the attachments and relations of the right iliacus muscle.
- 6.—Describe the course and relations of the musculo spiral nerve. Enumerate its branches.

(Four questions only to be answered, of which two are to be taken from the first half of the paper, and two from the second half.)

## Physiology.

Prof. OLIVER and Dr. T. G. BRODIE, *Examiners*.

- 1.—Where are the cardio-inhibitory, vaso-motor, and respiratory centres located? What is their function? With what organs are these centres respectively connected, and through what medium, and how, is that connection established?
- 2.—Draw a sphygmographic tracing to show marked diastolic murmurs. What factors favour diastolic murmurs?
- 3.—What are the chemical conditions, and what are the ferments concerned in (*a*) stomachal, and (*b*) duodenal digestion of proteids? What are the end-products in each instance, and their fate?



4. - Give a list of experiments or observations by which you would prove the circulation of the blood. Point out in each instance the conclusion you are able to draw as a result of the observation.
5. - What are the chief variations in body-temperature observed in a normal individual? What are the sources from which the heat of the body is derived, and what variations in the general life of the individual modify the amount of heat-production?
6. - Describe the processes involved in the absorption (*a*) of salts, and (*b*) of proteids, in the small intestine.

(Four questions only to be answered, of which two are to be taken from the first half of the paper, and two from the second half.)

## Materia Medica with Pharmacy.

Dr. McBEAN, *Examiner*.

1. - How is creta preparata prepared. Name official preparations containing it and give composition of pulvis cretae aromaticus.  
What is the action of prepared chalk when taken internally?
2. - Name official preparations of plumbi acetat. Give composition and dose of pilula plumbi c. opio, also the chief uses of acetate of lead when given internally.
3. - Give composition and strength of spiritus chloroformi. Describe the phenomena resulting from the inhalation of chloroform.
4. - Name official part of plant strophanthus hispidus, and also the official preparations. Describe the action of strophanthus (*a*) upon heart, (*b*) upon peripheral vessels and contrast its action with that of digitalis upon these vessels.
5. - What are the official preparations of aconite root. Name active principle and give the proportion of aconitina to benzoated lard in the unguentum aconitinae.  
Describe the action of aconite (*a*) upon sensory nerves, (*b*) upon heart.
6. - From what plant is quassia obtained. Describe the characters of quassia wood and name its chief constituents.  
Name official preparations of quassia (*a*) How is the infusion prepared?  
Describe the action of a bitter (*a*) upon the mouth, (*b*) upon the stomach, and (*c*) upon the intestines.

(Four questions must be answered, and not more than four.)



## THIRD EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.

(NEW REGULATIONS.)

APRIL, 1898.

### Pathology.

Dr. DRUMMOND, *Examiner*.

- 1.—Describe the naked eye and microscopical appearances of lung in septic pneumonia.
- 2.—How is lardaceous disease recognised in the *post-mortem* room? Describe the waxy kidney.
- 3.—Compare alcohol and syphilis as factors in the pathology of liver disease.
- 4.—Describe a microscopical section of fatty heart.
- 5.—Discuss the pathology of osteo-malacia.
- 6.—Give a description of the glands in Hodgkin's disease.

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### Medical Jurisprudence.

Dr. MURPHY, *Examiner*.

- 1.—When ordered by a coroner to make a *post-mortem* examination on a body where poisoning is suspected, describe fully the steps you would take.
- 2.—Describe fully the various tests for blood.
- 3.—Under what circumstances should you refuse to give a death certificate in a case that you had been attending up to the time of death?
- 4.—Under what circumstances would you recommend that a patient under your care should be sent to a lunatic asylum, and how would you proceed to get him there?
- 5.—Describe a case of poisoning by sulphuric acid during life, and the appearances after death.
- 6.—Describe the *post-mortem* appearances in a case of death from drowning.



## Public Health and Elementary Bacteriology.

Dr. H. E. ARMSTRONG and Prof. MURRAY, *Examiners*.

### SECTION I.

- 1.—Describe the manufacture of white and red lead, and show how it may affect the health of the workers.
- 2.—What is meant by the “plumbo-solvent action” of water, as regards (a) the different conditions under which it occurs, (b) its results, and (c) the means of its prevention?
- 3.—Classify drinking-waters into (a) potable, (b) safe, (c) doubtful, and (d) dangerous, according to their constitution. Name the diseases, acute and chronic, to which waters give rise, and indicate the morbid constituent in each case.
- 4.—By what causes is the air of dwellings rendered impure, and what are the effects on health?

### SECTION II.

- 5.—How would you examine a drop of blood from a case of anthrax for the *Bacillus Anthracis*? Describe the microscopical appearance of the bacilli in such a specimen.
- 6.—Describe the chief characters of the bacillus of typhoid fever, and show how man may become infected by it.

SEPTEMBER, 1898.

## Pathology.

Dr. DRUMMOND, *Examiner*.

- 1.—Contrast rodent ulcer with squamous epithelioma.
- 2.—Describe the various forms of fibromata.
- 3.—Enumerate the tape-worms, and describe *tænia solium*.
- 4.—Give a classification of Bright's disease.
- 5.—Describe a microscopical section of myeloid sarcoma. Where are myeloid sarcomata found?
- 6.—Describe the method of union in fracture of bones.

## Medical Jurisprudence.

Dr. MURPHY, *Examiner*.

- 1.—Write a full report for a Coroner, on a case where you are supposed to have been ordered to make a *post-mortem* examination on a body, where you find that death has been caused by acute poisoning by phosphorus.



- 2.—A man commits suicide by jumping into a river from a height of 40 feet. Describe the various ways in which his death might have been caused.
- 3.—What conditions of the urine from a man, otherwise apparently healthy, would induce you to reject him for life assurance?
- 4.—Describe, fully, the symptoms and treatment of a case of acute opium poisoning.
- 5.—Describe Dupuytren's classification of burns.
- 6.—Under what circumstances can a judge order the medical examination of a woman, to ascertain if she is pregnant?

## Public Health and Elementary Bacteriology.

Dr. H. E. ARMSTRONG and Prof. MURRAY, *Examiners.*

### SECTION I.

- 1.—What are the effects of defective ventilation on health? Explain the "plenum" and "vacuum" systems of ventilation. Describe a Tobin tube and a Sherringham valve.
- 2.—How does impure water affect health?
- 3.—In what ways may lead poisoning be brought about? How may the conditions be remedied?
- 4.—How may human health be injured by or through cows's milk? By what means may such injury be prevented?

### SECTION II.

- 5.—Describe the chief characters of the spirillum of Asiatic cholera, and show how it may cause an epidemic of this disease?
- 6.—How may tubercle bacilli be disseminated by persons suffering from tubercular phthisis? Describe the method of staining these bacilli in sputum.



## FINAL EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.

(OLD REGULATIONS.)

APRIL, 1898.

### Principles and Practice of Medicine.

Prof. PHILIPSON and Dr. JOHN ABERCROMBIE, *Examiners*.

1. —Under what heads may the causes of vomiting be arranged? Give the characteristics of the vomiting met with in the following diseases, peritonitis, gastric ulcer, and Ménière's disease, and their treatment.
2. —What are the symptoms and course of a case of intra-cranial tumour? Give its differential diagnosis and treatment.
3. —Discuss the causation and describe the symptoms and treatment of leucocythæmia.
4. —What complications may occur in the course of an attack of enteric fever?
5. —To what conditions may gall-stones give rise?
6. —What are the causes of hæmoptysis, and how would you treat a case?

(Every question must be answered.)

### Principles and Practice of Surgery.

Prof. ARNISON and Mr. T. PICKERING PICK, *Examiners*.

1. —Describe a case of acute inflammation of the tibia in a boy of 12. Give its pathology, probable results, symptoms, and the treatment of the acute stage.
2. —What are the causes of the sudden extravasation of urine? Describe the results, immediate and remote, the symptoms, and treatment.
3. —Give the symptoms of suppuration in the tympanum, and those indicating invasion of the mastoid cells. What treatment would you employ in the various stages? Describe any operation you might have to perform.
4. —Describe the changes which occur in the knee joint in osteo-arthritis. Give the symptoms, treatment, and prognosis.
5. —What are the signs of cancer of the tongue? How would you diagnose this disease from tertiary syphilitic ulceration? Give the treatment.
6. —Describe the rectum, giving its relations, connections, nervous and vascular supply.

(Every question must be answered.)



## Medical Jurisprudence and Public Health.

Dr. MURPHY and Dr. H. E. ARMSTRONG, *Examiners.*

- 1.—Describe the manufacture of white and red lead, and show how it may affect the health of the workers.
- 2.—What is meant by the “plumbo-solvent action” of water, as regards (a) the different conditions under which it occurs, (b) its results, and (c) the means of its prevention?
- 3.—What is a wound? Contrast the appearance of a deep incised wound of the thigh inflicted during life with a similar one inflicted some hours after death.
- 4.—Name the portions of the body in the order in which they are liable to undergo putrefaction.
- 5.—What evidence would you expect to find in the dead body of a boy, aged 7, that death had been caused by chronic starvation?
- 6.—Write a full report for a coroner on a case in which you are supposed to have been called in to examine the body of a female, aged 20, found dead with her throat cut in a room in which she was lodging.

(Every question must be answered.)

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## Midwifery and Diseases of Women and Children, and Pathology.

Dr. NESHAM and Dr. DRUMMOND, *Examiners.*

- 1.—Describe the mechanism of delivery in the first cranial position, viz., the occiput pointing to the left foramen ovale.
- 2.—Describe the signs of pregnancy *per vaginam* in the order of date at which they are to be recognised, and state what conditions may lead to error in their recognition.
- 3.—What causes give rise to labial hæmatoma during labour? What symptoms accompany this condition, and how would you treat a case thus complicated?
- 4.—What causes give rise to adherent placenta? What are the effects of this condition after the birth of the child, and how would you treat the case?
- 5.—Discuss the pathology of paralysis agitans.
- 6.—Give an account of the pathology of pyo-pneumo-thorax.
- 7.—Describe a microscopical section of liver—congenital syphilis.
- 8.—Explain briefly the following terms:—Hydrocephalus, hydro-myelia, syringomyelia, spina-bifida.

(Every question must be answered.)



SEPTEMBER, 1898.

