CALENDAR OF THE
UNIVERSITY OF
McGILL COLLEGE,
MONTREAL, 1860-61:
WITH THE
EXAMINATION PAPERS.

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1860/61

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BENEFACTORS

OF THE

University of McGill College,

MONTREAL.

THE HONORABLE JAMES McGILL, by his last Will and Testament, under date 8th January, 1811, bequeathed the Estate of Burnside, situated near the City of Montreal, and containing forty-seven Acres of Land, with the Manor House and Buildings thereon erected, and also the sum of ten thousand pounds in money, unto "The Royal Institution for the Advancement of Learning," constituted by Act of Parliament in the Forty-First year of the reign of his Majesty, King George the Third, to erect and establish an University or College for the purposes of education, and the advancement of learning in the Province of Lower Canada, with a competent number of Professors and Teachers to render such Establishment effectual and beneficial for the purposes intended, requiring that one of the Colleges to be comprised in the said University, should be named and perpetually be known and distinguished by the appellation of "McGill College."

The value of the above mentioned property was estimated at the date of the bequest at.....£30,000.

At a meeting called by a number of the influential citizens of Montreal, and held at the Merchants' Exchange, 6th December, 1856, for the purpose of taking into consideration the financial condition of the University of McGill College, —The following Resolution was adopted:—

"That an effort ought to be made for increasing the Endowment of McGill College in such a manner as to extend its usefulness, and to place it for the future upon an independent and permanent footing."

Whereupon in pursuance of the above Resolution, the following Donations were enrolled for Special or General objects connected with the University,—the Royal Institution granting Scholarships in perpetuity according to the value of the Donations.

The Honorable John Molson, Thomas Molson, Esq., William Molson, Esq., for the foundation and maintenance of the Chair of English Language and Literature.	£5,000.
John Gordon Mackenzie, Esq.,	£500.
Ira Gould, Esq.,	500.
John Frothingham, Esq.,	500.
John Torrance, Esq.,	500.
James B. Greenshields, Esq.,	300.
William Busby Lambe, Esq.,	300.
Sir George Simpson, Knight,	250.
Henry Thomas, Esq.,	250.
John Redpath, Esq.	250.
James McDougall, Esq.,	250.
James Mitchell, Esq.,	250.
James Torrance, Esq.,	250.
Honorable James Ferrier,	250.
John Smith, Esq.,	250.
Harrison Stephens, Esq.,	200.
Henry Chapman, Esq., Mr. Chapman also founded a Gold Medal to be given annually for the greatest general proficiency in the graduating class in Arts.	150.
John James Day, Esq.	150.
Honorable Peter McGill,	150.
Thomas Brown Anderson, Esq.,	150.
Peter Redpath, Esq.	150.
Thomas M. Taylor, Esq.,	150.
Joseph MacKay, Esq.,	150.
Augustus N. Heward, Esq.,	150.
Donald Lorn MacDougall, Esq.,	150.
Honorable John Rose,	150.
Charles Alexander, Esq.,	150.
Moses E. David, Esq.,	150.
William Carter, Esq.,	150.
Thomas Paton, Esq.,	150.
William Workman, Esq.,	150.
Hon. Alexander T. Galt,	150.
Luther H. Holton, Esq.,	150.
Henry Lyman, Esq.,	150.
David Torrance, Esq.,	150.
Edwin Atwater, Esq.,	150.
Theodore Hart, Esq.,	150.
William Forsyth Grant, Esq.,	150.
J. R. Chamberlain, Esq.,	150.
Robert Campbell, Esq.,	150.
Alfred Savage, Esq.,	150.
James Ferrier, Esq., Jr.,	150.
William Stephen, Esq.,	150.
N. S. Whitney, Esq.,	150.
William Dow, Esq.,	150.
William Watson, Esq.,	150.
Edward & Alicia Major,	150.
Honorable Charles Dewey Day,	50.
John R. Esdaile, Esq',	50.

CALENDAR

OF

THE UNIVERSITY OF

McGILL COLLEGE,

MONTREAL.

Founded by Bequest of the Hon. James McGill, in 1811; Erected into a University by Royal Charter in 1821; and Re-organized by an Amended Charter in 1852.

SESSION OF 1860-61.

MONTREAL:
PRINTED BY J. C. BECKET, 38 GREAT SAINT JAMES STREET.

1860.

ACADEMICAL YEAR.—1860-61.

1860.

September 1.—Autumn Term of *High School* commences.
" "—Session of *Normal* and *Model Schools* commences.
" 6—Session of *Faculty of Arts* commences.
" "—Matriculation Examinations in Faculty of Arts.
" "—Supplemental Examinations, in Faculty of Arts.
" 22—School Examinations of the University.
October 31—Quarterly Meeting of Corporation.
November 5—Session of *Faculties of Law* and *Medicine* commences.
" 16—Winter Term of High School commences.
December 20—Normal and Model Schools close for Christmas vacation.
" 22—College Classes close for Christmas vacation.

1861.

January 4—Classes re-commence after Christmas vacation.
" "—Class Examinations in Arts.
" 30—Quarterly Meeting of Corporation.
February 1—Spring Term of High School commences.
April 10—Sessional and B. A. Examinations in Arts commence.
" 16—Summer Term of High School commences.
" 29—Quarterly Meeting of Corporation.
May 1—Classes in Arts, Medicine and Law close for *summer vacation.*
" 2—Annual Meeting of Convocation.
July 1—Summer Term of High School ends, and classes close for *summer vacation.*
" 1—Normal and Model Schools close for *summer vacation.*
" 29—Quarterly Meeting of Corporation.

UNIVERSITY OF McGILL COLLEGE.

VISITOR:

His Excellency The Right Hon. Sir Edmund Walker Head, Bart., M.A., Governor General of British North America, &c.

CORPORATION.

Governors:

The Hon. Charles Dewey Day, LL. D., President.
The Hon. James Ferrier, M. L. C.
The Hon. Peter M'Gill, M. L. C.
Thomas Brown Anderson, Esq.
David Davidson, Esq.
Benjamin Holmes, Esq.
Andrew Robertson, M. A.
Christopher Dunkin, M. A., M. P. P.
William Molson, Esq.
Alexander Morris, M. A.

Principal:

John William Dawson, LL. D., F. G. S.

Fellows:

Rev. Canon Leach, LL. D., Vice-Principal and Dean of the Faculty of Arts.
Andrew F. Holmes, M. D., LL. D., Dean of the Faculty of Medicine.
Henry Aspinwall Howe, M. A., Rector of the High School.
J. J. C. Abbott, B. C. L., Dean of the Faculty of Law.
Brown Chamberlin, M. A., B. C. L.
Walter Jones, M. D.
W. B. Lambe, B. C. L.
Sir William E. Logan, LL. D., F. R. S., F. G. S.
Rev. Edward Cleveland, M. A., Principal of St. Francis College.

The Governors of the College are the members of the "Royal Institution for the advancement of Learning," and are nominated by His Excellency the Governor General, under the Act 41st Geo. 3, chapter 17.

SECRETARY, REGISTRAR, AND BURSAR,

William Craig Baynes, B.A. Office, Burnside Hall. Office Hours, 10 to 2. Residence, Centre Building M'Gill College.

OFFICERS OF INSTRUCTION.

ARRANGED IN THE ORDER OF STATUTORY PRECEDENCE.

	Residence.
JOHN WILLIAM DAWSON, LL. D., F. G. S.—Principal, and Professor of Natural History and Agriculture.	East Wing, M'Gill College.
REV. CANON LEACH, LL. D.—Vice-Principal, Dean of the Faculty of Arts, Professor of Logic and Moral Philosophy, and Molson Professor of English Literature.	4, University Avenue.
ANDREW F. HOLMES, M. D., LL. D.—Dean of the Faculty of Medicine and Professor of the Theory and Practice of Medicine.	68, Craig Street.
HENRY ASPINWALL HOWE, M. A.—Rector of the High School and Emeritus Professor of Mathematics and Natural Philosophy.	3, Place St. Sophie, M'Gill College Avenue.
J. J. C. ABBOTT, B. C. L.—Dean of the Faculty of Law and Professor of Commercial Law.	505, St. Catherine Street.
GEORGE W. CAMPBELL, M. A., M. D.—Professor of Surgery.	63, Great St. James Street.
ARCHIBALD HALL, M. D.—Professor of Midwifery and Diseases of Women and Children.	18, Radegonde Street.
WILLIAM FRASER, M. D.—Professor of the Institutes of Medicine.	12, Little St. James Street.
WILLIAM SUTHERLAND, M. D.—Professor of Chemistry.	31, Great St. James Street.
WILLIAM E. SCOTT, M. D.—Professor of Anatomy.	—9, Bonaventure St.
WILLIAM WRIGHT, M. D.—Professor of Materia Medica and Pharmacy.	1, Great St. James Street.
ROBERT P. HOWARD, M. D.—Professor of Clinical Medicine and Medical Jurisprudence.	11, Bonaventure St
REV. A. DESOLA, LL.D.—Professor of Hebrew and Oriental Literature.	1, Pres de Ville Place.
HON. WILLIAM BADGLEY, D.C.L.—Professor of Public and Criminal Law.	McGill College Avenue.
FREDERICK W. TORRANCE, M. A., B. C. L.—Professor of Civil Law.	59, Little St. James Street.
P. R. LAFRENAYE, B. C. L.—Professor of Jurisprudence and Legal Bibliography.	Upper St. Urbain Street.
R. G. LAFLAMME, B. C. L.—Professor of Customary Law and Law of Real Estate.	1 Cornwall Terrace.
CHARLES SMALLWOOD, M. D., LL. D.—Professor of Meteorology.	St. Martin's, Isle Jesus.
CHARLES F. A. MARKGRAF.—Professor of German Language and Literature.	2, Ashton Place, Victoria Avenue.
D. C. M'CALLUM, M. D.—Professor of Clinical Surgery.	—152, Craig Street.
MARK J. HAMILTON, C. E.—Professor of Road and Railway Engineering.	148, Craig Street.
ALEXANDER JOHNSON, M. A.—Professor of Mathematics and Natural Philosophy.	Centre Building, M'Gill College.
REV. GEORGE CORNISH, B. A.—Professor of Classical Literature.	East Wing, McGill College.

JONATHAN BARBER, M. R.C.S.L.—Professor of Oratory. — 84, St. Denis St.

PIERRE J. DAREY, M. A.—Professor of French Language and Literature. } 221, Dorchester Street.

T. A. GIBSON, M. A.—Classical and Senior English Master of High School. } 221, Dorchester Street.

EDWIN GOULD, B. A.—College Tutor in History and English Literature. } 158, Mountain St.

DAVID RODGER, M. A.—Mathematical Master of High School. } 407, St. Catherine Street.

ROBERT CRAIK, M.D.—Demonstrator of Anatomy and Curator of Medical Museum. } 123, Craig Street.

JAMES DUNCAN.—Drawing Master of High School. —74, St. Lewis St.

JAMES KEMP.—Junior English Master of High School. —21, Brunswick St.

JOHN ANDREW—Elocution Master. } 327, Lagauchetiere Street.

WILLIAM KAY, M. A.—Classical and Senior English Master, High School.

JOHN MARTLAND, B. A.—Classical and Senior English Master, High School.

JOHN M. REID—Junior English Master, High School.

UNIVERSITY BUILDINGS.

1.—*Original College Buildings*, North side of Sherbrooke Street, at the head of McGill College Avenue, contain the Class-Rooms, Library and Museum of the Faculty of Arts, and the residences of the Principal, the resident Professors and Students, and the Secretary.

2.—*Burnside Hall*, corner of Dorchester and University Streets; contains the Class-Rooms of the Faculty of Law, the Class-Rooms of the High School Department, and the Office of the Secretary.

3.—*Building of the Medical Faculty*, Coté-Street; contains the Class-Rooms, Library and Museum of the Faculty of Medicine.

4.—*Normal School Building*, Belmont Street; contains the Class-Rooms of the McGill Normal and Model Schools, under the joint control of the Superintendent of Education and the University.

GENERAL ANNOUNCEMENT.

The eighth Session of this University, under its amended charter, will commence in the Autumn of 1860. The Classes in the Faculty of Arts will open on the 6th of September, those in the Medical and Law Faculties, on the first Monday of November, those in the High School Department, on the 1st of September, and those in the McGill Normal School on the 1st of September.

The course of study in the University and the distinctions which it offers, may be summed up as follows:—

1. *The Faculty of Law.*—The lectures in this faculty comprise a complete course of legal study, with especial reference to the Law of Lower Canada, and lead to the degrees of B.C.L. and D.C.L.

2. *The Faculty of Medicine* embraces in its lectures and demonstrations all the necessary and important branches of a Medical education, leading to the degree of M.D.

3. *The Faculty of Arts.*—The undergraduate course in Arts offers a thorough Classical and Mathematical training, with adequate provision for the study of Logic, Mental and Moral Science, Natural Science and Modern Literature, leading to the degrees of B.A. and M.A. Ample provision has also been made for honour studies, and many facilities are offered to enable students in Law and Medicine to take the degree of B.A. Partial courses of study are provided for students not desirous of taking the whole course.