**Principles and Practice of Medicine.**Professor PHILIPSON and Dr. JOHN ABERCROMBIE, *Examiners.*

- 1.—Enumerate the causes of hæmoptysis, mention the conditions with which it may be confounded, and give their differential diagnosis. Describe the treatment of hæmoptysis, having in view the causes mentioned.
- 2.—Discuss the causation of chronic parenchymatous nephritis, and give the symptoms, progress, and treatment of the condition.
- 3.—Distinguish between embolism and thrombosis of cerebral arteries, by a description of their symptoms and effects. Give the treatment of both conditions.
- 4.—What are the causes of convulsions in children? How would you endeavour to determine the actual cause in any given case?
- 5.—Describe the symptoms, course, prognosis, and treatment of atrophic cirrhosis of the liver.
- 6.—Discuss the diagnosis and medical treatment of disease of the appendix vermiformis. What would be the indications for surgical interference?

(Every question must be answered.)

**Principles and Practice of Surgery.**Prof. ARNISON and Mr. T. PICKERING PICK, *Examiners.*

- 1.—Transverse fracture of the patella. Explain the frequency of incomplete or delayed union. Mention the various methods of treatment, and describe fully any two methods which you prefer to others.
- 2.—Acute glaucoma. Give the symptoms, pathology, and treatment.
- 3.—Describe the symptoms, progress, probable late effects, and the treatment of a case of extravasation of urine following an injury to the perineum.
- 4.—Dislocation of the head of the femur on to the dorsum ilii. Describe the mode of causation, the symptoms and the treatment, immediate and subsequent.
- 5.—Describe the pathology, the symptoms, and treatment of acute necrosis (panostitis).
- 6.—Describe the inguinal canal, its boundaries and relations to other structures. Describe in detail the operation you would perform for the radical cure of an oblique inguinal hernia.

(Every question must be answered.)



## Medical Jurisprudence and Public Health.

Dr. MURPHY and Dr. H. E. ARMSTRONG, *Examiners.*

- 1.—What are the effects of defective ventilation on health  
Explain the “plenum” and “vacuum” systems of ventilation, and describe a Tobin tube and a Sherringham valve.
- 2.—How does impure water affect health?
- 3.—Describe the appearance of a foetus at the end of the 12th week?
- 4.—If you suspected that an adult patient you were attending was suffering from chronic arsenical poisoning, what would you do?
- 5.—How and under what circumstances can a medical witness utilise his notes of a case when in the witness box?
- 6.—Name all the narcotic poisons you can remember, and give the smallest recorded fatal dose of each.

(Every question must be answered.)

## Midwifery and Diseases of Women and Children, and Pathology.

Dr. NESHAM and Dr. DRUMMOND, *Examiners.*

- 1.—How would you diagnose in the first stage of labour, a face presentation in the first position? All other conditions being normal, how would you treat the case, and what prognosis would you give as to mother and child?
- 2.—How would you deliver the after-coming head in an ordinary breech case,  
  - (a) Where the head is detained above the brim.
  - (b) Where the head is arrested in the pelvic cavity.
- 3.—What complications indicate the necessity of cephalotripsy or craniotomy? Give the comparative merits of these operations, but do not describe them.
- 4.—Give the differential diagnosis of a fibroid polypus that has passed the os uteri from malignant disease of the cervix, and from inversion of the uterus. How would you treat a fibroid polypus in this position?
- 5.—Describe a *post-mortem* examination on a case dead of tubercular meningitis.
- 6.—How does the portal blood find its way into the systemic vessels in a case of advanced cirrhosis of the liver?
- 7.—Give a short account of the lesions in syphilis in the various stages.
- 8.—Describe a microscopical section of a syphilitic liver in a case of congenital syphilis, and enumerate the stains you would employ.



## FINAL EXAMINATION FOR THE DEGREE OF BACHELOR IN MEDICINE.

(NEW REGULATIONS.)

APRIL, 1898.

### Principles and Practice of Medicine and Psychological Medicine.

Professor PHILIPSON, Dr. T. W. McDOWALL, and  
Dr. JOHN ABERCROMBIE, *Examiners.*

- 1.—Explain the production of bronchiectasis. Give the physical signs, diagnosis, and treatment of the condition.
- 2.—Describe the physical signs and effects of mitral stenosis upon the heart and other organs. Give the treatment of a case of mitral valvular disease in its different stages.
- 3.—Classify the causes of pyuria, and give the diagnosis of the conditions mentioned, their prognosis and treatment.
- 4.—Under what circumstances may pericarditis be developed? How would you recognise it, and what would be your treatment.
- 5.—Describe a typical case of locomotor ataxy.
- 6.—State briefly the bodily and mental symptoms usually seen in the various stages of general paralysis.
- 7.—Mention the forms of mental defect and derangement associated with epilepsy, and describe the treatment necessary in epileptic excitement.

(Questions 1, 2, 3, 4, and 5, and one of the two questions numbered 6 and 7 must be answered.)

### Principles and Practice of Surgery.

Professor ARNISON and Mr. T. PICKERING PICK, *Examiners.*

- 1.—Describe a case of acute inflammation of the tibia in a boy of 12. Give its pathology, probable results, symptoms, and the treatment of the acute stage.
- 2.—What are the causes of sudden extravasation of urine? Describe the results, immediate and remote, the symptoms, and treatment.
- 3.—Give the symptoms of suppuration in the tympanum, and those indicating invasion of the mastoid cells. What treatment would you employ in the various stages? Describe any operation you might have to perform.



- 4.—Describe the changes which occur in the knee joint in osteoarthritis. Give the symptoms, treatment, and prognosis.
- 5.—What are the signs of cancer of the tongue? How would you diagnose this disease from tertiary syphilitic ulceration? Give the treatment.
- 6.—Describe the rectum, giving its relations, connections, nervous and vascular supply.

(Every question must be answered.)

### Midwifery and Diseases of Women and Children.

Dr. NESHAM, *Examiner*.

- 1.—Describe the mechanism of delivery in the first cranial position, viz., the occiput pointing to the left foramen ovale.
- 2.—Describe the signs of pregnancy *per vagiam* in the order of date at which they are to be recognised, and state what conditions may lead to error in their recognition.
- 3.—What causes give rise to labial hæmatoma during labour? What symptoms accompany this condition, and how would you treat a case thus complicated?
- 4.—What causes give rise to adherent placenta? What are the effects of this condition after the birth of the child, and how would you treat the case?
- 5.—What is Cæsarian section? What is Porro's operation? What advantages has Porro's operation over Cæsarian section. What objections may be advanced against Porro's operation?
- 6.—What do you understand by spurious pregnancy? At what time of life does it generally occur? How are the signs and symptoms simulated, and how would you diagnose and treat the case?

(Every question to be answered.)

SEPTEMBER, 1898.

### Principles and Practice of Medicine and Psychological Medicine.

Professor PHILIPSON, Dr. T. W. McDOWALL, and

Dr. JOHN ABERCROMBIE, *Examiners*.

- 1.—Describe the symptoms, physical signs, and treatment of emphysema of the lungs. Discuss its etiology, method of production, and diagnosis.
- 2.—What is the usual course of an epidemic of scarlet fever, as to season, fatality, and its incidence upon certain localities and upon different classes of persons? State, in detail, the measures to be taken to prevent its spread.



- 3.—Classify the causes of albuminuria, and give the prognosis of the conditions mentioned, and their treatment.
- 4.—Discuss the symptoms, course, diagnosis, etiology, and treatment of infective endocarditis.
- 5.—Under what circumstances does cerebral hæmorrhage take place? How would you recognise it, and what would be your treatment?
- 6.—Describe the symptoms and course of a case of acute delirious mania, and give the treatment.
- 7.—Give the mental and bodily symptoms usually present in each stage of a case of general paralysis.

(Questions 1, 2, 3, 4, and 5, and *one* of the two questions numbered 6 and 7 must be answered.)

### Principles and Practice of Surgery.

Professor ARNISON and Mr. T. PICKERING PICK, *Examiners*.

- 1.—Transverse fracture of the patella. Explain the frequency of incomplete or delayed union. Mention the various methods of treatment, and describe fully any two methods which you prefer to others.
- 2.—Acute glaucoma. Give the symptoms, pathology, and treatment.
- 3.—Describe the symptoms, progress, probable late effects, and the treatment of a case of extravasation of urine following an injury to the perineum.
- 4.—Dislocation of the head of the femur on to the dorsum ilii. Describe the mode of causation, the symptoms, and the treatment, immediate and subsequent.
- 5.—Describe the pathology, the symptoms, and treatment of acute necrosis (panostitis).
- 6.—Describe the inguinal canal, its boundaries and relations to other structures. Describe in detail the operation you would perform for the radical cure of an oblique inguinal hernia.

(Every question must be answered.)

### Midwifery and Diseases of Women and Children.

Dr. NESHAM, *Examiner*.

- 1.—How would you diagnose in the first stage of labour, a face presentation in the first position? All other conditions being normal, how would you treat the case, and what prognosis would you give as to mother and child?



- 2.—How would you deliver the after-coming head in an ordinary breech case,
  - (a) Where the head is detained above the brim.
  - (b) Where the head is arrested in the pelvic cavity.
- 3.—What complications indicate the necessity of cephalotripsy or craniotomy? Give the comparative merits of these operations, but do not describe them.
- 4.—Give the differential diagnosis of a fibroid polypus that has passed the os uteri from malignant disease of the cervix, and from inversion of the uterus. How would you treat a fibroid polypus in this position?
- 5.—What causes give rise to presentation of the child other than the head or breech? Describe "spontaneous version" and "spontaneous evolution."
- 6.—What complications may indicate the necessity of inducing premature labour at the eighth month of utero gestation? Describe the method you think best of inducing labour at this period.

(Every question must be answered.)

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## EXAMINATION FOR THE DEGREE OF MASTER IN SURGERY.

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APRIL, 1898.

### Principles and Practice of Surgery.

Professor ARNISON and Mr. T. PICKERING PICK, *Examiners.*

- 1.—In the endeavour (unsuccessful) to reduce an old dislocation of the humerus, a swelling suddenly appears in the axilla. What has happened? What would you look to to establish your diagnosis, and what would you do?
- 2.—A married woman has missed two menstrual periods. She becomes suddenly faint, pallid, and collapsed, with no visible hæmorrhage. State what, on investigating the case, you would expect to find as to the previous history and the local condition? How far might such local condition influence your treatment, and what would your treatment be?
- 3.—A child is supposed to have got a "puff dart" in his trachea. How would you diagnose its presence, and what steps would you take for its removal? Describe the probable consequences if it remains there.



- 4.—Describe in detail the pathological changes which take place in the bones in rickets. Give the etiology, the symptoms, and the treatment of this disease.
- 5.—Describe the various kinds of whitlow. Mention the possible complications, and give the treatment.
- 6.—Classify the different forms of cataract. Give the symptoms, diagnosis, and treatment of the senile variety.

(Four questions only to be answered, of which two are to be taken from the first half of the paper, and two from the second half.)