4. *The Special Course of Engineering*, connected with the Faculty of Arts, has been perfected by the experience of four Sessions, and offers to students of that profession the necessary scientific training, and the diploma of Graduate in Civil Engineering.

5. In the *High School Department*, the course embraces a good English education in all its branches, with the French and German languages, and the Classical and Mathematical instruction necessary to enter the University.

6. *The McGill Normal School*, affiliated to the University, provides the training requisite for Teachers of Elementary and Model Schools. Teachers trained in this school are entitled to Provincial diplomas.

7. *St. Francis College*, Richmond, is an affiliated College of the University; and its matriculated students may prosecute any part of their course of study under the Faculty of Arts, and may be admitted to examination for the degree of B.A.

8. *School Examinations of the University.*—Under regulations which are appended to this Calendar, the University has appointed examinations for pupils of any school or academy; on passing which, such pupils will be entitled to Junior or Senior School Certificates of the University. It is hoped that these examinations may exercise an important influence in encouraging good schools, in elevating the standard of education, and in inducing young men about to enter into business, to pursue a longer and more thorough course of preparatory study.

Details of the terms and course of study, in the several Faculties, in the High School Department, and in the Normal School, will be found under the proper heads.

The regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its general character the University is Protestant, but not denominational; and while all possible attention will be given to the character and conduct of students, no interference with their peculiar religious views will be sanctioned.

Arrangements have been made for receiving a number of Students in Arts as boarders in the College buildings, and for placing such resident students under the immediate superintendence of the Rev. Professor Cornish, to whom application may be made. Board may be obtained in the city at from $12 to $16 per month. The Principal, the Deans of the several Faculties, and the Rector of the High School, will do all in their power to aid Students in procuring suitable lodgings, and generally to promote their comfort and welfare while connected with the University.

FACULTY OF ARTS.

The Principal (ex-officio.)

Professors—Leach.	Professors—Smallwood.
Howe.	Hamilton.
De Sola.	Johnson.
Dawson.	Cornish.
Markgraf.	Barber.
	Darey.

Dean of the Faculty—Rev. Canon Leach, LL.D.

The regular course of study in this Faculty extends over four sessions—one session of eight months being held in each year; and under the following regulations four descriptions of Students are recognised: (1). *Undergraduates*, who must pass the matriculation examination and take all the courses of lectures prescribed for the degree of B.A. (2). *Students in Special Courses* (Engineering, &c.,) who must pass the matriculation examination and take the lectures prescribed for such courses. (3.) *Partial Students*, not matriculated and taking two or more courses of lectures. (4.) *Occasional Students* taking only one course of lectures.

Fee for each Session, for Undergraduates and Special Students, $20. Engineering, $10 extra. Fee for Partial and Occasional Students, $5 for each course of lectures. Matriculation $4, payable only in the year of entrance.

§ 1. MATRICULATION AND ADMISSION.

Candidates for Matriculation as undergraduates, are required to present themselves to the Dean of the Faculty, on or before the 6th of September, that the Faculty may by examination decide on their fitness to enter on the prescribed course of Study; but Candidates may enter at subsequent periods of the Session, if, on examination, found qualified to take their places in the classes at such periods.

Candidates for Matriculation will be examined in Latin Grammar; Greek Grammar; Cæsar's Commentaries; Sallust; Virgil, Æneid 1st book; Xenophon's Anabasis, 1st book; Arithmetic; Algebra, to Quadratic Equations; Euclid's Elements, 3 books; Writing English from dictation. In Classics the amount of knowledge rather than the particular authors studied, will be regarded.

Students who have attended Collegiate courses of study in other Universities for a number of terms or sessions, will be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

Students who may not have previously attended any Collegiate course of study, may, nevertheless, be admitted to the standing of second year's students, provided that upon examination they be found qualified.

Candidates for Matriculation as students in the Special Course of Engineering, will be exempted from the examination in Classics, and will be examined as specified under the head of Civil Engineering.

Persons not desirous of entering as regular students, may, on application to the Secretary, obtain tickets as partial or occasional students.

§ 2. SCHOLARSHIPS AND BURSARIES.

Sixteen Scholarships have been placed by the Governors at the disposal of His Excellency the Governor General. These entitle the holders to exemption from tuition fees. Applications must be addressed to His Excellency, through the Provincial Secretary. Previously to being matriculated, those presented to the said Scholarships will be examined as to their fitness to enter upon the Collegiate Course of Study. By command of His Excellency, three of these Scholarships will be offered for competition in the Matriculation examinations of the ensuing session.

Eight other Scholarships will be granted by the Governors from time to time to the most successful Students who may present themselves as candidates.

One or more Normal School Bursaries in the Faculty of Arts will be offered for competition to Students of the third or fourth years. They entitle the holder to an annual sum of $100, for a term not exceeding two years, under condition of practising the art of teaching in the High School Department, and of teaching for three years in some public School or Academy in Lower Canada, after taking the degree of B. A. and a diploma as a teacher of an Academy.

§ 3. COURSES OF STUDY.

FOR THE DEGREE OF B. A.

First Year—Classics, French or German, English Literature, Mathematics, History, Elementary Chemistry.

Second Year—Classics, French or German, Logic, Mathematics, Botany, History, Elocution.

Third Year—Classics, French or German, Moral Philosophy and Mental Science, Mathematics, Natural Philosophy and Astronomy, Zoology or Chemistry.

Fourth Year—Classics, French or German, Rhetoric, Natural Philosophy and Astronomy, Mineralogy and Geology.

Theological Students may take Hebrew instead of French or German.

Undergraduates in the third and fourth years, entering with consent of their Professors as candidates for honors, or matriculating in the Faculties of Law or Medicine of this University, and presenting certificates of attendance therein, will be entitled to certain exemptions specified in the programme of Lectures.

FOR THE DIPLOMA OF GRADUATE IN CIVIL ENGINEERING.

First Year—Drawing, Mensuration, Surveying, Mathematics of the second year and Experimental Physics with the ordinary Mathematics and Physics of the third year, English Literature, French or German, Chemistry.

Second Year—Drawing, Engineering, Higher Mathematics and Physics, Geology and Mineralogy, French or German.

For details of the above courses of study and for special courses of Agriculture and Commerce, see Section 6th.

§ 4. EXAMINATIONS, PRIZES, AND HONORS.

A preliminary examination of each class will be held at the close of the Christmas vacation, with classification as at the sessional examination. Students who do not pass this examination will be required at the close of the session to submit to an extra examination on the subjects of the preliminary one, previous to the Sessional examination.

At the Sessional examinations the Faculty will award the following distinctions :—

1. Prizes and Certificates of Merit to those Matriculated Students who may have distinguished themselves in the studies of a particular class, and who have attended all the other classes proper to their year.

2. General Honours of first or second rank to those Matriculated Students who show a high degree of proficiency in all the studies proper to their year.

3. Special Honors of first or second rank, to those Matriculated Students who have successfully passed the honor examinations in any class in which studies for honors have been provided, and have also passed creditably the ordinary examinations in all the subjects proper to their year.

4. The Chapman Gold Medal to the Student who in the examination for the degree of B. A., shall show the greatest proficiency in the greatest number of the parts of study appointed for the examination for the said degree, with the honor subjects in at least one class.

Students who pass the sessional or degree examinations, will be arranged at the close of the session according to their answering, as 1st class, 2d class, and unclassed : and in this, as well as the examinations for honors, those who are equal will be bracketed together.

The names of those who have graduated or taken honors or prizes, will be published in the order of their respective merits; and with mention, in the case of students of the first and second years, of the schools in which their preliminary education has been received.

Failure in two or more subjects at the sessional examinations will involve the loss of the session, but the Faculty may permit the student to recover his standing by passing a special examination at the beginning of the ensuing session. For the purposes of this regulation, Classics and Mathematics with Physics, will each be regarded as two subjects, and the other subjects each as one.

§ 5. DEGREES.

At the Annual final examinations, candidates for the degree of B.A. will be examined in all the subjects in Classics, Mathematics, Logic and Rhetoric, Mental and Moral Science, Natural Science, History and Modern Languages that form parts of the Collegiate course, or in such portions of them as the Faculty may from time to time determine.

The subjects appointed for the B.A. examinations of the Session of 1860-61 are—Classics, Moral Philosophy, Mathematical Physics and Astronomy, Geology, French or German; subject to the options elsewhere specified in the case of Honor Students and Students in Law and Medicine; and to the provision that the student shall have passed the sessional examinations in the other subjects of the course.

Bachelors of Arts of at least three years standing, are entitled to the degree of Master of Arts, after such examination and exercises as may be prescribed by the corporation. The exercise at present appointed is the preparation of a Thesis on any literary, scientific, or professional subject, to be selected by the candidate, and approved by the Faculty.

Candidates for the degree of Graduate in Civil Engineering will be examined in the subjects proper to the course of Civil Engineering, in the same manner as the candidates for the degree of B. A.

§ 6. COURSES OF LECTURES.

ENGLISH LITERATURE.

MOLSON PROFESSORSHIP.

Professor, Rev. Canon Leach, D.C.L., LL.D.

1st Year's Students, Monday and Friday 11 to 12, Wednesday 12 to 1.

I. Affinity of Languages—History of the Origin and Successive Improvements of the English Language—Its Constituent Elements—Text-book, Latham's Handbook.

II. Grammar of the English Language—Text-books, Crombie and Latham.

III. History of English Literature and Criticism of Literary Works—Early

English Literature before the time of Queen Elizabeth—English Literature in the age of Spenser, Shakespeare, Milton, &c.,—in the age of the Restoration and Revolution,—in the Eighteenth and Nineteenth Centuries—Text-book, Spalding's History of English Literature.

The Lectures on the above subjects will be constantly accompanied with exercises in the practice of composition.

LOGIC, MENTAL AND MORAL PHILOSOPHY AND RHETORIC.

Professor, Rev. Canon Leach, D.C.L., LL.D.

4th Year's Students,		Tuesday and Thursday,	10 to 11.
3rd	"	Tuesday, Wednesday and Thursday,	11 to 12.
2nd	"	Monday, Wednesday and Friday,	10 to 11.

Logic, (2nd Year's Students)—History of Logic: its sphere and its advantages as a Practical Science—Origin and Functions of Language—Import and Classification of Names and Propositions—Mental Operations involved in the process of Reasoning—Doctrine of Syllogism—Systems of Notation, &c.—Application of Logic, in dealing with Fallacies, in Division and Definition, in Induction, &c.

Mental Science, (3rd Year's Students)—Mental Phenomena—Different Classifications of Mental Phenomena—Unity of the Human Mind—Volition—Consciousness—The Senses and Sensation—Perception—Understanding—Reason—Instincts, Passions, Affections—Moral Sentiments—Reflex Sentiments—Sentiment of Beauty and Sublimity—of Religion.

Moral Philosophy.—Philosophy—History of Philosophy, Oriental, Greek, Modern—Moral Philosophy and Moral Science—Moral Systems, Systematic Morality, with Polity and International Law.

Rhetoric, (4th Year's Students)—History, Sphere, Uses, &c.—Exposition and Classification of Rhetorical Figures—Style—Different Species of Composition and Rules applicable to each.

ORATORY AND ELOCUTION.

Professor, J. Barber, M. R. C. S. L.

2nd Year's Students, Wednesday, 11 to 12.

General Elements of Speech; Constituents of Speech, compared with those of Song and Recitative. Radical and Vanishing Concrete of Dr. Rush—Thorough understanding of this necessary to a correction of the faults of Speech—Relation of Alphabetic Elements to this movement. *Expressive* Elements of Speech. Pitch and its modifications, with oral examples. Time of the Voice. Rythm of Speech. Force and its modifications—Abruptness—Quality of Voice. Emphasis, its varied and numerous forms, with oral examples, &c. Extempore Speaking—the means of acquiring it.

HISTORY.

The Lectures will be delivered in the ensuing Session by the Professor of Classical Literature.

1st and 2nd year's Students, 11 to 12 on Tuesday.

This course will include a series of Lectures on Ancient and Modern History and Chronology, with the aid of a text-book and exercises.

CLASSICAL LITERATURE.

Professor, Rev. G. Cornish, B. A.

4th year's	Students,	Monday and Friday,	11 to 12.
3rd	"	Tues., Wed. & Thurs.,	10 to 11.
2nd	"	daily, except Saturday,	12 to 1.
1st	"	" "	9 to 10.

GREEK.

First Year.—XENOPHON.—ANABASIS, LIB. I.
HOMER—LIB. I. II. & III.
Greek Prose Composition.

Second Year.—HERODOTUS.—LIB. I.
EURIPIDES.—HECUBA.
Greek Prose Composition.

Third Year.—DEMOSTHENES.—DE CORONA.
SOPHOCLES.—ANTIGONE.
Greek Prose Composition.

Fourth Year.—THUCYDIDES.—LIB. II.
ÆSCHYLUS.—PROMETHEUS VINCTUS.

LATIN.

First Year.—CICERO.—ORATS. IV. IN CATILINAM.
VIRGIL.—ÆNEID, LIB. VI., OR BUCOLICA.
Latin Prose Composition.