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## Surgical Pathology and Surgical Anatomy.

Professor ARNISON and Mr. T. PICKERING PICK, *Examiners*.

- 1.—Describe the different forms of gangrene which may be produced by (a) disease of the arteries, (b) lesion of arteries, (c) acute inflammation.
- 2.—Discuss the pathological changes likely to result from old-standing stricture of the urethra.
- 3.—Contrast adenoma, adeno-fibroma, adeno-sarcoma, and carcinoma, as found in the female breast.
- 4.—Describe the course, relations, and structure of the left ureter in the male.
- 5.—Describe the origin, course, relations, and branches of the lingual artery. Describe an operation for its ligature.
- 6.—Describe the course and relations of the portal vein, enumerating its tributaries.

(Four questions only to be answered, of which two are to be taken from the first half of the paper, and two from the second half.)

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SEPTEMBER, 1898.

## Principles and Practice of Surgery.

Professor ARNISON and Mr. T. PICKERING PICK, *Examiners*.

- 1.—Explain the process by which complete bony ankylosis takes place in acute inflammation of the knee-joint. State the symptoms indicating the structural changes, and describe fully your treatment. What length of time would probably be required to complete the "natural cure?"



- 2.—A strangulated inguinal hernia is returned into the abdomen, but all the symptoms continue as before. Explain the probable nature of the case, and describe fully your treatment.
- 3.—What circumstances would lead you (*a*) to cut into, (*b*) to excise a kidney? Describe the latter operation.
- 4.—Give the symptoms of a case of compression of the brain from laceration of the middle meningeal artery. Describe in detail the treatment of this condition. What is the prognosis?
- 5.—Mention the different varieties of loose bodies found in joints. Describe the way in which they are formed. Give the symptoms and treatment.
- 6.—Give the differential diagnosis between epithelioma, rodent ulcer, and tertiary syphilitic ulceration. How would you distinguish rodent ulcer from epithelioma by the microscope?

(Four questions only to be answered, of which two are to be taken from the first half of the paper, and two from the second half.)

## Surgical Pathology and Surgical Anatomy.

Professor ARNISON and Mr. T. PICKERING PICK, *Examiners*.

- 1.—Describe the morbid changes commonly found in a person dead from protracted syphilis.
- 2.—What are the causes of spontaneous gangrene of the foot? Describe the pathological changes, and the process of natural separation, and subsequent repair.
- 3.—Enumerate and give the pathology of the cystic tumours found in the neck.
- 4.—Describe the ligaments of the hip joint, and mention their surgical bearings in connection with dislocation.
- 5.—Describe an excision of the wrist by Lister's Method. Mention the tendons which require division in this operation.
- 6.—Give the relations of the innominate artery, and show how the collateral circulation would be carried on after ligature of this vessel.

(Four questions only to be answered, of which two are to be taken from the first half of the paper, and two from the second half.)



# EXAMINATION FOR THE DEGREE OF DOCTOR IN MEDICINE FOR PRAC- TITIONERS OF FIFTEEN YEARS' STANDING.

APRIL, 1898.

## Medicine and Allied Sciences.

Professor PHILIPSON and Dr. JOHN ABERCROMBIE, *Examiners*.

- 1.—Enumerate the diseases associated with hæmaturia. Give the distinguishing characters of the maladies mentioned and their treatment.
- 2.—Describe the symptoms and physical signs of aneurism of the transverse portion of the arch of the aorta. Review the diagnosis of the condition, and discuss its treatment.
- 3.—Give the relative position of the stomach to the parietes, and describe its relative anatomy.
- 4.—What forms of insanity are associated with tubercular phthisis, and in what ways are they associated? What bearing has the association upon the prognosis of the insanity.
- 5.—Discuss the symptoms, physical signs, prognosis, and treatment of pleural effusion both in adults and children.

(Every question must be answered.)

## Surgery and Allied Sciences.

Professor ARNISON, Dr. H. E. ARMSTRONG, and

Mr. T. PICKERING PICK, *Examiners*.

- 1.—Give the pathology, symptoms, and treatment of tuberculous disease of the hip in its early stages.
- 2.—Give the causes, pathology, symptoms, and treatment of internal hæmorrhoids.
- 3.—Name the muscles, arteries, and nerves which would be divided in a circular amputation in the middle of the thigh.
- 4.—By what causes is the air of dwellings rendered impure, and what are the effects on health?
- 5.—Describe the trichina spiralis and the cysticercus cellulosæ.

(Questions 1, 2, and 3 must be answered, and one of the two questions numbered 4 and 5.)



## Midwifery, Medical Jurisprudence, and Pathology.

DRS. NESHAM, DRUMMOND, and MURPHY, *Examiners*.

- 1.—What are the causes of impaction in breech presentation in the second stage of labour? How would you treat a case thus complicated?
- 2.—What causes may give rise to post-partum hæmorrhage after the expulsion of the placenta? What treatment would you adopt to stop the hæmorrhage and rally the patient?
- 3.—Discuss the pathology of phlebitis.
- 4.—Describe adenoma of the breast—fresh and microscopical characteristics.
- 5.—Describe a chronic case of arsenical poisoning ending fatally, and what evidence you would expect to find in the body after death, In what organs you would expect to find arsenic, and how you would test for it.
- 6.—Under what circumstances will a dying declaration be admitted as evidence.

(Every question must be answered.)

SEPTEMBER, 1898.

## Medicine and Allied Sciences.

Professor PHILIPSON and Dr. JOHN ABERCROMBIE, *Examiners*.

- 1.—Mention the diseases with which enteric fever may be confounded, and give their differential diagnosis. Give the treatment of an uncomplicated case of enteric fever.
- 2.—Give the clinical features and treatment of a case of cancer of the stomach. Contrast the condition with ulcer and pernicious anæmia.
- 3.—Give the relative positions to the chest wall of the aortic arch and its branches.
- 4.—Give the characteristic symptoms, and describe the treatment of general paralysis of the insane. What are the conditions that may be mistaken for this disease, and how are they to be distinguished?
- 3.—What is meant by failure of compensation in regard to organic disease of the heart. Under what circumstances does it occur, how would you recognise it, and what would be your treatment?

(Every question must be answered.)



## Surgery and Allied Sciences.

Professor ARNISON, Dr. H. E. ARMSTRONG, and

Mr. T. PICKERING PICK, *Examiners.*

- 1.—What is the cause of lateral curvature of the spine? Describe the anatomical changes which take place. Give the symptoms and treatment.
- 2.—Give the pathology, the symptoms and treatment of a case of facial erysipelas.
- 3.—Enumerate the branches of the external carotid artery, and describe briefly their distribution.
- 4.—In what ways may enteric fever be caused? How may the conditions be prevented from acting?
- 5.—How may human health be injured by diseased or unsound butcher meat? What protective measures would you adopt?

(Questions 1, 2, and 3 must be answered, and *one* of the two questions numbered 4 and 5.)

## Midwifery, Medical Jurisprudence, and Pathology.

Drs. NESHAM, DRUMMOND, and MURPHY, *Examiners.*

- 1.—What causes may produce partial or complete inversion of the uterus immediately after the delivery of the child? What symptoms does complete inversion give rise to? How would you diagnose and treat the case?
- 2.—What causes give rise to cervical endometritis? How would you diagnose and treat the case?
- 3.—What is a wound? Name and define the different forms of wounds.
- 4.—Contrast "The Workmen's Compensation Act, 1880," with "Employers' Liability Act, 1897."
- 5.—Discuss the pathology of paraplegia in Pott's disease.
- 6.—What is a dermoid? Where do they occur? Give an account of their pathology.

(Every question must be answered.)



## EXAMINATION FOR THE DEGREE OF BACHELOR IN HYGIENE, AND FOR THE DIPLOMA IN PUBLIC HEALTH.

APRIL, 1898.

### Sanitary Legislation, Nosology, and Sanitary Medicine.

Professor PHILIPSON and Dr. H. E. ARMSTRONG, *Examiners*.

- 1.—Give a summary of the law relating to sewers and drains.
- 2.—Describe the provisions of Infectious Diseases (Notification) Act, 1889.
- 3.—Under what statutes is the prevention of infectious diseases provided for, and what are the provisions in question?
- 4.—Give a classification of human communicable diseases, according to the media and channels by which they are conveyed.
- 5.—Discuss the question: Has influenza become endemic to this country? Give proofs that influenza is infectious.
- 6.—What is the incubation period of variola and vaccinia respectively? How would your knowledge influence your practice when persons unprotected, or not fully protected, are exposed to the infection of variola?

(Every question must be answered.)

### Comparative Pathology.

Professor MURRAY, *Examiner*.

- 1.—Describe the chief characters of the *bacillus typhosus* and of the *bacillus coli communis*. How could you find and identify these bacteria in a sample of water?
- 2.—Show how a pure culture of the *bacillus tetani* can be obtained from a person suffering from traumatic tetanus. Where is this bacillus found outside the body, and how does man become infected by it?
- 3.—Write a description of the structure and life-history of the *taenia echinococcus*, and show how man may become infected by this parasite.
- 4.—Discuss the bacteriology of acute lobar pneumonia, giving experimental evidence of the part played by bacteria in this disease.



- 5.—Describe fully how you would demonstrate the efficiency of perchloride of mercury as an antiseptic.
- 6.—How may tubercle bacilli be disseminated by persons suffering from tuberculosis? Show how this might be prevented.

(Every question must be answered.)

## Sanitary Chemistry and Physics.

Professors BEDSON and STROUD, *Examiners.*

- 1.—Do you consider a well water, which gave the following results on analysis, to be suitable for drinking purposes? State your reasons for the opinion you hold :—  
 Total solids, 65·5 grains per gallon.  
 Chlorine, 6·2  
 Hardness, equal to 17 grains per gallon of calcium carbonate.  
 Free ammonia, 0·012 parts per million.  
 Albuminoid ammonia, 0·11 parts per million.  
 Nitrogen, as nitrates and nitrites, 59 parts per million.  
 Poisonous metals, none.
- 2.—How would you determine the proportions of nitrogen, oxygen carbon dioxide and hydrogen in a mixture of these gases?
- 3.—Describe exactly how you would prepare a standard solution of potassium permanganate, and how you would make a solution of such a strength that 1 c.c. = 0·1 milligramme of oxygen.  
 $K = 39\cdot1$ ,  $Mn = 55$ ,  $O = 16$ ,  $Fe = 56$ .
- 4.—Discuss the corrections to be made after taking the reading of a barometer.  
 On a certain day the height of the mercury column, as read by a brass scale, was 763 mm., the temperature being  $15^{\circ}C$ . Calculate the height of the mercury column at  $0^{\circ}C$ . required to produce the same pressure. The brass scale is correct at  $0^{\circ}C$ ., and the coefficient of linear expansion of brass =  $\cdot000019$ , the coefficient of expansion of mercury being  $\cdot00018$ .
- 5.—Define the dew point. Explain the meaning of the statement that the maximum pressure of aqueous vapour at  $10^{\circ}C$ . is that due to 9·2 mm. of mercury. If the dew point is  $10^{\circ}C$ ., what is the pressure of the aqueous vapour present in the air?



- 6.—What is meant by the candle-power of a source of light? In an experiment with the Bunsen photometer, the distance, after adjustment, of a source of light A from the screen = 70 cms., while that of a source B = 104 cms. Compare the candle-powers of A and B.

(Every question must be answered.)

### Practical Hygiene, Climatology, Meteorology, etc., and Vital Statistics.

Professor PHILIPSON and Dr. H. E. ARMSTRONG, *Examiners*.

- 1.—Show how the general mortality-rate is affected by (a) climate and meteorology, and (b) zymotic diseases. Indicate the relation of (a) to (b) in the matter.
- 2.—Describe the principal winds on the earth's surface and their causes, and show their relation to the public health.
- 3.—Give an account of the different methods in use for dealing with town's refuse (solid and liquid)
- 4.—Show the ordinary defects of cowhouses and the ill effects arising therefrom. Give details of a model cowhouse. Name the diseases spread by milk:—Show how such spread may take place, and indicate the steps by which it is usually detected and dealt with.
- 5.—Give facts to prove that tubercle is independent of latitude and longitude, and of heat and cold, and that there is no constant relation between its prevalence and the co-existence of any of the chief meteorological features which constitute climate.
- 6.—What are the conditions of soil which tend to the production of infantile summer diarrhoea? Give your views as to how the conditions severally act.

(Every question must be answered.)

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SEPTEMBER, 1898.

### Sanitary Legislation, Nosology, and Sanitary Medicine.

Professor PHILIPSON and Dr. H. E. ARMSTRONG, *Examiners*.

- 1.—What is meant by the expressions—mean duration of life, probable duration of life, and expectation of life? Which of these furnishes a true test of the health of the people?
- 2.—Give a short historical account of leprosy. With what diseases may leprosy be confounded? Give the differential diagnosis of the diseases mentioned.



- 3.—Describe the provisions of the model bye-laws of the Local Government Board for the regulation of (a) houses let in lodgings, and (b) common lodging houses.
- 4.—Under what law may a Sanitary Authority make bye-laws for the regulation of the public milk supply? Give an outline for a set of such bye-laws.
- 5.—What legal provisions bear on the sanitary condition of schools and the health of scholars? Do these place any special duty or responsibility on the Medical Officer of Health, and, if so, what?
- 6.—What is the statutory law with regard to sewers and drains, and what is the duty of (a) the Medical Officer of Health and (b) the Inspector of Nuisances in this matter?

(Every question must be answered.)

### Comparative Pathology.

Professor MURRAY, *Examiner*.

- 1.—Describe the part played by drinking water in the distribution of pathogenic bacteria, and the preventive measures which may be adopted.
- 2.—Give an account of the bacteria which may be concerned in the production of infective endocarditis in man and lower animals.
- 3.—Describe the various forms of the malarial parasite which occur in man, and give an account of its life-history.
- 4.—What lesions are produced by the glanders bacillus in the horse? How can you distinguish this bacillus from other pathogenic bacteria?
- 5.—How is blood-serum prepared and used as a nutrient medium for the growth of bacteria?
- 6.—Discuss the bacteriology of sapræmia, septicæmia, and pyæmia.

(Every question must be answered.)

### Sanitary Chemistry and Physics.

Professors BEDSON and STROUD, *Examiners*.

- 1.—What experiments would you make to test the efficiency of the ventilation of a building?
- 2.—Describe two methods which may be used to test the purity of a water supply.



- 3.—What are the causes of the temporary and permanent hardness of natural waters?
- 4.—What is meant by the transference of heat by convection currents? Describe and explain the process, and give examples of its use.
- 5.—A litre of dry air at  $0^{\circ}\text{C}$ . and 760 mm. pressure, weighs 1.29 grams. The specific gravity of aqueous vapour compared with air =  $\frac{8}{9}$ . Determine the weight of a litre of atmospheric air, the temperature being  $20^{\circ}\text{C}$ ., pressure = 750 mm., dew point =  $10^{\circ}\text{C}$ . Given the maximum pressure of aqueous vapour at  $10^{\circ}\text{C}$ . = 9 mm.
- 6.—Discuss the variation with depth of the pressure due to the weight of liquids.

Two liquids have their surfaces exposed to the same air pressure. Describe an experiment by means of which the depths below the surfaces, at which the pressures are alike, may be compared.

(Every question must be answered.)

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### Practical Hygiene, Climatology, Meteorology, etc., and Vital Statistics.

Professor PHILIPSON and Dr. H. E. ARMSTRONG, *Examiners*.

- 1.—At what seasons of the year are the following diseases most prevalent :—Typhus fever, diarrhoea, and pneumonia? How does the age of the patient affect the prognosis in these diseases?
- 2.—Discuss the question of the influence of climate on the prevalence of phthisis, ague, and yellow fever.
- 3.—What are the ordinary ranges of mortality to (a) population, and (b) cases of sickness, from each of the following causes, viz. :—Phthisis, respiratory diseases, heart diseases, cancer, small-pox (natural and modified), scarlet fever, enteric fever, diphtheria, measles? To what conditions are those ranges principally due?
- 4.—Describe a good system of house drainage.
- 5.—Describe and criticise the bacteriological treatment of sewage.
- 6.—Give a rough sketch and explain the details of a hospital for infectious diseases for a population of 100,000.

(Every question must be answered.)



# CERTIFICATE OF PROFICIENCY OR REGISTRATION EXAMINATION IN GENERAL EDUCATION.

MARCH, 1899.

## English.—The Merchant of Venice.

1.—Explain the following :—

- (a) And see my wealthy Andrew doped in sand.
- (b) What think you of the Scottish lord his neighbour?  
This is the reading of the Quartos. The Folio changes  
"Scottish" to "other." Why?
- (c) Upon the Rialto.
- (d) That slew the Sophy.
- (e) Black Monday.
- (f) It was my turquoise ; I had it of Leah.
- (g) 'Tis to peize the time.
- (h)       Look, how the floor of heaven  
Is thick inlaid with patines of bright gold.

2.—Give the meanings of :—Argosy, eanling, fill-horse, gaberdine, doit, cater-cousin, sultan, wis, tucket.

3.—What different stories are combined in this play ? From whence did Shakespeare get them ? Discuss Shakespeare's method of handling his material.

4.—Parse each word in :—

Past all expressing. It is very meet  
The Lord Bassanio live an upright life.

5.—Analyse :—

"Broad and low down, where late the sun had been,  
A wealth of orange-gold was thickly shed,  
Fading above into a field of green,  
Like apples ere they ripen into red ;  
Then to the height a variable hue  
Of rose and pink and crimson freak'd with blue,  
And olive-border'd clouds o'er lilac led."

6.—Write a short essay on *either* the character of Shylock *or* that of Portia



## Virgil and Latin Grammar.

1.—Translate:—

(a) At manus interea . . . . .  
equos ad moenia vertunt.—VIRG. AEN. xi., 597-619.

(b) Forte sacer Fauno . . . . .  
cassa in vota vocavit.—VIRG. AEN. xii., 766-780.

2.—Parse iusso, edice, arrectae, diripuere, exosa. Give the principal parts of frango, desilio, dirigo, paciscor, discindo.

3.—Decline vis, genu, idem. Give the imperative passive of monere and audire and the future indicative of fio.

4.—Translate into Latin:—

(a) He asked us not to do these things.

(b) He says Balbus will be sent to build a wall.

(c) Tell me to whom you gave it.

(d) He has more money than wisdom.

(e) I will come if I can.

5.—Translate:—

Accipe colloquium gelido Nasonis ab Istro,  
Attice, iudicio non dubitande meo.  
Ecquid adhuc remanes memor infelicis amici?  
Deserit an partes languida cura suas?  
Non ita di tristes mihi sunt ut credere possim  
Fasque putem iam te non meminisse mei.  
Ante meos oculos tua stat, tua semper imago est,  
Et videor vultus mente videre tuos.  
Seria multa mihi tecum collata recordor:  
Nec data iucundis tempora pauca iocis.  
Saepe citae longis visae sermonibus horae:  
Saepe fuit brevior, quam mea verba, dies.

## Arithmetic.

1.—In a measured mile there stand 140 posts, at equal distances. The first stands 7 inches from the beginning of the mile, the last 3 yards from the end. Determine their distance apart.

2.—From 31.15 subtract .09968, and divide the result by .09968.

3.—Express as a vulgar fraction in its lowest terms .0207792.

4.—Reduce  $\frac{1}{21}$ ,  $\frac{1}{22}$ ,  $\frac{1}{24}$ ,  $\frac{1}{25}$ ,  $\frac{1}{26}$ ,  $\frac{1}{27}$  to circulating decimals, and add them together in that form.

5.—Simplify  $\frac{1\frac{1}{2}}{\frac{5}{9}} + \frac{2\frac{2}{3}}{6\frac{4}{11}} + \frac{3\frac{2}{5} \times 2\frac{1}{2}}{9\frac{1}{3} \times 3\frac{3}{2}} + \frac{11}{20}$ .



- 6.—Find the number which to four places of decimals most nearly represents the square root of  $4\frac{4}{17}$ .
- 7.—Determine what fraction 50 square yards 4 square feet 85 square inches is of 1 acre.
- 8.—Multiply £581 13s.  $4\frac{1}{2}$ d. by 622.
- 9.—Find, by practice, the value of 3 tons 7 cwt. 1 qr. 11 lbs. at £1 17s. 4d. a cwt.
- 10.—How many examination papers, each  $8\frac{3}{4}$  inches by  $5\frac{1}{2}$  inches, would be required to completely cover the walls of a room 19 feet 5 inches long, 17 feet 4 inches wide, and 9 feet 2 inches high?
- 11.—Find the present worth of £830, due 3 years 3 months hence, reckoning  $2\frac{3}{4}$  per cent. per annum simple interest.
- 12.—Find the compound interest on £830 for 3 years at  $2\frac{3}{4}$  per cent. correct to the nearest penny.