Second Year.—HORACE.—EPISTOLAE & ARS POETICA.
TACITUS.—GERMANIA & AGRICOLA.
Latin Prose Composition.

Third Year.—JUVENAL.—SAT. I., III., VIII. & X.
TACITUS.—ANNALES, LIB. I. OR HORACE.—SATIRAE, LIB. I.
Longer Exercise in Latin Prose Composition.

Fourth Year.—PERSIUS.—SAT. II., V. & VI.
TERENCE.—HEAUTONTIMOROUMENOS.

Honour Course.

Third Year, (Monday and Friday, 10 to 11.)

I. GREEK.—SOPHOCLES.—PHILOCTETES.
EURIPIDES.—ALCESTIS.
PLATO.—CRITO.
ÆSCHINES.—ORAT. CONTRA CTESIPHONTEM.

II. LATIN.—LIVY.—LIB. XXI.
CICERO.—PRO MURENA.
CICERO.—DE SENECTUTE.
TERENCE.—ANDRIA.

III.—Composition in Greek and Latin Prose.

B. A. Honours in Classics, being the Honour Course for Students of the Fourth year, (Monday and Wednesday, 2 P.M.)

Candidates for B. A. Honours in Classics will be examined in the following subjects :—

I. Greek.—Æschylus.—Septem contra Thebas.
Aristophanes.—Ranae.
Aristotle.—De Rhetorica, Lib. I.
Thucydides.—Lib. VII.
Pindar.—Olympia.

II. Latin.—Plautus.—Trinummus.
Terence.—Adelphi.
Cicero.—Epist. ad Atticum, Lib. I.
Tacitus.—Historiae, Lib. I.
Lucretius.—Lib. V. & VI.

III. Retranslation into Greek, and Original Composition in Latin Prose.

IV. Questions in Grammar, History and Geography.

In the work of the Class the attention of the Student will be directed to the Collateral subjects of History, Antiquities and Geography, also to the Grammatical structure and affinities of the Greek and Latin Languages ; and to Prosody and Accentuation.

Candidates for Honours in Classics will be examined in all the subjects of each year respectively.

The examination for Honours of the Third Year, and the examination for B. A. Honours, in Classics, will each extend over two days, in the morning from 9 to 1, and in the afternoon, from 3 to 6.

Classical subjects for B. A. examination, 1861 :—

I. Greek.—Thucydides, Lib. II.
Æschylus.—Prometheus Vinctus.

II. Latin.—Horace.—Satirae, Lib. I.
Tacitus.—Germania & Agricola.

III.—Composition in Greek and Latin Prose.

FRENCH LANGUAGE AND LITERATURE.

Professor, Pierre J. Darey, M. A.

1st Year's Students, Monday Tuesday, Thursday, and Friday 12 to 1.
2nd " Monday, and Friday, 11 to 12.
Engineering Students, Tues., Wed., Thursday, at 11 ; Wednesday at 12.

The French Language being of especial importance in Lower Canada, a larger amount of attention is bestowed upon it than is usual in English Colleges ; and every effort is made to train the Students to speak and write it with accuracy and taste.

In the first year the course will embrace the Grammar of the Language, translation of Ollendorff's Exercises, reading, and oral translation.

In the second year more difficult exercises will be given in Grammar and Composition,—the varieties of style will be illustrated by lectures and readings in the best authors, and the conversation in the class will be in the French Language exclusively.

GERMAN LANGUAGE AND LITERATURE.

Professor, C. F. A. Markgraf.

1st year's Students, Monday, Wednesday and Friday, 9 to 10
2nd " " " " 10 to 11

Third Year.—Text-books. Ollendorff's Grammar by Adler, and Adler's Progressive German Reader—Translations and other Exercises oral and written. A general insight into the History and Nature of the different Teutonic Idioms will be given in this course, and special attention will be paid to the affinity of the German with the English, in Roots, Grammatical Forms, Syntax and Accentuation.

Fourth Year.—Text-books. Ollendorff's Grammar by Adler and Adler's Hand-book of German Literature. To the usual Exercises of the previous year will be added Recitations, and Composition viva voce and in writing. A short Series of Lectures on German Literature will be delivered, and the German Language will be used in the work of the class.

HEBREW AND ORIENTAL LITERATURE.

Professor, Rev. A. DeSola, LL.D.

Monday, Tuesday, Wednesday, and Thursday, 2 to 3.

The course will comprise lectures on the History of the Hebrew Language and Literature in particular, with a general notice of the other Oriental Languages, their genius and peculiarities. Comparative Philology, affinity of roots, &c., will also receive due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, &c.

Junior Class.—Grammar. The Text-book employed will be Gesenius' Hebrew Grammar, with exercises in Orthography and Etymology.

Reading.—Translation and Grammatical Analysis of Historical portions of the Scriptures—Syntax—Mishlé Shualim—Fables, &c.

Senior Class.—Introduction to the Study of Hebrew Poetry—its spirit and characteristics. Lowth and Sarchi as Text-books. Translations from the Psalms, Lamentatations, and Isaiah. Ancient compared with modern Hebrew Poetry; the productions of Halevi Gabirol, &c. Grammar, Exercises, &c. continued.—The Chaldee Language, Grammar, Mebo Halashon Aramith of J. Jeitteles. The Chaldee portions of Scripture. Targum of Onkelos and T. Yerushalmi.

SPANISH LANGUAGE AND LITERATURE.

Rev. Professor DeSola.

Extra Fee for this Class $5.

The study of the Spanish Language on this Continent, being generally pursued with special reference to commercial purposes, it will be sought to impart in this Course a practical knowledge of the Castilian, the richest and most harmonious of the Peninsular Languages—as well as an acquaintance with its Literature.

Ollendorff's Spanish Grammar by Velazquez and Simonné, and the Reader of M. Valazquez, are the text-books employed in the Junior Class, who will also be exercised in composition by both written and oral exercises. In the Senior Class Fernandes' Exercises, continuation of Grammar and Composition, Cervantes' Don Quixote, Quintana Vida del Cid, and Marianas Historia will be the subjects of study. Besides a special comparison with the Portuguese Language, a general notice, literary and historical, of the Bascuense and other Dialects will be given.

MATHEMATICS AND NATURAL PHILOSOPHY.

Professor, Alexander Johnson, M. A.

3rd and 4th year's Students,	Tuesday and Thursday,	12 to 1.
" year's Students,	Mon., Wed. and Friday,	12 to 1.
2nd "	Tuesday and Thursday,	9 to 10.
1st "	Every Day except Saturday;	10 to 11.

MATHEMATICS. (*First year*)—Arithmetic.—Euclid, Books 1, 2, 3, 4, 6, with Definitions of Book 5, (omitting propositions 27, 28, 29 of Book 6), Galbraith and Haughton's Edition.—Colenso's Algebra, Part I to end of Quadratic Equations.—Galbraith and Haughton's Plane Trigonometry to end of Solution of Plane Triangles—Nature and use of Logarithms.

MATHEMATICS.—(*Second year*)—Arithmetic, Euclid, Algebra and Trigonometry as before.—Remainder of Galbraith and Haughton's Plane Trigonometry.—Chief properties of Conic Sections treated Geometrically, (Drew or Whewell.)—Solid Geometry, (principal propositions.)

MATHEMATICAL PHYSICS AND ASTRONOMY.—(*Third year.*)—Galbraith and Haughton's Mechanics, Hydrostatics, Optics, and Astronomy.

EXPERIMENTAL PHYSICS.—(*Third and Fourth year.*)—1. *Light.*—Theories.—Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarization.—Optical Instruments. 2. *Heat.*—Dilatation of Solids, Liquids, and Gases.—Specific and Latent Heat.—Radiation and Conduction of Heat. 3 *Electricity.*—Frictional and Voltaic. 4. *Magnetism.*—Text-books.—Lardner's Hand-books.

In connection with the above, Lectures, Illustrated by Apparatus, will be delivered on the following subjects :—

Statics and Dynamics.—Properties of Matter.—Composition and Resolution of Forces.—Centre of Gravity.—Mechanical Powers.—Friction.—Strength of Materials.—The Arch.—Laws of Motion.—Instantaneous Forces.—Accelerating and Retarding Forces.—Falling Bodies.—Motion on Inclined Planes and Curves.—Centrifugal Force.—Pendulum.—Rotation.—Collision.—Projectiles.—Molecular Forces.—Theory of Machinery.

Hydrostatics and Hydrodynamics.—General properties of Fluids.—Equilibrium and pressure of liquids and of gases —Pressure of the Atmosphere,—Equilibrium of floating bodies.—Specific Gravity.—Capillary Attraction.—Laws of Motion of Liquids.—Instruments and Machines.

Acoustics.—Theory of Undulations.—Production and Propagation of Sound.—Vibration of Rods and Plates.—Vibration of Fluids.—Musical Sounds.

Astronomy, (For Engineering Students especially.)—Historical Sketch—General account of phenomena of Universe.—Astronomical Instruments.—Methods of finding Mean time ; setting a Transit Instrument in the Meridian ; and ascertaining Latitude and Longitude.

Honor Course.

4th Year—	Tuesday, Wednesday, Thursday,	11 to 12.
3rd "	—Monday, Friday,	11 to 12.
2nd "	—Monday, Wednesday, Friday,	9 to 10.
1st "	—In connection with Ordinary,	10 to 11.

MATHEMATICS.—(*First Year.*)—Mulcahy's Modern Geometry, first five chapters.—Wood's Algebra.—Young's Theory of Equations.—Hind's Plane and Spherical Trigonometry.

MATHEMATICS.—(*Second Year.*)—Theory of Equations and Trigonometry continued.—Salmon's Analytic Geometry, first thirteen chapters.—Hall's

Calculus, Chapters 1, 2, 3, 4, 6, 7, of Diff. Cal., Chapters 1, 2, 3, 4, 5, of Integ. Cal.

MATHEMATICAL PHYSICS.—(*Third Year.*)—Todhunter's Statics, (omitting Chap. 13.)—Sandeman's Dynamics of a Particle. Chap I.—Chap. II.—Chap. III., Sects. 1-24.—Chap. V, Sects. 52-53.—Chap. VI. Miller's Hydrostatics, omitting Sects 5, 6, and Appendix.—Walton's Mechanical Problems.—Griffin's Optics.—Hymer's Astronomy, (selected course.)

B. A. Honor Course.

PURE MATHEMATICS.—Hind's Plane and Spherical Trigonometry.—Young's Theory of Equations.—Hall's Differential and Integral Calculus.—Boole's Differential Equations, (selected course.)—Gregory's Examples of the Calculus, (omitting last 2 chapters.)—Salmon's Conic Sections.—Leroy, Géometrie des Trois Dimensions, (or Gregory's Solid Geometry.)

MECHANICS.—Todhunter's Statics.—Sandeman's Dynamics of a Particle.—Griffin's Dynamics of a Rigid Body.—Besant's Hydrostatics and Hydro-dynamics.—Walton's Mechanical Examples.—Walton's Examples in Hydrostatics.

OPTICS.—Griffin's Optics.—Lloyd's Wave Theory of Light.

ASTRONOMY.—Hymer's Astronomy.—Sir John Herschell's Outlines of Astronomy, Chaps. 12, 13, 14.—Godfray's Lunar Theory.

Newton's Principia, Lib. I., Sects 1, 2, 3, 9, and 11.

HEAT.—Lardner's Hand-book.

ELECTRICITY.— } Lardner's Hand-book.
MAGNETISM.— }

Students will be examined in the above courses (Ordinary and Honor) both by papers and vivâ voce. The examination for B. A. Honors will continue for *three* days from 9 to 1, and 3 to 5 each day; the vivâ voce examination taking place on the last 2 days between the hours of 3 and 5 P. M.

The examinations for Honors in the other years will continue for *two* days.

Engineering Students may be candidates for Honors.

At every examination (whether Ordinary or Honor) prior to the Sessional in the third year, Students are liable to examination in all the subjects of the previous years.

NATURAL HISTORY.

Professor, J. W. Dawson, LL.D., F. G. S.

4th year's Students, Monday and Friday 12 to 1.
3rd " " Tuesday and Thursday 9 to 10.
2nd " " " " 10 to 11.
Honor Course, Wednesday 12 to 1, and other days as arranged.

I. BOTANY.—(Second year's Students.)

1. *Vegetable Histology*, or the Study of the Elementary Tissues of Plants, with a description of the Microscope and its uses in Botanical investigations.

2. *Vegetable Anatomy and Physiology*, or the Structure and Functions of the Nutritive and Reproductive Organs of Plants.

3. *Vegetable Nutrition*, and General Phenomena connected with Plant Life.

4. *Taxological Botany*, or the Classification of Plants—with descriptions of the most important Natural Orders, and instructions for collecting and determining Plants.

5. *Geographical Botany*, or the distribution of Plants over the Globe.

Text-Books.—Gray's Botanical Text-Book.—Gray's Manual.

II. Zoology and Comparative Physiology, (Third year's Students.)

1. *General Views of Animal Life*, and of the relation of the animal to the plant.