### Algebra.

- 1.—Find the value of  $\sqrt{a^3c} + \sqrt[3]{ad^2} - \frac{ab}{cd}$ ; when  $a = -13\frac{1}{2}$ ,  $b = \frac{4}{9}$ ,  $c = -\frac{2}{3}$ ,  $d = -4$ .
- 2.—Break up into factors:—  
 $x^2 - 7x + 10$ ,  $x^5 - y^5$ ,  $x^5 + y^5$ ,  $a^2 - b^2 - 4c^2 - 4bc - 2a + 1$ .
- 3.—Find the G.C.M. of:—  
 $2x^3 + 4x^2 - 7x - 14$  and  $6x^3 - 10x^2 - 21x + 35$ .
- 4.—Remove the brackets from:—  
 $a - 2(b - 3c) + 3\{(a - 4b) - 2[4c - 3a - (a + b)]\}$ .
- 5.—Simplify:—  
 (a)  $\frac{1}{a^3 + b^3} \div \left[ \frac{b}{2} \left( \frac{1}{a + b} + \frac{1}{a - b} \right) \times \frac{a^2 - b^2}{a^2b + ab^2} \right]$ ;  
 (b)  $\frac{x^2 - 3x - 4}{x^2 - 4x - 5}$ .
- 6.—Add the fractions:—  
 $\frac{bc}{a(a^2 - b^2)(a^2 - c^2)} + \frac{ca}{b(b^2 - c^2)(b^2 - a^2)} + \frac{ab}{c(c^2 - a^2)(c^2 - b^2)}$ .
- 7.—Multiply:—  
 $x^2 + (2a + 3b)x + 6ab$  by  $x^2 - (2a + 3b)x + 6ab$ .
- 8.—Simplify:—  
 $(a + b + c)(x + y + z)(b + c - a)(y + z - x)$   
 $+ (c + a - b)(z + x - y) + (a + b - c)(x + y - z).$



9.—Solve the equations:—

$$(a) \left(x + \frac{5}{2}\right) \left(x - \frac{3}{2}\right) - (x - 5)(x - 3) + \frac{3}{4} = 0.$$

$$(b) \begin{aligned} x + y + z &= a + b + c, \\ ax + by + cz &= bc + ca + ab, \\ (c - a)x + (a - b)y + (b - c)z &= 0. \end{aligned}$$

10.—At what time between 3 and 4 o'clock will the long hand of a clock be just one minute in advance of the short hand?

### Euclid I., II., III.

1.—Define line, plane, obtuse-angled triangle, quadrilateral. Show that every quadrilateral must have at least one obtuse angle, and at least one acute angle.

2.—Prove that if two angles of a triangle be equal to one another, the sides also which subtend, or are opposite to, the equal angles, will be equal to one another.

Explain what is meant by a proof by reductio ad absurdum.

3.—Prove that if two triangles have two angles of the one equal to two angles of the other, each to each, and one side equal to one side, namely, either the sides adjacent to the equal angles, or sides which are opposite to equal angles in each, then shall the other sides be equal, each to each, and also the third angle of the one equal to the third angle of the other.

4.—Prove that no two straight lines drawn from the extremities of the base of a triangle to the opposite sides can possibly bisect each other.

5.—Prove that parallelograms on the same base, and between the same parallels, are equal to one another.

State clearly the reason for the fact by means of which the simplest case is demonstrated.

6.—Prove that if the square described on one of the sides of a triangle be equal to the squares described on the other two sides of it, the angle contained by these two sides is a right angle.

In a quadrilateral ABCD, the side AB = 35, BC = 23, CD = 14, DA = 12. Show that the angle at A must be less than a right angle.

7.—If O be the middle point of the straight line AB, prove that the squares on AP and PB are together double of the squares on AO and OP, wherever P may be.

8.—Prove that if in a circle two straight lines AC, BD cut one another, which do not both pass through the centre, they do not bisect one another.



If BD bisects AC in E, E being a point of trisection of BD, and the inclination of AC, BD is half a right angle; prove (by means of subsequent propositions) that ABCD is a semi-circle.

9.—Prove that the straight line drawn at right angles to the diameter of a circle from the extremity of it, falls without the circle; and no straight line can be drawn from the extremity, between that straight line and the circumference, so as not to cut the circle.

10.—Prove that if a straight line touch a circle, and from the point of contact a straight line be drawn cutting the circle, the angles which this line makes with the line touching the circle will be equal to the angles which are in the alternate segments of the circle.

Show that if two circles touch each other, any straight line drawn through the point of contact will cut off similar segments from the two circles.

### Greek.

1.—Translate :—

(a) Τῇ δ' ἐπιούσῃ ἡμέρᾳ Ξενοφῶν . . . . .  
πρὸς ἑαυτὸν ἀεὶ ἐλάμβανεν.—XEN. ANAB., book IV.,  
ch. 5, 30-33.

(b) Ἐπὶ τούτοις πιστὰ δόντες καὶ . . . . .  
εἶχον δὲ καὶ σαγάρεις σιδηρᾶς.—XEN. ANAB., book  
V., ch. 4, 11-14.

2.—Parse :—ἐμβαίημεν, παρεληλυθότας, ἀντιτετάχεται, κατα-  
λαβείν, ἀπέδωσαν.

3.—(a) Give the genitive singular and dative plural of πόλις,  
βασιλεύς, κέρας, πατήρ, ὕδωρ.

(b) Give the first person singular of the future, aorist, and  
perfect indicative active of λαμβάνω, βάλλω αἰρέω, ὁράω,  
ἰκνέομαι.

4.—Translate into Greek :—

(a) I do not fear such a thing happening.

(b) He went to Athens in order that he might see the city.

(c) If you had been here, you would have seen the general.

(d) What I do not know I do not think that I know.



## 5.—Translate :—

Οἶδα δέ ποτε αὐτὸν καὶ Κρίτωνος ἀκούσαντα, ὥς χαλεπὸν ὁ βίος Ἀθήνησιν εἶη ἀνδρὶ βουλομένῳ τὰ ἑαυτοῦ πράττειν· “Νῦν γὰρ,” ἔφη, “ἐμέ τινες εἰς δίκας ἄγουσιν, οὐχ ὅτι ἀδικοῦνται ὑπ’ ἐμοῦ, ἀλλ’ ὅτι νομίζουσιν ἥδιον ἂν με ἀργύριον τελέσαι ἢ πράγματα ἔχειν.” Καὶ ὁ Σωκράτης, “Εἰπέ μοι,” ἔφη, “ὦ Κρίτων, κύνας δὲ τρέφεις, ἵνα σοι τοὺς λύκους ἀπὸ τῶν προβάτων ἀπερύκωσι;” “Καὶ μάλα,” ἔφη· “μᾶλλον γάρ μοι λυσιτελεῖ τρέφειν ἢ μή.” “Οὐκ ἂν οὖν θρέψαις καὶ ἄνδρα, ὅστις ἐθέλοι τε καὶ δύναιτό σου ἀπερύκειν τοὺς ἐπιχειροῦντας ἀδικεῖν σε;” “Ἡδέως γ’ ἂν,” ἔφη, “εἰ μὴ φοβοίμην, ὅπως μὴ ἐπ’ αὐτόν με τράποιτο.”

French.—De Staël, *Le Directoire*.\*

## 1.—Translate into English :—

(a) Le pays qui a été le théâtre . . . . .  
la nécessité de transiger avec elles.—p. 9.

(b) Le sortilège le plus puissant dont . . . . .  
saurons combattre les Jacobins et vous.—p. 74.

(c) Jusque-là, le docteur Chassaigne s'était tenu à l'écart, immobile et muet, comme s'il eût voulu laisser les faits seuls agir sur Pierre. Brusquement, il se pencha, pour lui dire à demi-voix : Les plaies apparentes, les plaies apparentes . . . Ce monsieur ne se doute pas qu'aujourd'hui nos savants médecins soupçonnent beaucoup de ces plaies d'être d'origine nerveuse. Oui, l'on découvre qu'il y aurait là simplement une mauvaise nutrition de la peau. Ces questions de la nutrition sont encore si mal étudiées ! . . . Et l'on arrive à prouver que la foi qui guérit peut parfaitement guérir les plaies, certains faux lupus entre autres. Alors, je vous demande quelle certitude il obtiendrait, ce monsieur, avec sa fameuse salle des plaies apparentes ! Un peu plus de confusion et de passion dans l'éternelle querelle . . . Non, non ! la science est vaine, c'est la mer de l'incertitude.

## 2.—Translate into French :—

When General Bonaparte was made Consul, what was expected of him was peace. The nation was wearied with its long struggle, and certain by then of obtaining its inde-



pendence it only wished for rest. Certainly it took the wrong way to get it. However, the First Consul made some advances with a view to an understanding with England, but the then Government declined them. Perhaps it was wrong, for two years later, when Bonaparte had already secured his power by the victory at Marengo, the English Government found itself under the necessity of signing the treaty of Amiens, which in all respects was more disadvantageous than what might have been got at a moment when Bonaparte desired a new success—peace with England.

- 3.—Explain and illustrate the constructions in French after verbs  
(a) of fearing ; (b) of doubting.

### German.—Kohlrausch, Das Jahr 1813.\*

- 1.—Translate :—

Im Norden bildete den Mittelpunkt der römischen Stellung östlich von Viroconium das Lager der neunten spanischen Legion in Lindum (Lincoln). Zunächst mit deisem berührte sich in Nordengland das mächtigste Fürstenthum der Insel, das der Briganten (Yorkshire); es hatte sich nicht eigentlich unterworfen, aber die Königin Cartimandus suchte doch mit den Eroberern Frieden zu halten und erwies sich ihnen gefügig. Die Partei der Römerfeinde hatte hier im J. 50 loszuschlagen versucht, aber der Versuch war rasch unterdrückt worden. Caratacus, im Westen geschlagen, hatte gehofft seinen Widerstand im Norden fortführen zu können, aber die Königin lieferte ihn, wie schon gesagt ward, den Römern aus. Diese inneren Zwistigkeiten und häuslichen Händel müssen dann in dem Aufstand gegen Paullinus, bei dem wir die Briganten in einer führenden Stellung fanden und der eben die Legion des Nordens mit seiner ganzen Schwere traf, mit im Spiel gewesen sein. Indess war die römische Partei der Briganten einflussreich genug, um nach Niederwerfung des Aufstandes die Wiederherstellung des Regiments der Cartimandus zu erlangen.