2. *Animal Histology.*—The elementary cell and its metamorphoses.—Microscopic examination of tissues.

3. *Functions of Animals.*—With especial reference to the physiology of the lower animals.

4. *Principles of Classification.*—Type or homology.—Analogy and adaptation.—True nature of the species, genus, and other groups in Zoology.

5. *Descriptive Zoology.*—The Radiata, Mollusca, Articulata and Vertebrata, illustrated by typical examples, and as far as possible by Canadian species.—Notices of Geographical distribution of animals.

6. *Instructions and Illustrations* in collecting and preserving specimens, and determining species.

Text-Books.—Synopsis by the Professor. Agassiz and Gould's Principles.—Owen's Lectures.

III. Geology and Palaeontology.—(Fourth year's Students.)

1. *Mineralogy.*—Chemical and Physical characters of Minerals, including Crystallography; Methods of determining Minerals, with examples; Descriptive Mineralogy, with especial reference to the species important in Geology or useful in the Arts.

2. *Physical Geology.*—Composition of Rocks and their structure on the small scale.—Origin of Rocks, aqueous, volcanic, plutonic, metamorphic.—Arrangement of Rocks on the large scale; stratification, elevation and disturbances, denudation.

3. *Chronological Geology and Palæontology.*—Data for determining the relative ages of formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America.

4. *Practical and Economical Geology.*—Methods of observation and of making geological surveys. Applications of the science to Mining, Engineering, and Agriculture.

Text-Books:—Nichol's or Dana's Mineralogy, and Lyell's Elements.

IV. Practical and Honor Course,—(*Students of the Fourth year and Special Students*).—Students entering for honors must have passed creditably the examinations in Elementary Chemistry, Zoology, Botany and Experimental Physics; and should know the Elements of Drawing. Students entering for practical purposes will be required only to satisfy the Professor of their fitness for the studies of the class.

The course will consist of demonstrations and explanations on the following subjects, with such modifications as may be found necessary to suit the future pursuits of students.—Examination, determination, and description of specimens.—Use of the blow-pipe and of Chemical methods in Natural History.—Use of the Microscope in original investigation.—Preparation of Specimens for study and preservation.—Special studies in the Zoology, Geology, and Palæontology of British America, with field work when practicable. Students will be required to read such of the following books as may be appointed:—Owen's Lectures on the Invertebrate Animals; Jones' Animal Kingdom; Lyell's Principles and Elements; De la Beche's Geological Observer; Murchison's Siluria; and for local information, Logan & Hunt's Geology of Canada; Dawson's Acadian Geology; Lyell's Travels in North America. Books of reference will be furnished from the College Library.

CHEMISTRY.

Professor, W. Sutherland, M.D.

This class may be taken by Students of the third year instead of Zoology.

Every Day except Saturday, 7 to 8, P.M.

1.—*Inorganic Chemistry*, comprising Heat, Light, Electricity, Galvanism, Crystallography, the Laws of Combination by Weight and by Volume, the Gases and Non-Metallic Elements and their Compounds; the Metals, their combinations and modes of extraction from their ores, and application in the Arts.

2.—*Organic Chemistry*, comprising substances found in or derived by decomposition from Vegetables and Animals; and Physiological Chemistry, both animal and vegetable.

The lectures will be illustated by numerous experiments and specimens; and one hour in each week will be devoted to examinations.

AGRICULTURAL CHEMISTRY.

Professor Dawson.

Students of the First and Second Years—Thursday, 11 to 12.
Special Students in Agriculture—Wednesday, 4 to 5.

1.—*Elementary Chemistry* (Students of the First and Second Years). This course is intended as preparatory to the Study of Natural History, as well as of Agriculture. Text-Books—Wilson and Gregory.

2.—*Agricultural Chemistry*—Composition of the plant—its structures and mode of Nutrition—its products. Textures and composition of Soils —Soils of Canada—causes of the exhaustion of Soils, and methods of improving them—Substances used for Manuring the Soil—Composition and properties of Crops—their value as food. Text-Book—Johnston's Lectures.

Should Students offer for the Special Course of Agriculture, additional hours will be set apart for their instruction. Students should enter, if possible, at the opening of the Session, but will be received until the First week of November.

COMMERCIAL LAW.

Professor J. J. C. Abbott, B.C.L.

(This class is accessible to Matriculated Students in the third or fourth year.)

Monday and Wednesday, 4 to 5.

The subject of Lecture on Mondays will be the general Principles of the Law of Contracts.

On Wednesdays the subjects will be Agency, Bailments, Partnerships, Bills and Notes, and Insurance.

Persons taking tickets for this course, as occasional students, will also have access to the Lectures on Public Law.

A SPECIAL COURSE OF COMMERCE,

Including the subjects of English Composition, Arithmetic and Algebra, Mathematics and Natural Philosophy, Chemistry, Natural History, Modern Languages and History, in addition to those above specified, will be accessible to Students desirous of devoting themselves, for one or two sessions, to the collegiate studies more immediately connected with commercial pursuits.

METEOROLOGY.

Professor Charles Smallwood, M.D., LL.D.

A short course of lectures on this subject is expected to be delivered in the course of the session. Details will be made known by advertisement.

SPECIAL COURSE OF ENGINEERING.

Extending over two Sessions and entitling to the degree of Graduate in Civil Engineering.—(*Fee* $30 per Session.)

MATRICULATION.—Students matriculating in this course will be examined in Arithmetic, Algebra, to Quadratics inclusive, Euclid, Books I. to IV., def. of B. V., B. VI. Plane Trigonometry (especially Solution of Triangles.) Writing English from Dictation. If unable fully to pass this examination, they may, at the discretion of the Professor of Engineering, be allowed to join his class for a preparatory session; and *may*, if found qualified, obtain the diploma at the end of two years.

COURSE OF STUDY.—(*First Year.*)—Mensuration.—Surveying.—Drawing. —Mathematics, (Ordinary and Honour) of under-graduates of the Second year.—Ordinary Mathematics and Physics of the Third year.—Chemistry.— English Literature.—French or German.

(*Second Year.*)—-Engineering.—Drawing.—-Higher Mathematics and Physics.—Geology and Mineralogy.—French and German.

CIVIL ENGINEERING.

Professor, M. J. Hamilton, C. E.

Junior Class, Monday and Wednesday, 2 P.M.
Senior " Tuesday, Thursday and Friday, 2 "
Drawing daily, during the afternoon.

FIRST YEAR.

I. *Drawing.*—Descriptive Geometry, Bridge Drawing, Plotting of Plans and Sections, &c.

II. *Surveying, &c.*—Construction, Adjustments, and Practical Application of the various instruments required for Engineering operations; Land Surveying, Laying Out and Parting off Land; Surveying for Public Roads and Railways; Levelling, Laying Down Curves, Half-Widths, &c.; Measurements and Calculation of Earthwork, Construction and Application of Tables for Earthwork.

SECOND YEAR.

I. *Drawing.*—A more extended course, including Perspective, Isometric Projection, Construction of Physical Maps, Application of Descriptive Geometry to Stone-cutting &c.

II. *Engineering.* Excavation and Embankment, Quarrying and Blasting, Tunnelling, Construction of Public Roads; Construction of Railways, including Gradients, Permanent Way, Rail Laying, Practice of Draining, Theory of the Arch, Stability of Structures, Nature and Mode of Application of Materials in Construction, Strength of Materials, Preparation of Mortars and Cements, Foundations, Piling, Coffer Dams, Retaining Walls; Bridge Building in Stone, Brick, Iron and Wood; Construction and use of Stationary and Locomotive Engines; Efficiency of Labour, Preparation of Specifications and Estimates. When practicable, the classes of both years will go out with the Professor for field-work on Saturdays, at 9 A. M.

For the details of the course of study in Mathematics, Mathematical and Experimental Physics, Chemistry, Geology, English Literature and French, see previous pages of the Calendar.

The Professor of Natural Philosophy proposes to deliver a special course of Lectures to Engineering Students, in the coming session.

The Student will not be required to pass an Examination in the *Honor* Mathematics and Physics of either year, if he do not desire it; but special proficiency in the ordinary Mathematics and Physics, and also in Chemistry and Geology, will be expected.

If at the end of his Junior Year the Student shall pass the Examination in Mathematics, but shall be found deficient in Mathematical and Experimental Physics, the Faculty may either refuse him credit for the year, or require him to attend the ordinary Lectures in Physics during his Senior year.

Graduates in Civil Engineering may attend the Honor Lectures in Mathematics and Physics of the Fourth year, and the Honor Course in Natural History, and compete for Honors; but will be classed separately from undergraduates.

According to the Act 20th Vic. cap. 37, graduates in Civil Engineering having first passed their preliminary examination, may be received as apprentices by any Land Surveyor in Upper or Lower Canada, and "shall, thereupon, be duly holden to serve as such apprentices during twelve months of actual service," instead of three years, before proceeding to their final examination. The advantages thus obtained, and the opportunity of studying Mineralogy and Geology, (now required by law of Provincial Land Surveyors,) deserve the attention of persons about to enter on their apprenticeship. In order to derive the full benefits from the Act, the Students should pass their preliminary examination before entering the College.

The Library of the Faculty of Arts contains 2,000 volumes of standard works, selected with especial reference to the wants of Professors and Students.

The Apparatus includes Electrical and Pneumatic Instruments of the largest size and most modern construction, several Microscopes, a Telescope, and instruments illustrative of Statics, Dynamics, Hydrostatics, Heat, Optics, Astronomy and Geodesy.

The Museum consists of—

1. The general collection in Zoology, including specimens illustrative of the leading types in all the classes of Animals.
2. The general collection in Geology and Palæontology, including specimens illustrative of all the Geological periods.
3. The Holmes Collection of 2,000 Canadian and Foreign Minerals.
4. The Holmes Herbarium, containing specimens of nearly all the plants indigenous to Lower Canada.
5. The Logan Collection of 450 characteristic Canadian Fossils.
6. The Couper Collection of 2,400 Canadian Insects.

All these collections are used to illustrate the lectures, or are open to the inspection of Students.

Programme of Lectures in the Undergraduate Course in Arts and Special Course of Engineering.

SESSION 1860--61.

FIRST YEAR.

Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
9	Classics.	Classics.	Classics.	Classics.	Classics.
10	Mathematics.	Mathematics.	Mathematics.	Mathematics.	Mathematics.
11	English.	History, § French.	* French.	Elementary Chemistry.	English.
12	* French.	* French.	English.	* French.	* French.
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SECOND YEAR.

9	† Mathematics.	Mathematics.	† Mathematics.	Mathematics.	† Mathematics.
10	Logic	Botany.	Logic.	Botany.	Logic.
11	* French.	‡ History.	‡ Elocution.	¶ Ele. Chemistry. § French.	* French.
12	Classics.	Classics.	Classics. § French.	Classics.	Classics.
2	§ Engineering.	§ Drawing.	§ Engineering.	§ Drawing.	§ Drawing.

THIRD YEAR.

9	* German.	‖ Zoology.	* German.	‖ Zoology.	* German.
10	† Classics.	Classics.	Classics.	Classics.	† Classics.
11	† Mathematical Physics.	Moral Philosophy.	Moral Philosophy.	Moral Philosophy.	† Mathematical Physics.
12	Mathematical Physics.	Experimental Physics.	Mathematical Physics.	Experimental Physics.	Mathematical Physics.
2	* Hebrew, § Drawing.	§ Engineering.	* Hebrew, § Drawing.	§ Engineering.	§ Enginee ring.

FOURTH YEAR.

10	* German.	Rhetoric.	* German.	Rhetoric.	* German.
11	Classics.	† Mathematical Physics.	† Mathematical Physics.	† Mathematical Physics.	Classics.
12	Geology.	Experimental Physics.	† Geology.	Experimental Physics.	Geology.
2	† Classics.	* Hebrew.	† Classics.	* Hebrew.	

Chemical Lectures, (at the rooms of the Medical Faculty) daily 7 P.M. *Agriculture*, (at the Normal School) Wednesday 4 to 5. *Commercial Law*, (rooms of Law Faculty) Monday and Wednesday, 4 to 5, from November 1. Library open Tuesday and Thursday forenoons.

* The Student is required to take one modern language, or Hebrew, during two years of the course; but Honor Students and Students in Law or Medicine, may omit modern languages in the 3rd and 4th years. † For Candidates for Honours. § For Engineering Students only. ‖ Optional to Students in Law or Medicine. ‡ Optional to Honour Stu ents. ¶ Unless taken in 1st year. In the fourth year, Honor Students or Students in Law or Medicine may omit, at their option, any two of the following Classes, viz: Exp. Physics, Classics, Rhetoric, Geology. The Drawing Class for Engineering Students continues throughout the afternoon every day.

FACULTY OF MEDICINE.

The Principal (ex-officio.)

Professors,—Holmes.
Campbell.
Hall.
Fraser.
Sutherland.
Scott.
Wright.
Howard.
M'Callum.

Demonstrator and Curator of Museum.—Craik.

Dean of the Faculty,—A. F. Holmes, M.D., LL.D.

The Annual Course of Lectures in the Medical Department of M'Gill College for the approaching Session of 1860–61, is appointed to commence on the first Monday (5th) of November, and to be continued throughout the winter to the end of April.

The Faculty of Medicine are happy to be able to report the continued and increasing success of their School during the last Session, manifested by a larger attendance of students than has ever before occurred. The inscriptions (which are annual) in the Matriculation Register of the Faculty amounted to 108. The number of Graduates is also largely above the average of former years. The degree of Doctor of Medicine and Surgery was conferred at the last Convocation on 23 students, most of whom had commenced and completed their Medical education at M'Gill College. This progressive increase in the number of students has made it necessary to enlarge the accommodation for their reception; and with this view, the Governors have resolved to erect two new and spacious Lecture-Rooms, and to make alterations in the present building which will tend materially to the convenience of the Medical Department.

The well-known character of this School renders it unnecessary to enter largely into the advantages which it offers to Students for obtaining a thorough knowledge of their profession,—as evidence of which the Faculty can point with great satisfaction to many of their former pupils holding distinguished situations in different parts of the world. Only a brief notice need, therefore, be given of the mode of instruction and the means at the disposal of the Faculty.

COURSE OF STUDY.

The number of Professors in the Faculty is Nine; the number of Classes Ten; two of the classes (often conjoined in European Schools) being held by one Professor.

ANATOMY.—(Prof. Scott)—The fresh subject is chiefly employed in the illustration of the Lectures in this branch, aided however, by dried preparations, wax models, plates full size of life, &c. The Dissecting Room is under the direction of the Professor, aided by the Demonstrator of Anatomy. It is open from 8 a.m. to 10 p.m., being lighted with gas. All the usual conveniences are supplied, and the Demonstrator will be in attendance to assist the pupils in their operations.

2. CHEMISTRY.—(Prof. Sutherland.)—Inorganic Chemistry is fully treated; and a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry, also engage the attention of the clsss. For experimental illustration abundant apparatus is possessed by the Professor, among which may be enumerated a powerful Air Pump—Oxy-Hydrogen Microscope—Polariscope—Extensive series of Crystallographical models—Electrical and Galvanic apparatus, &c., &c.

3. MATERIA MEDICA.—(Prof. Wright,)—This course is illustrated by a Cabinet of Pharmacological objects; by Plates of Medicinal Plants, (Roque, Stephenson & Churchill)—by an Herbarium, and by the Microscope (Nachét) and Polariscope for examining Crystals.—Analytical experiments for detecting Adulterations, &c., are also shown.—*Dietetics and Therapeutics* are included in the course.

4. INSTITUTES OF MEDICINE.—(Prof. Fraser.)—Under which are comprised *Histology*, *Physiology*, *General Pathology and General Therapeutics*. The minute Structure and Composition of the various Organs, and the Fluids and Tissues of the Body in health and disease, are explained and illustrated by Microscopic Preparations, Plates and Preparations from the Museum.

5. PRACTICE OF MEDICINE.—(Prof. Holmes.)—The extensive series of plates contained in the Library, (Lebert's great recent work, Cruveilhier, Carswell, Hope, Alibert, Willis, Bateman, &c., &c.,) will be employed; also Morbid Preparations and models of diseased parts.

6. SURGERY.—(Prof. Campbell.)—Divided into Principles and Practice; including Surgical Anatomy and Operative Surgery, exhibited on the subject.—Quain's large plates, Maclise, Dalrymple, &c.—The various surgical instruments and apparatus exhibited, and their uses and application explained and practically illustrated.

7. MIDWIFERY.—(Prof. Hall.)—Including diseases of females and infants, illustrated by a series of Drawings on a large scale; by humid preparations: by models in wax; and by the use of the artificial Pelvis.

8. MEDICAL JURISPRUDENCE.—(Prof. Howard.)—Includes Toxi-

cology—the modes of testing for poisons are exhibited,and post-mortem appearances illustrated by plates—Insanity, Public Hygiene and Medical Police are touched upon.

9. Clinical Medicine.—(Prof. Howard.)—Taught by lectures, and at the bed side—Physical Diagnosis taught practically and each pupil invited to take part in it—Examination of the urine, chemically and microscopically explained and illustrated.

10. Clinical Surgery.—(Prof. M'Callum.)—Taught in a similar manner. For both these Classes ample material is afforded by the cases at the Montreal General Hospital.

Beside the above classes, Students are required to attend one course of Botany and one course of Zoology. These branches are taught by Professors in the Faculty of Arts, and, although the Student is obliged to attend, he is not required to be examined on them.

LIBRARY AND MUSEUM.

The Library contains upwards of 3000 volumes, including the most useful books for reference, as well as the recent elementary ones; the works of the older authors as well as the most recent. It is open to the Students without charge, under necessary regulations for the care of the books. The Museum contains a large number, constantly augmenting, of preparations, chiefly pathological; also, wax and papier maché models.

HOSPITALS.

The Montreal General Hospital is visited every day by the Medical officers in attendance. After the visit a large number of out-door patients are examined and prescribed for.

The Operating Room (used also for a Lecture Room) is so constructed as to suit the convenience of the Students in obtaining a good view of the operations going on.

The University Lying-in-Hospital is under the direction of the Professor of Midwifery. Students who have already attended one course of his lectures, are furnished with cases in rotation.

PAST SESSION.

The number of matriculated Students in the past Session was 108. Of these, 54 were from Canada West, 50 from Canada East, 2 from Nova Scotia, 1 from Prince Edward Island, and 1 from the United States.

The number of Students who passed the primary Examination, which includes the branches of Anatomy, Chemistry, Materia Medica, and Institutes of Medicine, was 23; as follows.

Mr. L. J. A. McMillan, Rigaud.
" Napoleon LeClair, N. Lancaster.
" Arthur Lyon, Richmond.
" Francis W. Campbell, Montreal.
" Arthur C. Poussette, Sarnia.
" Louis Duhamel, Ottawa.
" F. X. Thyfault, Napierville.
" Fred. D. Sutherland, Montreal.
" Alex. McLean, Prince Ed. Island.
" Fred. J. Austin, Montreal.
" D. McGillivray, Lochiel.
" Wm. E. Bowman, Montreal.
Mr. John Erskine, Dunham.
" Ls. T. Turgeon, Terrebonne.
" W. P. O. Whitwell, Philipsburgh
" Jos. M. Drake, Montreal.
" D. McGregor, Glengarry.
" Edwin Brouse, Matilda.
" David Philip, Vankleek Hill.
" James Gun, Palermo, C. W.
" Peter McLaren, Drummond.
" Henry Ussher, Quebec.
" Jos. Godin, Montreal.

The number of Graduates this year has exceeded by one that of last year, which was considerably greater than the largest number of any former year. At the recent Convocation, held May 4th, 23 Gentlemen received the degree of M.D.

The following list contains the names of the Graduates and of their Inaugural Dissertations or Theses :—

John W. Pickup,	Montreal,	Saturnine Poisoning.
David Woods,	do	Sanitary Science.
Henry Warren,	Whitby,	Emphysema Pulmonum.
Robert W. Burnham,	Port Hope,	Bright's Disease.
George Lloyd McKelcan,	Hamilton,	Pneumonia.
Henri A. Mignault,	St. Denis,	On Life and Vital Force.
Arthur C. Poussette	Sarnia,	Opium.
Louis G. Turgeon,	Terrebonne,	Phthisis Pulmonalis.
Charles H. Donnelly,	Hamilton,	Abortion.
Wm. P. O. Whitwell,	Philipsburg,	Authygiansis.
Alex. Ault,	Aultsville,	Tetanus.
Adolphe Robillard,	Ottawa.	Puerperal Fever.
John Erskine,	Dunham,	Bibirina.
Gustave Chevalier,	Sorel,	Abortion.
Alexander McLean,	Prince E. Island,	Erysipelas.
Edwin A. Hulbert,	Prescott,	Tetanus.
William E. Bowman,	Montreal,	Hæmaturia.
Louis Robitaille,	Varennes,	Croup.
Louis J. A. McMillan,	Rigaud,	Pleurisy.
Israel W. Powell,	Port Dover,	Interm. Fever of U. C.
Francis W. Campbell,	Montreal,	Smallpox.
Henry Thos. Tait,	Melbourne,	Vesico-Vaginal Fistula.
Louis Duhamel,	Ottawa,	Apoplexy.

PRIZES.

The three Prizes granted by the Governors were awarded as follows :—

For the best Thesis the Prize was given to Mr. John W. Pickup, of Montreal, for his Essay on Saturnine Poisoning.

For the best Examination on the Primary Branches, the Prize was divided between Mr. Jos. M. Drake, and Mr. Fred. D. Sutherland, both of Montreal.

For the best Examination on the Final Branches, the Prize was adjudged to Mr. Henry Warren, of Whitby, C. W., who last year carried off the Prize for the Primary Branches.

The Professor's Prize in Materia Medica was awarded to Mr. Mills Church, of Mirickville, C. W.

The two Prizes in the Class of Clinical Medicine were awarded to Messrs. Henry Warren, of Whitby, and Robt. W. Burnham, of Port Hope.

The two Prizes in the Class of Clinical Surgery were adjudged to the same two Gentlemen.

EXTRACTS FROM THE REGULATIONS OF THE FACULTY.

Chap. I.

Relative to the Courses of Lectures, Fees, &c.

1st. Each Professor shall deliver at least Five Lectures during the week, except in the classes of Clinical Medicine and of Clinical Surgery, in which only two Lectures shall be required; and in that of Medical Jurisprudence, if extended through six months, in which case three Lectures a week shall suffice.

2nd. Each Lecture shall be of one hour's duration.

3rd. Every Professor shall occasionally examine his class upon the subjects treated of in his preceding Lectures; and every such examination shall be considered a Lecture.

4th. A Roll of the names of the Students attending each class shall be called from time to time.

5th. All tickets which have not a Certificate of attendance attached shall be rejected when presented as testimonials previous to examination, unless the omission can be satisfactorily accounted for.

6th. The Fee for each class shall be Three Pounds currency, with the following exceptions: for that of Medical Jurisprudence, Two Pounds Ten Shillings; and for those of Clinical Medicine and Clinical Surgery, One Pound Ten Shillings, each.

7th. Any student, after having paid the fees, and attended two courses of any class, shall be entitled to a perpetual ticket for that class.

8th. The course of all the classes, except those of Clinical Medicine, Clinical Surgery and Medical Jurisprudence, shall be of six months' duration; the Classes of Clinical Medicine and of Clinical Surgery of three months' duration; and that of Medical Jurisprudence, either of three months' duration, in which case Five Lectures a week shall be given, or of six months' duration, in which case only Three Lectures a week shall be required.

9th. The courses shall commence on the first Monday in November, and with the exception of a vacation at Christmas, shall continue to the end of April.

Chap. II.

Of the Qualifications and Studies of Students and Candidates for the Medical Degree.

1st. All Students desirous of attending the Medical Lectures of this University, shall, at the commencement of each Session, enroll their names and residences in the Register of the Medical Faculty, and procure from the Registrar a ticket of Matriculation, for which each Student shall pay a fee of Ten shillings.

2nd. The said Register shall be closed on the twenty-third day of December in each year; and no ticket obtained from any of the Professors shall be received without previous Matriculation.

3rd. No one shall be admitted to the Degree of Doctor of Medicine and Surgery who shall not either, 1stly, have attended Lectures for a period of at least Four Sessions in this University or some other University, College or School of Medicine, approved of by this University; or 2ndly, have studied medicine during at least Four years, and during that time have attended Lectures for a period of at least Three Sessions either in this University or some other University, College, or School of Medicine, approved of by this University.

4th. Candidates for the final Examination shall furnish Testimonials of attendance on the following branches of Medical Education, viz :

Anatomy,
Chemistry,
Theory and practice of Medicine,
Principles and Practice of Surgery,
Midwifery and Diseases of Women and Children,
Materia Medica and Pharmacy,
Clinical Medicine,
Clinical Surgery,
Practical Anatomy,
Institutes of Medicine,

} Of which two Courses will be required.

Medical Jurisprudence,

} Of which one Course will be required.

Provided, however, that Testimonials equivalent to, though not precisely the same as those above stated, may be presented and accepted.

5th. The Candidate must also give proof by ticket of having attended during twelve months the Practice of the Montreal General Hospital, or that of some other Hospital approved of by this University.

6th. Moreover, no one shall be permitted to become a Candidate for examination who shall not have attended at least one Session of this University, and during that Session at least four six months' classes, or three six months' and two three months' classes.

7th. Every Candidate shall, previous to the Medical Examination, give proof of competent Classical attainments, either by examination or otherwise.

8th. Every Candidate for the Degree must, on or before the first day of March, present to the Dean of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and also a Thesis or inaugural dissertation, written by himself, on some subject connected with Medical or Surgical Science, either in the Latin, English, or French Language. He must at the same time deliver to the Secretary of the Faculty the following Certificate :

MONTREAL——18—.