- 2.—Translate :—

In dem ältern war noch eine äussere Zucht gewesen, welche vielen Ausbrüchen der Rohheit in den Gemeinen einen Zügel anlegte, wenn auch die Anführer im Grossen viele Ungerechtigkeiten verübten. Jetzt aber, vielleicht um den jungen Soldaten Lust am Kriege einzuflössen, sahen die Befehlenden gleichgültig auf ihre Ausschweifungen hin. Das Dorf, in



dessen Nähe sie ihr Nachtlager hielten, wenn auch der Kaiser selbst seine Wohnung darin hatte, war am andern Morgen anzusehen, als von einer Räuberbande verheert. Da waren die Thüren und Fenster ausgebrochen, die Schränke und Kisten zerschlagen und ausgeleert, die besten Geräthe zu den Feuern geschleppt und verbrannt. Und von vielem Glücke hatte ein solcher Ort zu sagen, wenn er nicht dazu durch Unvorsichtigkeit oder Muthwillen gänzlich ein Raub der Flammen wurde. Es ist ein entsessliches Wort welches die französischen Anführer, als die einzige Rechtfertigung hinwarfen, wenn bittere Klagen über die unerhörten Ausschweifungen ihres Heeres vor sie kamen; es war nur das eine Wort ihres Kaisers, welches er einest den flehenden Bürgern in Jena, die um das Ende der Plünderung ihrer Stadt mit Thränen vor ihm standen, mit gefühllosen Achselzucken erwiderte: "Das ist der Krieg."—p. 11.

3.—Translate:—

(a) Voran zogen die Garden, auf deren Rettung am meisten ankam.—p. 79.

(b) Die Oestreicher unter Bubna, die in der Nähe standen, nahmen nicht so bald die Absicht wahr, als sie sich eiligst schwenkten und dem verderblichen Stosse kühn entgegenwarfen.—p. 76.

(c) "Er sei nicht mehr Herr seiner Kriegsschaar; sie versage ihm den Gehorsam und habe sich in sich selbst aufgelöst."—p. 50.

(d) Man liess ihn ruhig herüber.—p. 36.

(e) Schon auf zwei Meilen waren sie nahe gekommen.

—p. 35.

4.—Translate into German:—

My Lord,—I send you my correspondence with the Bashaw of Tripoli, and your Lordship will observe that he is, as usual, most friendly disposed towards us; that during the time of Buonaparte's success in Egypt he gave up to me, as prisoners, the French consul, and every Frenchman in his dominions, amounting to fifty-seven, and that his arsenal was always open for the supply of our ships. I have not thought it, however, proper to notice his indirect application for gunpowder and grape shot, on account of his war with the Americans, without the approbation of Government.

5.—State the gender of:—Bereich, Bericht, Nachricht, Bedacht, Andacht, Langmut, Edelmut, Paradies, Finsterniss, Schauer.



### Geography.

- 1.—What are the most important coal-fields in England?
- 2.—Give a list of the chief ports of Scotland, stating their exact situation.
- 3.—Enumerate the chief bays on the south and east coasts of Ireland.
- 4.—Through what towns does the London and South-Western railway pass between London and Devonport?
- 5.—Draw a sketch map of India, marking the course of the Ganges, and the position of Delhi, Madras, Golconda, Peshawur, Scinde, the Vindhya Mountains, and Mount Everest.
- 6.—Give a list of the chief industries and the chief manufacturing towns of India.
- 7.—Enumerate the French possessions in India.
- 8.—In what provinces are Calcutta, Surat, Tanjore, Lucknow, Mandalay?
- 9.—What do you know of Hong Kong, Fusi Yama, Asama Yama, Agulhas, Guardafui?
- 10.—What are the chief currents in the Atlantic ocean?

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### English History.

1689–1760.

- 1.—How far was William III's domestic policy affected by the exigencies of his position in Europe?
- 2.—When and how did the Cabinet make its first appearance in English history? What is its place in the constitution?
- 3.—What concessions were made to Scotland in order to secure its acceptance of the Act of Union?
- 4.—What were the events which led to the war of the Spanish Succession?
- 5.—Describe the battle of Blenheim, illustrating your answer by a plan.
- 6.—What were the causes of the downfall of the Duke and Duchess of Marlborough?
- 7.—Describe the rising of 1715 and account for its failure.
- 8.—Give some account of Walpole's system of government.
- 9.—Sketch the character and career of the Duke of Newcastle.
- 10.—Give some account of Plassy and its results.



### Scripture History.

- 1.—Describe Solomon's temple.
- 2.—State the cause which led to the disruption of the kingdom.
- 3.—Discuss the policy of Ahab.
- 4.—What do we learn from the books of the Kings concerning Shimei, Hadad, Hiel, Jehu the son of Hanani, Hazael, Ashtoreth, Moab?
- 5.—Give an account of the reformation under Hezekiah.
- 6.—Explain carefully with reference to the context :—
  - (a) He calleth them the land of Cabul.
  - (b) Take with thee ten loaves and cracknels.
  - (c) Let not him that girdeth on his harness boast himself as he that putteth it off.
  - (d) My head, my head.
  - (e) Bring forth vestments for all the worshippers of Baal.
  - (f) He brought forth the king's son . . . and gave him the testimony.
  - (g) I will wipe Jerusalem as a man wipeth a dish.
- 7.—Compare the careers and characters of Elijah and Elisha.
- 8.—What were the events of the reign of Jehoiachin?

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## PRELIMINARY EXAMINATION IN ARTS FOR GRADUATION IN MEDICINE AND SCIENCE.

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MARCH, 1899.

### Greek.—Xenophon. Anabasis I.

- 1.—Translate :—

(a) Ἐνταῦθα Κύρῳ βασιλεία ἦν καὶ παράδεισος μέγας ἀγρίων θηρίων πλήρης, ἃ ἐκεῖνος ἐθήρευεν ἀπὸ ἵππου, ὁπότε γυμνάσαι βούλοιτο ἑαυτόν τε καὶ τοὺς ἵππους. Διὰ μέσου δὲ τοῦ παραδείσου ῥεῖ ὁ Μαίανδρος ποταμός· αἱ δὲ πηγαὶ αὐτοῦ εἰσιν ἐκ τῶν βασιλείων· ῥεῖ δὲ καὶ διὰ τῆς Κελαινῶν πόλεως. Ἔστι δὲ καὶ μεγάλου



βασίλεως βασιλεία ἐν Κελαιναῖς ἐρυννὰ ἐπὶ ταῖς πηγαῖς τοῦ Μαρσίου ποταμοῦ ὑπὸ τῇ ἀκροπόλει· ῥεῖ δὲ καὶ οὗτος διὰ τῆς πόλεως καὶ ἐμβάλλει εἰς τὸν Μαϊάνδρον· τοῦ δὲ Μαρσίου τὸ εὖρος εἴκοσι καὶ πέντε ποδῶν. Ἐνταῦθα λέγεται Ἀπόλλων ἐκδεῖραι Μαρσύαν νικήσας ἐρίζοντά οἱ περὶ σοφίας καὶ τὸ δέρμα κρεμάσαι ἐν τῷ ἄντρῳ, ὅθεν αἱ πηγαί· διὰ δὲ τοῦτο ὁ ποταμὸς καλεῖται Μαρσύας.—Ch. ii. §§ 7, 8, 9.

(b) Ἄνδρες, ἐάν μοι πεισθῇτε, οὔτε κινδυνεύσαντες οὔτε πονήσαντες τῶν ἄλλων πλέον προτιμήσεσθε στρατιωτῶν ὑπὸ Κύρου. Τί οὖν κελεύω ποιῆσαι; Νῦν δεῖται Κῦρος ἔπεσθαι τοὺς Ἕλληνας ἐπὶ βασιλέα· ἐγὼ οὖν φημι ὑμᾶς χρῆναι διαβῆναι τὸν Εὐφράτην ποταμόν, πρὶν δῆλον εἶναι, ὅ τι οἱ ἄλλοι Ἕλληνες ἀποκρινοῦνται Κύρῳ. Ἦν μὲν γὰρ ψηφίσωνται ἔπεσθαι, ὑμεῖς δόξετε αἵτιοι εἶναι ἄρξαντες τοῦ διαβαίνειν, καὶ ὡς προθυμοτάτοις οὔσιν ὑμῖν χάριν εἴσεται Κῦρος καὶ ἀποδώσει· ἐπίσταται δ' εἴ τις καὶ ἄλλος· ἦν δ' ἀποψηφίσωνται οἱ ἄλλοι, ἅπιμεν ἅπαντες τοῦμπαλιν, ὑμῖν δὲ ὡς μόνοις πειθομένοις πιστοτάτοις χρήσεται καὶ εἰς φρούρια καὶ εἰς λοχαγίας, καὶ ἄλλου οὔτινος ἂν δέησθε· οἶδα ὅτι ὡς φίλοι τεύξεσθε Κύρου.—Ch. iv. §§ 14, 15.

(c) Καὶ ἤδη τε ἦν ἀμφὶ ἀγορὰν πλήθουσαν καὶ πλησίον ἦν ὁ σταθμός, ἔνθα ἔμελλε καταλύειν, ἡνίκα Πατηγύας, ἀνὴρ Πέρσης τῶν ἀμφὶ Κῦρον πιστῶν, προφαίνεται ἐλαύνων ἀνὰ κράτος ἰδροῦντι τῷ ἵππῳ καὶ εὐθὺς πᾶσιν, οἷς ἐνετύγχανεν, ἐβόα καὶ βαρβαρικῶς καὶ Ἑλληνικῶς, ὅτι βασιλεὺς σὺν στρατεύματι πολλῷ προσέρχεται ὡς εἰς μάχην παρεσκευασμένος. Ἐνθα δὴ πολὺς τάραχος ἐγένετο. αὐτίκα γὰρ ἐδόκουν οἱ Ἕλληνες καὶ πάντες δὲ ἀτάκτοις σφίσιν ἐπιπεσεῖσθαι.—Ch. viii. §§ 1, 2.

2.—Parse :—μαχεῖται, γυμνάσαι, ἐχρήτο, ἀποβιβάσειεν, ἤκωσι, περδικες, πολλαχῇ, κρείττους, ἀμαξῶν, δεδομένοι.



- 3.—Give the principal parts of λαμβάνω, γίγνομαι, βαίνω, ὑπισχνέομαι. Compare δυνατός, μέγας, φίλος, ὑποδεής.
- 4.—Give the genitive singular and dative plural of κέρας, εὐδαίμων, κέρδος; and give the meaning of the prepositions in ἀπαγγέλλειν, διαβατός, μετεπέμπετο. ἀνέστη.

### Latin.—Cicero De Amicitia.

- 1.—Translate :—

(a) Ego vero non gravarer, si mihi ipse confiderem; nam et praeclara res est et sumus, ut dixit Fannius, otiosi. Sed quis ego sum? aut quae est in me facultas? doctorum est ista consuetudo, eaque Graecorum, ut iis ponatur, de quo disputent quamvis subito; magnum opus est egetque exercitatione non parva. Quam ob rem, quae disputari de amicitia possunt, ab eis censeo petatis, qui ista profitentur; ego vos hortari tantum possum, ut amicitiam omnibus rebus humanis anteponatis; nihil est enim tam naturae aptum, tam conveniens ad res vel secundas vel adversas. Sed hoc primum sentio, nisi in bonis amicitiam esse non posse; neque id ad vivum reseco, ut illi, qui haec subtilius disserunt, fortasse vere, sed ad communem utilitatem parum; negant enim quemquam esse virum bonum nisi sapientem. Sit ita sane; sed eam sapientiam interpretantur, quam adhuc mortalis nemo est consecutus, nos autem ea, quae sunt in usu vitaeque communi non ea, quae finguntur aut optantur, spectare debemus.

(b) Quodsi in scaena, id est in contione, in qua rebus fictis et adumbratis loci plurimum est, tamen verum valet, si modo id patefactum et inlustratum est, quid in amicitia fieri oportet, quae tota veritate perpenditur? in qua nisi ut dicitur, apertum pectus videas tuumque ostendas, nihil fidum, nihil exploratum habeas, ne amare quidem aut amari, cum, id quam vere fiat, ignores. Quamquam ista adsentatio, quamvis pernicioosa sit, nocere tamen nemini potest nisi ei, qui eam recipit atque ea delectatur. Ita fit, ut is adsentatoribus patefaciat aures suas maxime, qui ipse sibi adsentetur et se maxime ipse delectet. Omnino est amans sui virtus; optime enim se ipsa novit, quamque amabilis sit, intellegit. Ego autem non de virtute nunc loquor, sed de virtutis opinione. §§ 97–98.

- 2.—Translate, and explain the construction of the words in italics :

(a) Hactenus mihi videor de amicitia quid *sentirem* potuisse dicere.



(b) Suis autem *incommodis* graviter angi non amicum sed se ipsum amantis est.

(c) Cum enim saepe mecum ageres ut de amicitia *scriberem* aliquid, digna mihi res cum omnium cognitione tum nostra *familiaritate* visa est.

(d) Est etiam quaedam calamitas in amicis *dimittendis* nonnumquam necessaria.

3.—Parse :—Fiant, contracta, ineunte, lubentius, alteri, genere.

4.—Give the principal parts of deligo, accipio, eluceo, concedo, vivo, vereor ; and compare utilis, difficilis, beneficus, gloriose.

### French.—Un Philosophe Sous les Toits.

1.—Translate :—

(a) Mais le mouvement et la succession des objets *viennent* la distraire. Voici le pont du Val encadré dans son merveilleux paysage : à droite, Paris avec ses grands monuments qui découpent la brume ou étincellent au soleil ; à gauche, Meudon avec ses villas, ses bois, ses vignes, et son château royal ! Les deux ouvrières vont d'une portière à l'autre en jetant des cris d'admiration. Nos compagnons de voyage rient de cette surprise enfantine ; moi je me *sens* attendri, car j'y vois le témoignage d'une longue et monotone réclusion ; ce sont des prisonnières du travail qui ont retrouvé, pour quelques heures, l'air et la liberté.

(b) Mais à Paris rien n'est durable : le flot de la vie roule des destinées comme des algues détachées du rocher ; les demeures sont des vaisseaux qui ne reçoivent que des passagers. Combien de visages différents j'ai déjà vus traverser ce long corridor de nos mansardes ! Combien de compagnons de quelques jours *disparus* pour jamais ! Les uns sont allés se perdre dans cette mêlée de vivants, qui tourbillonne sous le fouet de la nécessité : les autres dans cette litière de morts qui dorment sous la main de Dieu. Pierre le relieur est un de ces derniers. Retiré dans son égoïsme, il était resté sans famille, sans amis ; il est mort seul comme il avait vécu. Sa perte n'a été pleurée de personne, n'a rien dérangé dans le monde ; il y a eu seulement une fosse *remplie* au cimetière, et une mansarde vide dans notre faubourg.

(c) Je demande si on a fait venir un médecin.—Ah bien, oui ! répond Pierre brusquement ; faudrait avoir pour ça de l'argent de poche, et le pays n'a que des dettes pour économies.—Mais vous, dis-je un peu étonné, n'êtes-vous



point son ami?—Minute! interrompt le relieur; ami comme le limonier est ami du porteur, à condition que chacun tirera la charrette pour son compte, et mangera à part son picotin.—Vous ne comptez point, pourtant, le laisser privé de soins?—Bah! il peut garder tout le lit jusqu'à demain, vu que je suis de bal.—Vous le laissez seul?—*L'aurait-il donc manquer une descente de courtille parce que le pays a la tête brouillée?*

- 2.—Parse the words in italics. If verbs, give their principal parts (viz., first singular present and preterite tenses, present and past participles).
- 3.—Give the plural of *son*, *château royal*, *ce travail*, *votre neveu*; the feminine of *triste*, *chrétien*, *protecteur*, and the meaning and gender of *allumette*, *larme*, *fleur*, *linge*.
- 4.—Give the French for:—  
 He spoke without thinking.  
 Bring me ink, pens and paper.  
 Which of these rooms is the larger?  
 She has not yet arrived, she will be here in a quarter of an hour.  
 Buy me some large sheets of brown paper, if you can get any.
- 5.—Write out the present indicative and subjunctive of *rompre* and *s'en aller*.

— — —

### German.—Die Karavane.

- 1.—Translate:—

(a) Der König war sehr erstaunt über diese Nachricht, liess sich die Goldaustheilungen des kleinen Muck erzählen und die Verschworenen brachten ihm leicht den Verdacht bei, dass Muck auf irgend eine Art das Geld aus der Schatzkammer gestohlen habe. Sehr lieb war diese Wendung der Sache dem Schatzmeister, der ohnehin nicht gerne Rechnung ablegte. Der König gab daher den Befehl, heimlich auf alle Schritte des kleinen Muck Acht zu geben, um ihn wo möglich auf der That zu ertappen. Als nun in der Nacht, die auf diesen Unglückstag folgte, der kleine Muck, da er durch seine Freigebigkeit seine Kasse sehr erschöpft sah, den Spaten nahm in den Schlossgarten schlich, um dort von seinem geheimen Schatze neuen Vorrath zu holen, folgten ihm von Weitem die Wachen und da er das Gold aus dem Topf in sein Mantel einlegen wollte fielen sie über ihn her banden ihn und führten ihn so gleich vor den König.



(b) Schöne Säulen ragten unter den Trümmern hervor, mehrere Gemächer, die noch ziemlich erhalten waren, zeugten von der ehemaligen Pracht des Hauses. Plötzlich blieb der Storch Mansor stehen. "Herr und Gebieter," flüsterte er leise, "wenn es nur nicht thöricht für einen Grossvezier, noch mehr aber für einen Storch wäre, sich vor Gespenstern zu fürchten, mir ist ganz unheimlich zu Muth, denn hier neben hat es ganz vernehmlich geseufzt und gestöhnt."

(c) "Es thut mir Leid, Fremdling," sagte er, "dass ich dich für jenes Ungeheuer hielt, schreibe es aber einer sonderbaren Fügung des Himmels zu, die dich gerade in der Stunde, welche dem Untergang des Verruchten geweiht war, in die Hände meiner Brüder führte." Mein Bruder bat ihn um die einzige Gunst, ihn gleich wieder weiter reisen zu lassen, weil jeder Aufschub ihm verderblich werden könne. Der Starke erkundigte sich nach seinen eiligen Geschäften, und überredete ihn diese Nacht in seinem Zelt zu bleiben, er und sein Ross werden der Ruhe bedürfen; den folgenden Tag aber wolle er ihm einen Weg zeigen, der ihn in anderthalb Tagen nach Balsora bringe.

2.—Express in German :—

- (a) Children, obey your parents.
- (b) On the next day, in order to escape from danger, they fled from the country.
- (c) It gives me great pleasure to accept your invitation.
- (d) Although he was poor, he was happy because he had many kind friends.

3.—Put into German and decline throughout :—Cold water, that old castle, his younger sister. Give the principal parts of *denken, werden, ausgehen, schlafen, verfehlen*.

4.—What case do the following prepositions govern :—*Während, über, nach, wegen*; illustrate by examples. Compare the adjectives *schlecht, klug*, and the adverbs *bald, gut*.

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## Mechanics, Hydrostatics, and Pneumatics.

1.—Explain clearly in common language what is meant by velocity at a given instant, acceleration, components of acceleration, force.

When passing through a given point a body is moving with velocity 4 ft./seconds. 3 yards before it reached this point it was moving with a velocity 5 ft./seconds, and 5 yards further on it is afterwards found returning towards the point with a velocity 1 ft./second. Examine whether it may have moved with constant acceleration.



- 2.—Define the weight of a body at a given place. State (1) what observation and (2) what deduction is required in order to determine the exact relation between the mass and the weight.

Two bodies,  $M$ ,  $M'$ , rest on a smooth horizontal table; a cord is attached to them both, and passing through a small hole between them carries a pulley of mass  $m$ , around which it runs freely. Describe the motion that will take place and show that the tension in the cord will be  $\frac{2MM'mg}{m(M + M') + 4MM'}$ .

- 3.—Define the work done by a constant force acting in a fixed straight line upon a particle.

Two equally rough inclined planes of equal height stand back to back; a particle is projected up one of them, just reaches the top, and slides down the other. Show that it reaches the foot with the same velocity as if it had been projected with its original velocity along an equally rough horizontal plane.

- 4.—In the system of pulleys in which a single rope passes round all the pulleys, find the relation between the "power" and "weight" in equilibrium.

A string passes from a fixed point under a movable pulley ( $w$ ), over a fixed pulley, under a second movable pulley ( $W$ ), and is attached to the first movable pulley. All the strings are parallel. Show that if  $w$  descends 1 foot,  $W$  descends 6 inches, and find how great  $w$  must be in order that it may descend of itself.

- 5.—Define a moment. Show that the moment of the resultant of two given forces about any point is equal to the sum of the moments of the components.

Three forces act in the sides of a triangle and are proportional to the sides in which they act; show that if they all act in like sense, they are equivalent to a couple, proportional to twice the area of the triangle.

- 6.—Define the intensity of pressure at any point in a fluid.

A ball tap consists of a rod, 12 inches long and 1 lb. in weight, pivoted at one end, and at the other attached normally to a sphere 6 inches in diameter and 2 lb. in weight, which rests in water; show that it will float with 0.04 of the volume of the sphere immersed, given that a cubic foot of water weighs 1,000 oz.