I, the undersigned, being desirous of obtaining the Degree of Doctor of Medicine and Surgery, do hereby declare that I have attained the age of twenty-one years, (or, if the case be otherwise, that I shall have attained the age of twenty-one years before the next graduation day,) and that I am not, (or shall not be at the time) under articles as a pupil or apprentice to any Physician, Surgeon or Apothecary.

(Signed,) A. B.

9th. The trials to be undergone by the Candidate shall be :

1st. An examination into his Classical attainments as a preliminary to the Medical Examinations.

N. B.—Students are recommended to undergo this Examination when they first begin their attendance at the College.

2nd. The private examination of his Thesis as evidence both of Medical and General acquirement, followed (if approved) by its public defence. And

3rd. A general examination on all the branches of Medical and Surgical Science.

N. B.—This examination will be divided into Primary and Final, the former comprehending the branches of Anatomy, Chemistry, Materia Medica, and Institutes of Medicine; the latter, those of Practice of Medicine, Surgery, Midwifery and Medical Jurisprudence.

N. B.—It will be optional with the Student to present himself for the primary examination at the end of his third session.

10th. The following Oath or affirmation will be exacted from the Candidate before receiving his Degree :

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis Collegii McGill.

Ego, A——— B———; Doctoratus in Arte Medica titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo, me in omnibus grati animi officiis erga hanc Universitatem ad extremum vitæ halitum, perseveraturum ; tum porro artem medicam, caute, caste, et probe exercitaturum, et quoad in me est, omnia ad ægrotorum corporum salutem conducentia cum fide procuraturum ; quæ denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

11th. The Fee for the Degree of Doctor of Medicine and Surgery shall be Five Pounds Halifax Currency, to be paid by the successful Candidate immediately after his examination, together with a Fee of Five Shillings to the Registrar of the Medical Faculty.

12th, The money arising from the Fees of Graduation, as well as those of Matriculation, shall be applied to the enlargement of the Medical Library and Museum, and to defraying their expenses.

BOOKS RECOMMENDED TO STUDENTS.

ANATOMY.—Sharpey and Quain, Wilson, Ellis, Dublin Dissector.

CHEMISTRY.—Graham, Kane, Silliman.

MATERIA MEDICA.—Pereira's Elements, Royle's Manual, Wood's Therapeutics, Pereira on Food and Diet.

INSTITUTES OF MEDICINE, *Physiology*.—Carpenter's Principles of Human Physiology, Kirke and Paget's Manual, Todd and Bowman's Physiological Anatomy.

Pathology.—Williams' Principles of Medicine, Chomel and Vogel's General Pathology.

SURGERY.—Chelius, Paget's Surgical Pathology, Miller's Principles and Practice, Fergusson's Practical Surgery.

PRACTICE OF MEDICINE.—Wood's Practice of Medicine, Watson's Practice of Physic, Hooper's Physicians' Vademecum by Guy, Barlow's Practice.

MEDICAL JURISPRUDENCE.—Beck's Elements, Orfila Medicine Legale, Devergie Medicine Legale, Theorique et Pratique, Christison on Poisons, Taylor's Jurisprudence, Guy's Forensic Medicine, Taylor on Poisons.

MIDWIFERY.—Churchill.

N.B.—Boarding may be obtained at from Twelve to Sixteen Dollars per Month.

FACULTY OF LAW.

The Principal (ex officio.)
Professors.—Badgley.
Abbott.
Torrance
Lafrenaye.
Laflamme.
Dean of the Faculty,—J. J. C. Abbott, Esq., B.C.L.

The several courses of lectures in the Faculty of Law, comprise every branch of Legal Study.

The Educational officers of this Faculty have felt that the Law of Lower Canada, though in many of its details purely local, retains, as its leading characteristics, the noble and imposing features of the civil law, and that the principles established in the Roman jurisprudence, still form the groundwork of many of its departments. The lectures, therefore, though prepared with especial reference to the law of Lower Canada, have been as far as consistent with their primary object, divested of any purely sectional character, and are made to inculcate such comprehensive principles, as form, to a great extent, the basis of every system of jurisprudence.

It is considered that this system will afford to students of the laws of Lower Canada, a better foundation for their subsequent studies, and tend to give them a more extended and comprehensive grasp of legal subjects, than a course of instruction conducted solely with reference to local law; while it is hoped, in view of the increased importance which the study of the civil law is everywhere assuming, that the advantages offered, and the mode of education adopted by this Faculty, will open to it an extensive field of usefulness.

The complete course of study in this Faculty extends over three years, but may be shortened to two years, when the student matriculates in the third year of his indentures.

The following are the subjects comprised in the complete course of three years :—

TO STUDENTS OF THE FIRST YEAR.

On Public and Constitutional law.

Professor Badgley.

On obligations, and on the general principles of the law of Contracts.

Professor Abbott.

On the Civil Law. The Rights of persons under the Roman law, property in possession, *jus in re.*

Professor TORRANCE.

On the origin and History of the Laws of France, of England, and of Lower Canada.

Professor LAFRENAYE.

On the Law of Real Estate and Customary Law.

Minority.
Tutors and Curators.
Husband and Wife.
Fiefs.
Servitudes.

Professor LAFLAMME.

TO STUDENTS OF THE SECOND YEAR,

On Public and Constitutional Law.

Professor BADGLEY.

On Commercial Contracts.

Agency.
Bailments.
Partnerships.
Bills and Notes.
Insurance.

Professor ABBOTT.

On the Civil Law.

Property in Action *jus ad rem*, or Obligations.—Actions—Public Judgments.

Professor TORRANCE.

On Legal Bibliography.

The Bibliography of English Law ;
of French Law ; and
of Canadian Law.

Professor LAFRENAYE.

On the Law of Real Estate and Customary Law.

Successions.
Donations and Wills.
Contracts of Marriage.
Community of Property.

Professor LAFLAMME.

TO STUDENTS OF THE THIRD YEAR.

On Criminal Law.

Professor BADGLEY.

On Commercial Contracts.

Shipping, and Merchant Seamen.
Sale.
Pleading.
Practice.

Professor ABBOTT.

On International Law.

Conflict of Laws.
Corporations.
Evidence.

Professor TORRANCE.

On Leases.
Deposits.
Sequestrations.
Pledges.
Suretyships.
Compositions.
Imprisonments.

Professor LAFRENAYE.

On the Law of Real Estate and Customary Law.
Dower.
Privileges and Hypotheques.
Prescriptions.
Judicial Sales.

Professor LAFLAMME.

Students who avail themselves of the privilege of attending two years only, will, nevertheless, be required to pass an examination in the subjects comprised in the three years' course.

Occasional Students will be received without matriculation, for attendance on any particular series of Lectures; and Students in the Faculty of Arts will be permitted to attend any of the courses, on such terms and conditions as may be fixed by that faculty.

The matriculation fee is ten shillings, payable only by Students who have not previously matriculated in any other faculty. The annual fee for the full course of Lectures is fixed for the present at three pounds ten shillings; for attendance on any one series of Lectures, one pound five shillings per annum, and the fee on graduation, including *diploma*, is one pound five shillings.

Students who have completed their course of three years,—or of two years, if they have commenced in the third year of their indentures,—and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Law Faculty, to the Degree of Bachelor of Civil Law.

Applications for admission may be made to the Dean of the Faculty or to the Secretary of the College.

STUDENTS OF THE UNIVERSITY.

Session 1859-60.

FACULTY OF LAW.

Ascher, Isidore, Montreal.
Armstrong, Louis, "
Aylen, John, Aylmer.
Bethune, Robert A., Montreal.
Bullock, William E., Georgeville.
† Carden, Henry, St. Cesaire.
Colovin, Mathew F., Montreal.
Cowan, Robert C., "
Curran, John J., "
De La Bruere, Boucher, "
Doutre, Gonsalve, "
Dougall, Duncan, Windsor.
De Saulniers, Alexis L., Riv. de Loup.
† Dunlop, John, Edinburgh.
Driscoll, Netterville, Montreal.
Desrocher, Jean Baptiste, L. Industrie.
Fontaine, Adolphe, Montreal.
Fontaine, Urgel, "
† Girouard, Desiré, St. Timothee.
Houghton, John J. K., Montreal.
Kelly, John P., "
Kirby, James, "
† Lanctot, Mederic, "
La Coste, Alexis, Montreal.
Leach, David S., "
Liston, James P., "
Nagle, Sarsfield P., "
M'Gee, T. D'Arcy, "
Mireault, Gilbert, "
McKenzie, Frederick, "
Ouimet, Adolphe, "
† Perkins, John A., Junior, "
Paré, Louis T., St. Athanase.
Pominville, Louis, Montreal.
Pagnuelo, Simeon, "
Plimsoll, Reginald J., "
Rochon, Charles A., St. Martin.
Richard, Louis Gedeon, L. Industrie.
Russell, Robert, Montreal.
† Sexton, James P., "
Tait, Melbourne, "
Trudeau, George, "
Trudel, Anselme, St. Prosper.
† Walsh, Thomas Joseph, Montreal.
Wilkes, Thomas H., "

† B. C. L., 1860.

FACULTY OF MEDICINE.

†Ault, Alexander, Aultsville, C.W.
Adams, Henry, Whitby, "
Aylen, James, Aylmer, C.E.
Alcock, Joseph, Beckwith. "
Austin, Frederick J., Montreal, "
Boyd, John, Huntingdon, "
Brown, Peter Eli, Lake of Two Mountains, "
Brouse, Edwin, Matilda, C.W.
Beatty, Daniel, Aylmer, C.E.
Bucke, Maurice Richd, Sarnia, C.W.
Battersby, Charles, Toronto, "
†Bowman, William E., Montreal, C.E.
Brathwaite, Francis H., Barrie, C.W.
†Burnham, Robt. W., Port Hope, "
Burland, John G., Montreal, C.E.
Campbell, Donald P., Breadalbane.
†Chevalier, Gustave, Sorel, C.E.
Church, Charles H., Aylmer, "
Church, Mills K., Mirickville, C.W.
Case, William H., Hamilton, "
Chesley, George A., Cornwall, "
†Campbell, Francis W., Montreal, C.E.
Drake, Joseph M., Montreal, "
DeBonald, Guillaume S., Berthier, "
†Duhamel, L., Ottawa, C.W.
Digby, J. W., Brantford, "
De Saulniers, Antoine, Riviere du Loup, C.E.
Devins, Richard J., Montreal, "
Duncan, George, Montreal, "
†Erskine, John, Dunham, "
Ferguson, Jas., Vankleek Hill, C.W.
Fulton, James H., Winchester, "
Ferguson, Alex. A., Cornwall, "
Fraser, George S., Montreal, C.E.
Fulford, Francis D., Montreal, "
Gibson, Edward B., Ottawa, C.W.
Godin, Joseph, Montreal, C.E.
Goldstone, Ed. A., Coburg, C.W.
Graham, Henry, Ottawa, "
Gun, James, Palermo, "
Gordon, William W., Bathurst, "
Gustin, William C., London, "
Grant, Donald J., Williamstown, "
Howey, William, Oxford, "
Hamilton, Rufus F., Clarceville, C.E.
Harkness, John, Matilda, C.W.
Hughes, John, Toronto, "
†Hulbert, Edwin A., Prescott, "
Hall, James B., Montreal, C.E.
Lafontaine, Louis, Chambly, "
Labelle, Jules, St. Rose, "
Lyon, Arthur, Richmond, C.W.

Lavoix, Francis A., Montreal, C.E.
LeClair, Napol'n, N. Lancaster, C.W.
Malcolm, John R., Oakland, C.W.
Mallock, Edward C., Ottawa, "
McIntosh, Robert, Newcastle, "
McGlashan, Andrew, Toronto, "
Marston, John J., L'Orignal, "
McGillivray, Donald, Lochiel, "
Morrison, Wm. S., Waddington, N.Y.
Morache, Adol. L., St. Jacques, C.E.
Marion, Alfred N., Contrecoeur, "
McGregor, Duncan, Glengarry, C.W.
Mirick, Edgar H., Mirickville, "
†Mignault, Henri A., St. Denis, C.E.
†McLean, Alexander, Prince Ed. Is.
McLaren, Peter, Drummond, C.W.
McDonald, Angus, Vankleek Hill, "
†McKelcan, George L., Hamilton, "
Mason, James L., St. Ann's, C.E.
Morris, William, Brockville, C.W.
†McMillan, Louis J. A., Rigaud, C.E.
McDonald, William, Montreal, "
Philip, David, Vankleek Hill, "
†Poussette, Arthur C., Sarnia, C.W.
†Pickup, John W., Montreal, C.E.
Prentiss, George W., Aylmer, C.E.
†Powell, Israel W., Port Dover, C.W.
Powers, George W., Sutton, C.E.
†Robillard, Adolphe, Ottawa, C.W
Russell, James T., Brantford, "
Read, Herbert H., Minudie, N.S.
Robertson, Charles, Quebec, C.E.
Reed, Perry H., Sutton, "
Richard, Marcel, St. Jaques, "
†Robitaille, Louis, Varennes, "
Ross, Thomas, Lancaster, C.W
Squire, William W., Montreal, C.E
Senkler, Albert E., Brockville, C.W
Sutherland, Fred. D., Montreal, C.E
Sproul, John E., Kingston, C.W
Stafford, Wm. A., Montreal, C.E.
Strobridge, Jas. G., Brantford, C.W.
Sinclair, Archibald, Kenyon, "
Therien, Honore, St. David,
†Turgeon, Louis G., Terrebonne, C.E.
Trenholme, E. H., Trenholmville, "
Tomkins, John, Dunham, "
Theriault, F. D., Beauharnois, "
†Tait, Henry T., Melbourne, "
Uniacke, Crofton J., Halifax, N.S.
Ussher, Henry, Quebec, C.E.
†Warren, Henry, Whitby, C.W.
Wood, George, Frost Village, C.E.
†Woods, David, Montreal, "
Walton, Thomas C., Toronto, C.W.
†Whitwell, W. P. O., Philipsburg, C.E.

† M. D., 1860.

FACULTY OF ARTS.

1. *Undergraduates.*

Babin, Jeremie, St. Johns.
Babin, Hosée, "
Bell, J., L'Orignal.
Boyd, J., Huntingdon.
† Bullock, W. E., Georgeville.
Burton, John, Brockville.
Clowe, John D., Richmond.
Cushing, Lemuel, Chatham.
Davidson, Chas. P., Poteau Landing.
† Dougall, D., Windsor, C. W.
† Dougall, J. R., Montreal.
De Witt, C. S., "
Drummond, E., "
Ferguson, J. S., "
Fortin, Alfred, Christieville.
Fortin, Octave, "
Gore, Frederick, Simcoe.
Grant, William Brompton.
Greene, Lonsdale, Montreal.
Greene, Joseph, Huntingdon.
Hall, W., Montreal.
Jones, R. A. A., St. Johns.
Lyman, Frederick, Montreal.
McCord, David, "
McDougall, A. M., Three Rivers.
McPherson, Murdoch, Pictou, N.S.
Ouellet, Charles, Quebec.
O'Connor, Daniel, Montreal.
Patton, Thos., Prescott.
Plimsoll, Arthur H., Montreal.
Ramsay, Robert A., "
Rogers, Fitzgerald, "
Ross, George, "
Shanks, W. H., Quebec
Trenholme, N. W., Trenholmville.
Wicksted, R. J., Quebec.
† Walker, T., Clinton, C. W.
Wright, W. Mc K., Hull.
Walkem, Richard T. M., Montreal.

2. *In Special Course of Engineering.*

Bell, R., L'Orignal
Doupe, J., Camden.
§ Frost, G. H., Smith's Falls.
§ Kirby, C. H., Montreal
Murray, J. Montreal
§ Ross, A., do.
Reid, John E., Bowmanville
§ Savage, J., Montreal.
Sinclair, M., Ottawa
Smyth, W., Montreal.
§ Walker, T., Clinton, C. W.

† B. A., 1860. § Graduate in Civil Engineering, 1860.

3. *Partial Students.*

Blackwell, Charles
Day, E. T.,
Edwards, J.,
Esdaile, J.
Forbes, James
Leach, D. S.
Fessenden, Elisha J.
Matheson, James
Russell, Robert
Wainwright, George H. R.
White, Joseph

The above are exclusive of Occasional Students in Arts, of whom there were 34.

PRIZES, HONORS, AND STANDING, OBTAINED BY STUDENTS, SESSION 1859-60.

FACULTY OF LAW.

RANKING OF STUDENTS AS TO GENERAL PROFICIENCY.

3rd Year.

Desiré Girouard, 1st Prize; John Dunlop, 2nd Prize;

2nd Year.

David S. Leach, Reginald J. Plimsoll, eq., 1st Prize; Frederick McKenzie, 2nd Prize;

1st Year.

James Kirby, B. A., 1st Prize; John P. Kelly, Samuel Pagnuelo, eq. 2nd Prize.

STANDING IN THE SEVERAL CLASSES.

Prof. Lafiamme.

3rd Year.

Desiré Girouard, 1st; John Dunlop, Thomas Joseph Walsh, eq. 2nd.

2nd Year.

Reginald J. Pimsoll, David S. Leach, eq. 1st; Frederick Mackenzie 2nd.

1st Year.

Simeon Pagnuelo, 1st; John P. Kelly, James Kirby, B. A., eq. 2nd.

Prof. Lafrenaye.

3rd Year.

Desiré Girouard, T. J. Walsh, eq. 1st; John Adams Perkins, 2nd.

2nd Year.

Frederick Mackenzie, 1st; Reginald J. Plimsoll 2nd.

1st Year.

James Kirby, B. A., John P. Kelly, eq. 1st; Simeon Pagnuelo, 2nd.

Prof. Torrance.

3rd Year.

Desiré Girouard, 1st; John Dunlop, 2nd.

2nd Year.

Reginald J. Plimsoll, 1st; Frederick Mackenzie, 2nd.

1st Year.

James Kirby, B. A., 1st; John G. K. Houghton, 2nd.

Prof. Abbott.

3rd Year.

Desiré Girouard, 1st; John Dunlop, 2nd.

2nd Year.

David S. Leach, 1st; Reginald J. Plimsoll, 2nd.

1st Year.

James Kirby, B. A., 1st; John G. K. Houghton, 2nd.

FACULTY OF MEDICINE.

PRIZES,

HENRY WARREN, (Whitby,) For best final examination.
J. M. DRAKE, } —Best Primary.
FRED. D. SUTHERLAND, }
J. W. PICKUP,—For best Inaugural Dissertation.
MILLS CHURCH,—Essay on Tobacco—Prize in Materia Medica.
H. WARREN,—For best reports of six cases, Prize in Clinical Medicine.
ROBERT W. BURNHAM,—For best reported (single) case.
ROBERT W. BURNHAM,—For best reports of six cases, Prize in Clinical Surgery.
H. WARREN,—Prize for best written answers on cases treated in Clinical wards.

FINAL EXAMINATIONS.

Wm. E. Bowman, John W. Pickup, Robert W. Burnham, Alex. Ault, Louis G. Turgeon, Arthur C. Poussette. Charles H. Donnelly, George L. McKelcan, W. P. O. Whitwell, Henri A. Mignault, L. J. A. McMillan, David Woods, Alexander McLean, John Erskine, Francis W. Campbell, Henry Thomas Tait, Louis Duhamel, Adolphe Robillard, Edwin A. Hulbert, Gustave Chevalier, Israel W. Powell Louis Robitaille, Henry Warren, John Rolph Malcolm, Herbert H. Read, Charles Battersby.

FACULTY OF ARTS.

HONORS AND PRIZES.

Graduating Class.

BULLOCK.—Chapman Medalist, 1st rank Honors in Classics, Prize in Hebrew, Prize in French.

Students of the Third Year.

GREENE.—Second Prize in Moral Philosophy, First rank Honors, and Prize in Greek and Latin, Second Prize in German, Prize in Botany, Prize in Hebrew.
WRIGHT.—First Prize in Moral Philosophy.
SQUIRE.—Prize in Botany.

Students of the Second Year.

ROSS.—First rank Honors and First Prize in Mathematics, Prize in French. (High School, Montreal.)
RAMSAY.—First rank Honors and Second Prize in Mathematics, Prize in Latin. (High School, Montreal.)
HOSIAS BABIN.—Prize in Greek, Second rank Honors in Mathematics. (Bishop's College Lennoxville.)
SQUIRE.—Prize in Zoology. (Queen's College, Kingston.)
DRUMMOND.—Second Prize in Mathematics, Prize in Zoology. (High School, Montreal.)
MCDOUGALL.—Prize in Logic. (Rev. J. Thom, Three Rivers.)
OCTAVE FORTIN.—Prize in French. (Bishop's College Lennoxville.)

First Year.

TRENHOLME.—First General Honors, First rank Honors in Mathematics, Second Prize in English Literature, First Prize in Classics, Prize in History. (St. Francis College, Richmond.)
WALKEM.—First General Honors, First Prize in English Literature, First rank Honors and Second Prize in Mathematics, Prize in Classics, and Prize in Chemistry. (High School Montreal.)
DAVIDSON.—First General Honors. (Victoria College, Coburg.)
BURTON.—First rank Honors in Mathematics, Prize Poem and Prize Essay.

CUSHING.—Second General Honors, Prize in German, Second Prize in English Literature Second Class. (Rev. J. Braithwaite, Chambly.)
ROGERS.—Second General Honors.
JEREMIE BABIN.—Second rank Honors in Mathematics. (Sabrevois Mission.)
CLOWE.—First Prize in English Literature Second Class. (St. Francis College, Richmond.)

Graduating Class in Engineering

FROST.—Prize in Engineering and Drawing.
R. BELL.—First rank Honors in Geology and Prize.
A. ROSS.—Second rank Honors in Geology.

STUDENTS IN THE FACULTY OF ARTS WHO HAVE PASSED THE DEGREE AND SESSIONAL EXAMINATIONS.—SESSION OF 1859—60.

LOGIC, MENTAL AND MORAL PHILOSOPHY AND RHETORIC

Ordinary B. A. Examination—Class 1st: Bullock. Class 2d: D. Dougall, J. R. Dougall.
Fourth Year (Rhetoric)—Class 1st: Bullock. Class 2d: J. Dougall, Walker, D. Dougall.
Third Year (Moral Philosophy and Mental Science)—Class 1st: Wright (First Prize); J. Green (Second Prize). Class 2d: Boyd, Dewitt: Unclassed—Gore.
Second Year (Logic)—Class 1st: McDougall (prize), Day, Ross, Drummond. Class 2d: Ramsay, Jones, McCord, O. Fortin, H Babin.
First Year (English Language and Literature)—Class 1st: Walkem, (1st prize) Trenholme (2d prize), Davidson, Shanks, Burton. Class 2d: Clowe (1st prize), Cushing (2d prize), R. Bell, O'Connor.

GREEK.

Ordinary B. A. Examination—Class 1st: Bullock. Class 2d: D. Dougall. Unclassed: Walker, J. R. Dougall.
Third Year Class 1st: Greene (prize). Class 2d: Fergusson, DeWitt, Gore. Unclassed: Wright.
Second Year—Class 1st: Babin (prize), Fortin, Ramsay. Class 2d: Jones, McDougall, Ross, Drummond. Unclassed: None.
First Year—Class 1st: Trenholme (1st prize), Walkem, Burton, Cushing, Davidson. Class 2d: Rogers, Plimsoll, L. Green, Wicksted, Bell, Lyman, Babin, Fortin. Unclassed: Clowe, O'Connor.

LATIN.

Ordinary B.A. Examination—Class 1st: Bullock. Class 2d: J. R. Dougall. Unclassed: D. Dougall, Walker.
Third Year—Class 1st: Green (prize), Wright. Class 2d: Ferguson, DeWitt, Gore. Unclassed: None.
Second Year—Class 1st: Ramsay (prize), Fortin, Ross, Jones, Babin, McDougall. Class 2d: Drummond, McCord, Day. Unclassed: Esdaile.
First Year—Class 1st: Trenholme, Walkem (prize), Rogers, Davidson, Cushing, Plimsoll, Shanks, Wicksted, Burton, Clowe, Bell. Class 2d: Lyman, O'Connor, Green, Babin. Unclassed: Fortin.
CLASSICS—B.A. Honors—First Rank, Bullock.
Third Year—Honors—First Rank, Green.

HISTORY.

First and Second Years—Class 1st: Trenholme, Walkem, Babin, Rogers, Lyman, Cushing, O. Fortin, Davidson, Jones, Shanks. Class 2d: Wicksted, J. Babin, Fessenden, O'Connor, A. Fortin, Bell. Unclassed: Day, L. Green, Plimsoll, McDougall, Esdaile.

MATHEMATICS AND NATURAL PHILOSOPHY.

Ordinary B.A. Examination—First Class: 1. William Bullock, 2, Thomas Walker. Second Class: Duncan Dougall. Unclassed: John Redpath Dougall.

Third Year.—First Class: 1. Frost, 2. Wright, 3. DeWitt, 4. Ross, 5. Robert Bell. Second Class: None. Unclassed: Boyd, Doupe, Joseph Greene.

Second Year—First Class: 1. George Ross (prize), 2. Reid, 3. Ramsay (prize), 4. Hosias Babin, 5. Drummond (prize), 6. Day. Second Class: McDougall. Unclassed: Octave Fortin, McCord, Patton, Sinclair.

First Year—First Class: 1. Davidson, 2. Trenholme, 3. Walkem (prize), 4. Plimsoll, 5. Rogers, 6. Bell, 7. Babin. Second Class: 1. Cushing, 2. Burton, 3. Shanks. Unclassed: Clowe, Greene, Lyman.

Third Year—Honors—None.

Second Year—Honors—First Rank—1. Ross, 2. Ramsay.
Second Rank—1. Hosias Babin.

First Year—Honors—First Rank—1. Trenholme, 2. Walkem, 3. Burton.
Second Rank—Jeremie Babin.

NATURAL SCIENCES.

Ordinary B. A. and Engineering Examinations—(Geology)—Class 1st: Bell (1st honor and prize), Dougall. Class 2nd: Ross (2nd honor), Bullock and Frost, equal. Unclassed: Doupe, Sinclair.