- 7.—Describe Bramah's press.

If the diameters of the two plungers be as 25 : 1, and the smaller be worked by a lever of mechanical advantage 6, what pressure on the end of this lever is required to produce a pressure of 10 tons in the press?



- 8.—How would you prove that air at rest exerts pressure, and how would you measure what pressure it exerts?

A tube 36 inches long is nearly exhausted of air and is inverted vertically in mercury; when 33 inches of the tube are exposed above the surface of the mercury in the basin, the mercury stands 29 inches high in the tube. Find at what height it will stand when 34 inches of the tube are exposed, the height of a correct barometer at the same time being 30 inches.

### Euclid IV, VI.

(Candidates are required to satisfy in each book.)

- 1.—Inscribe in a given circle a triangle equiangular to a given triangle.

If a circle be inscribed in a triangle and the triangle formed by joining the points of contact be equiangular to the original triangle, that triangle shall be equilateral.

- 2.—Circumscribe a circle to a given square.

Show that the crossed quadrilateral whose alternate sides are equal is inscribable in a circle.

- 3.—Inscribe a regular pentagon in a given circle.

Show that if any regular polygon be inscribed in a circle and a triangle be formed by joining any vertex to two other vertices consecutive to one another, the angles at the base of this triangle are exact multiples of the angle at the vertex and the latter is an exact submultiple of two right angles.

- 4.—Define the equality of ratios.

Show that in equal circles any two arcs are to one another in the same ratio as the angles they subtend at the centre.

- 5.—The sides about the equal angles of triangles which are equiangular to one another are proportionals; and the sides opposite equal angles are homologous.

Enumerate the cases in which Euclid proves two triangles to be similar to one another.

- 6.—Find a mean proportional between two given straight lines.

Describe a circle passing through two given points and touching a given straight line.

- 7.—Similar pentagons may be divided into the same number of similar triangles.

How many data are required in order to prove (a) the similarity, (b) the equality of (i.) two triangles, (ii.) two quadrilaterals.



- 8.—If a triangle be inscribed in a circle and a perpendicular be drawn from the vertex to the base, the rectangle under the sides of the triangle is equal to the rectangle under the perpendicular and the diameter of the circle.

The centre of one circle lies on the circumference of another, and a chord of the second touches the first; show that for different positions of this chord the distances of its extremities from the centre of the first circle are inversely proportional to one another.

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### English History.—William I.—Henry II.

(Where possible give dates.)

- 1.—Describe briefly the steps of William's conquest of England.
- 2.—Give the characteristics of the feudal system, and their most important modifications under our Norman kings.
- 3.—A life of Anselm.
- 4.—What were the possessions in France of the successive sovereigns of this period, and how did they acquire them?
- 5.—Discuss Henry II. as a law-giver.
- 6.—An account of the growth of the towns and their corporate rights in this period.
- 7.—What do you know of the following persons:—Theobald, Robert of Gloucester, John of Oxford, Stigand, Morkere, Carileph?
- 8.—Give dates and short notes upon the following:—Constitution of Clarendon, Domesday Book, Battle of Tenchebray, Battle of the Standards.

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### Logic.

- 1.—Define:—term, abstract term, contrary term, proposition, inference.
- 2.—Give an example of an A, an E, an I, and an O proposition, and draw all possible immediate inferences from each.
- 3.—What terms are connotative and what not? Illustrate by examples.
- 4.—Determine the rules for the third figure of the syllogism, and state all the valid moods in it. Show that an A conclusion is only possible in the first figure.



- 5.—Give an example of a conjunctive (or hypothetical) syllogism.  
What are the rules of such syllogisms?
- 6.—Explain the terms undistributed middle, subaltern genus, a priori, enthymeme. Give examples.
- 7.—Give an example of a syllogism in the second figure, and reduce it to the first.
- 8.—Explain the fallacies :—petitio principii, composition, accident ; and give an example of each.

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Diseases of Women—Dr. CULLINGWORTH.  
Pharmacology and Therapeutics—Dr. MAC-  
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Forensic Medicine and Toxicology—Dr.  
CORY, Dr. COLMAN.  
Pathological Anatomy—Dr. TURNEY and  
Dr. PERKINS.  
Surgical Pathology and Bacteriology—Mr.  
SHATTOCK.  
Botany—Mr. BENNETT.  
Comparative Anatomy and Zoology—Mr.  
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One Open Entrance Scholarship in Anatomy, Physiology, Chemistry (any two), of the value of £50, for Third Year's Students from the Universities.

Four House Physicians, two Assistant House Physicians, four House Surgeons, four Assistant House Surgeons, a Senior and Junior Obstetric House Physician, are selected every three months from Students holding qualifications; two Ophthalmic House Surgeons, one with a salary of £50, and the other provided with a Commons, are also appointed, and Clinical Assistants in the other Special Departments.

H. P. HAWKINS, M.A., M.D. Oxon., *Dean*.

Any further information may be obtained from Mr. RENDLE, *Medical Secretary*, St. Thomas's Hospital, London, S.E.



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## PUPILS' APPOINTMENTS.

Ten House Physicians, each holding office for one year, are appointed by the Physicians. Ten House Surgeons, each holding office for one year, are appointed by the Surgeons.

The Midwifery Assistant holds office for six months, and is appointed by the Physician-Accoucheur. The Extern Midwifery Assistant is appointed every three months.

The Ophthalmic House Surgeon is appointed by the Ophthalmic Surgeons.

All the above Officers receive rooms and a salary of £80 a year.

Two Resident Assistant Chloroformists are appointed annually, both are provided with rooms, and the Senior receives £120 a year, and the Junior £100 a year.

The Clinical Clerks and the Obstetric Clerks, the Clerks to the Out-Patients, the Dressers to the In and Out-Patients, and the Clerks and Dressers in the Special Departments, are chosen from the students. No fee is paid for any of these appointments.

## MEDICAL AND SURGICAL STAFF.

*Physicians*—Dr. Church, Dr. Gee, Sir Dyce Duckworth, Dr. Hensley, Dr. Brunton, F.R.S.

*Assistant Physicians*—Dr. Norman Moore, Dr. S. West, Dr. Ormerod, Dr. Henningham, Dr. Tooth.

*Consulting Surgeons*—Sir J. Paget, Bart., D.C.L., F.R.S., Luther Holden, Esq., Sir Thomas Smith, Bart.

*Consulting Ophthalmic Surgeon*—Mr. Power.

*Surgeons*—Mr. Willett, Mr. Langdon, Mr. Marsh, Mr. Butlin, Mr. Walsham.

*Assistant Surgeons*—Mr. Cripps, Mr. Bruce Clarke, Mr. Bowlby, Mr. Lockwood, Mr. D'Arcy Power.

*Physicians-Accoucheur*—Dr. Champneys, Dr. Griffith.

*Ophthalmic Surgeons*—Mr. Vernon, Mr. Jessop.

*Dental Surgeons*—Mr. Paterson, Mr. Ackery.

## THE COLLEGE.

Students attending the practice of the Hospital, or the lectures in the Medical School, are admitted to residence in the College within the Hospital walls, subject to the College regulations.

Warden of the College—Dr. Calvert.

## LECTURERS.

*Medicine*—Sir D. Duckworth, Dr. Moore.

*Surgery*—Mr. Marsh, Mr. Walsham.

*Descriptive and Surgical Anatomy*—Mr. Bruce Clarke, Mr. Lockwood.

*General Anatomy, Physiology, and Histology*—Dr. Klein, F.R.S.

*Chemistry and Practical Chemistry*—Dr. Chattaway.

*Materia Medica*—Dr. Brunton, F.R.S., Dr. Calvert.

*Midwifery, and the Diseases of Women and Children*—Dr. Champneys.

*Pathological Anatomy*—Dr. Andrewes.

*Botany*—Rev. Geo. Henslow.

*Forensic Medicine*—Dr. Hensley.

*Comparative Anatomy*—Dr. T. W. Shore.

*Ophthalmic Surgery*—Mr. Vernon, Mr. Jessop.

*Public Health*—Sir R. T. Thorne, K.C.B., F.R.S.

## OPEN SCHOLARSHIPS.

Four Scholarships and one Exhibition, respectively worth £150, £75, £75, £50, and £20 each, tenable for one year, will be competed for in September, 1899.

Candidates for these Scholarships must be under twenty-five years of age, and must not have entered to the Medical and Surgical Practice of any London Medical School.

The Shuter Scholarship, value £50, in Anatomy, Physiology and Pharmacology is awarded in July, and is open only to Graduates of the University of Cambridge.

All communications to be addressed to the Warden of the College, St. Bartholomew's Hospital, London, E.C.



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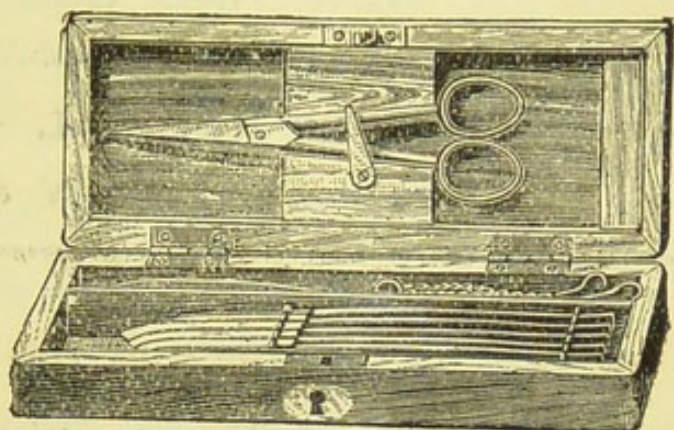
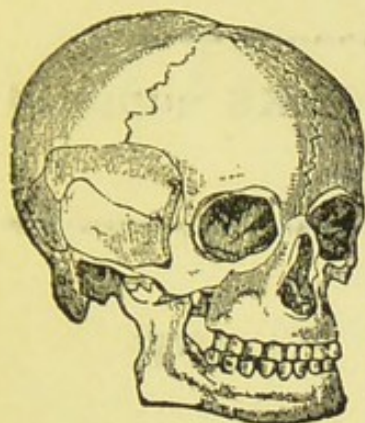
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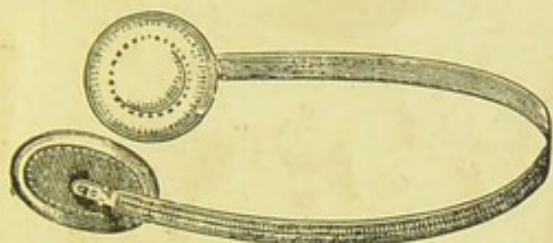


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