Third Year—(Botany)—Class 1st: Squire (prize), Greene (prize), DeBonald, Class 2nd: Wright, Ferguson. Unclassed: DeWitt, Boyd, Gore.

Second Year—(Zoology)—Class 1st: Squire (prize), Drummond (prize). Class 2nd: Ross, McCord. Unclassed: Jones, Ramsay. McDougall.

First Year—(Chemistry)—Class 1st: Walkem (prize.) Class 2nd: Wicksted, Lyman, Greene, Bell, Rogers, Davidson, Shanks, Fortin. Unclassed: Cushing, Fessenden, O'Connor, Babin, McPherson, Trenholme, Plimsoll, Clowe.

FRENCH.

Ordinary B. A. Examination—Class 1st: Bullock (prize), J. R. Dougall. Class 2nd: D. Dougall, Walker.

Third Year—Class 1st: Octave Fortin (prize), DeWitt, Hosias Babin, Alfred Fortin, Jeremie Babin. Class 2nd: Wright.

Second Year—Class 1st: Arthur Ross (prize), McDougall, George Ross, Ramsay, Jones. Class 2nd: McCord, Doupe, Robert Bell, Drummond. Unclassed: Day, Esdaile, Sinclair.

First Year—Class 1st: O'Connor, Cushing, Walkem. Class 2nd: Rogers Plimsoll, Shanks, Wickstead. Unclassed: Lyman, Trenholme, Bell, Davidson, Green.

GERMAN.

Senior Division—Class 1st: Green (2nd prize), Rogers. Class 2nd: Drummond.

Junior Division—Class 1st: Cushing (1st prize); Trenholme. Class 2nd: Shanks. Unclassed: O'Connor, Plimsoll, Russell.

HEBREW.

Senior Division—Class 1st: Bullock (prize), J. R. Dougall.

Junior Division—Class 1st: J. Greene (prize), Burton. Class 2nd: Grant.

ENGINEERING.

Senior Year—Class 1st: Savage, Frost (prize). Class 2nd: Ross, Walker. Unclassed: Kirby.

Junior Year—Sinclair, Reid.

GRADUATES OF THE UNIVERSITY.

DOCTORS OF DIVINITY.

Rev. John Bethune, (ad eundem) 1843
Rev. Daniel Falloon,....(Hon.) 1844

DOCTORS OF LAWS AND OF CIVIL LAW.

Rev. Francis Lundy,(D.C.L.hon.)1843
Hon. Wm. Badgley, (D.C.L.hon.)1843
*Hon. J. R. Vallieres De St. Real, (D.C.L. Hon.).....1844
Rev. Wm. T. Leach,(D.C.L.Hon.)1849 (LL.D. Hon. 1857.)
Rev. William A. Adamson, (D.C.L. Hon.).....1850
Rev. Benjamin Davies, Ph.D. (LL.D. Hon.).....1856
Sir William E. Logan, Knt.(LL.D. Hon.).....1856
Charles Smallwood, M.D. (LL.D. Hon.).....1856
Hon. Pierre J. O. Chauveau, (LL.D. Hon.).....1857
John William Dawson, M.A. (LL.D. Hon).....1857
Edmund A. Meredith,B.C.L.(LL.D. Hon.).....1857
William Smith, (LL.D. Hon.)...1858
Rev. A. DeSola, (LL.D Hon.)...1858
Andrew F. Holmes, M.D. (LL.D. Hon.).....1858

DOCTORS OF MEDICINE.

1833.

William Logie,.....L.C.

1834.

Roderick Macdonald,.....U.C.
*E. P. McNaughton,.....L.C.
John Finlayson,.....Scotland.

1835.

Joseph Workman,.....L.C.
Frederick W. Hart,..... do
Pierre Dansereau,..... do

1836.

William Sutherland,.....L.C.
*Louis H. Gauvreau,..... do
Robert T. Reynolds,.....U.C.
William Fraser,.....L.C.

1841.

Terence Sparham,..... U.C.
Samuel McMurray,.....L.C.
Charles D. DeCelles,..... do

1842.

*Thomas Reynolds,.....U.C.
*Thomas L. B. Meredith,.....L.C.
David D. Logan,..... do
Louis Boyer,..... do
Charles Dansereau,..... do
*James Thomson,.....England.
*James R. Dick,.....L.C.

1843.

Augustus Carson,.....England.
*Severe Dorion,.....L.C.
John L. Leprohon, ... do
Jean G. Bibaud,..... do
Jean M. Paquin,..... do
*William Oscar Dunn,..... do
Charles B. de Boucherville,..... do
Andrew F. Holmes,....(ad eun.) do
Geo. W. Campbell,M.A.,(ad eun.) do
Archibald Hall, ...(ad eun.) do
Stephen C. Sewell,....(ad eun.) do
*Michael McCulloch,.....(Hon.) do
Olivier T. Bruneau,.....(Hon.) do

1844.

Eugene Trudel,.....L.C.
Philias Proulx,..... do
Rufus Holden,.....U.C.
Alexander Long,.....L.C.
William E. Scott,..... do
William H. Wagner,.....U.C.
Robert Godfrey,.....L.C.

1845.

Pierre Fortin,.....L.C.

1846.

William Kelly, Surgeon, Royal Artillery.
A. Thomas Jackson, Staff Surgeon in the Army.
*Andrew Aylmer Staunton, Surgeon, Royal Artillery.
Stephen Sewell Foster,.....L.C.
John Wilbrod Wilscam,..... do
*Alfred Malhiot,..... do
James J. Dickinson,.....U.C.
*George Augustus Scriven,..... do
Henry Paradis,.....L.C.
George D. Gibb,..... do
Peter H. Church,.....U.C.

1847.

Geo. Edgeworth Fenwick,.....L. C.
John Duncan McDiarmid, Staff Surgeon in the Army.
Peter A. McDougall,.....U. C.
William Mayrand,.....L. C.
*Peter Warren Dease,..... do
William H. Brouse,.....U. C.
Darby Bergin,.....U. C.
Christopher Widmer, Toronto, (Hon.).....U. C.
James Sampson, Kingston,(Hon.) U. C.
*Daniel Arnoldi, Montreal, (Hon.) L.C.
James Douglas, Quebec, (Hon.) L. C.
A. B. Larocque,.....L. C.
Samuel B. Schmidt,..... do

* Deceased.

*John Fisher,.....L. C.
William Irwin Breslin, Asst. Surgeon, 46th Regiment of Line
*Alexis Pinet,.....L. C.

1848.

T. W. Smythe,.....U. C.
Thomas Christie,.....L. C.
Josiah G. Whitcomb..... do
John W. Hall,..... do
Josiah S. Brigham,.....L.C.
William McGill,.....U.C.
*John Rolph Lee,..... do
Albert Baker,.....England.
Joseph R. Culver,.....U.C.
R. Palmer Howard,.....L.C.
William Wright,..... do
Peter Henderson,..... do
Pierre F. Longpré,..... do
Edward S. L. Painchaud,..... do
André Seguin,..... do
Léonard Lepailleur,..... do
Wolfred Nelson, Montreal, (Hon.) L.C.

1849.

Jules M. Quesnel,.....L.C.
*John N. Buxton,..... do
Moïse Sabourin,..... do
Francis Challinor,.....England.
Thomas McGrath,.....L.C.
*Israel P. Marr,.....U.C.
George C. Wood,.....Ireland.
Eneas McDonnell,.....U.C.
William Odell,.....Surgeon, 19th Regiment of the Line.

1850.

Duncan C. McCallum,.....L.C.
Amos S. Bristol,.....U.C.
George W. Sanderson,..... do
John A. Nelles,..... do
Jonathan M. Vannorman,..... do
*Enoch P. Dorland,..... do
Robert M. Wilson,..... do
André Loupret,..... do
Charles Lemoiue,..... do
Olivier Raymond,..... do
Josh. Morrin, Quebec. (Hon.) L. C.

1851.

Remi Claude Weilbrenner,.....L. C.
William H. Hingston,..... do
*Peter O'Carr,.....U. C.
George McMicking,..... do
Robert Walker,..... do
Samuel T. Brooks,.....L. C.
John J. Blacklock,.....U. C.
Onesime Bruneau,.....L. C.
Charles E. Casgrain,..... do
George Leclere,..... do
John W. Moont,.....U. C.

1852.

Robert Thompson .....L. C.
Richard Weir,.....U. C.
Edward H. Bucke,..... U.C.
Joseph Moore,..... do
Joseph Garvey,..... do
John Easton,..... do
Victor Perrault,.....L. C.
Eric B. Sparham,.....U. C.
George Henry Boulter,..... do
Henry Thomas Ridley,..... do
Burnham G. G. Demorest,..... do
Newton W. Powell,..... do
Allen Ruttan,..... do
Angus McDonnell,.....L. C.
*Amable Simard,..... do

1853.

Henry A. Tuzo,.....L.C.
Benjamin Workman,..... do
Adolphe Bruneau,..... do
*Stephen Duckett,.....L.C.
Colin Macdonald,.....U.C.
Richard Moore, ...Ireland.
John Rae, Hamilton, (Hon.) .....U.C.
Walter Henry, Belleville, (Hon.) C.W.

1854.

*James Crawford, ...(ad eun.) L.C.
Thomas W. Jones,..... do do
Augustus M. Corbett,.....U.C.
William H. Corbett, ... do
Robert Craik, ...L.C.
*Joseph P. Phelan,.....U.C.
James A. Grant, ... do
Thomas Simpson,.....L.C.
*David M. Rintoul,..... do
Cornelius H. O'Callaghan,....Cuba.
Alfred J. Burns,.....U.C.
Thomas Y. Savage,..... do
Walter Mackay,..... do
Hermon L. Cook, ... do
Peter Rolph Shaver,..... do
Stephen A. Scott,..... do

1855.

Nelson Loverin,.....U.C.
Eliphalet G. Edwards,..... do
John L. Stevenson,..... do
Coller M. Church, ...L.C.
John B. Gibson,..... do
George Pringle,.....U.C.
*James Paterson,..... do
Charles Ault,..... do
James F. Ault,..... do
Elzear Gauvreau,.....L.C.

1856.

W. Justus Jones,.....U.C.
Joseph Alex. Hamel,.....L.C.
Ed. Laberge,..... do
Jos. G. P. Dupuis,..... do
Alex. H. Kollmyer,..... do
Walter J. Henry,..... do
*A. Kirkpatrick,.....U.C.
James C. Lee,..... do
James McGregor Stevenson,.... do

1857.

Alex. D. Stevens,.....L.C.
Levi R. Church,..... do
A. C. E. Picault,..... do
Henry Shoebottom,..... do
Robert Howden,..... do
David T. Robertson,..... do
William Wilson,..... do
Etienne R. R. Riel,.....U.C.
John Allen,.....L.C.
R. Whiteford,..... do
R. N. Shaver,.....U.C.
John McMillan,..... do
Andrew A. Boylan,..... do
Gordon J. Emery,..... do

1858.

*James Kerr,.....U.C.
T. F. English,..... do
Jas. McGarry,.....L. C.
Wm. Harkin,.....L. C.
George Pattee,.....L. C.
L. T. Robitaille,..... do
Wm. H. Taylor,..... do
C, W. E. Glenn,..... do
James S. Duncan,..... do
Alex. Peter Reid,.....U. C.
W. C. Thurlow Cunynghame, L. C.

1859.

Patrick O'Leary,.....L. C.
John Rambaut, Surgeon, Canadian Rifles.....
William A Duckett,.....L. C.
Edward W. Smith,..... do
Philippe Giroux,..... do
E. Gilbert Provost,.....L. C.
Stephen Wright,..... do
Linus O. Thayer,..... do
Edwards T. Roberts,..... do
William M.H. King,.....L. C.
James Joseph O'Dea,.....U. C.
Andrew W. Hamilton,..... do
James McIntosh,..... do
James Stephenson,..... do
*Thomas Keeler,..... do
Samuel A. Carter,..... do
Irvine Bogart,..... do
Robert W. W. Carroll,..... do
William Rumsey,..... do
Walker H. Marr,..... do
George W. Hurlburt,..... do
Samuel S. Macklem, ... do

1860.

Henry Warren,.....C. W.
Alexander Ault,.....C. W.
Adolphe Robillard,.....C. W.
David Woods, L. R. C. S. I, Staff Surgeon,.....C. E.
Louis G. Turgeon,..... do
John Erskine,..... do
Gustave Chevalier,..... do
William P. O. Whitwell,..... do
Henri Adolphe Mignault,..... do
Alexander McLean,.....P. E. I.
Arthur Courthope, Poussette,..C. W.
Edwin Augustus Hulbert,.....C. E.
John Wallwork Pickup,..... do
William Edward Bowman,..... do
Robert Wilkins Burnham,.....C.W.
George Lloyd McKelcan,..... do
Louis Robitaille,.....C. E.
Louis J. A. McMillan,..... do
Israel Wood Powell,.....C.W.
Francis Wayland Campbell,....C.E.
Henry Thomas Tait,..... do
Charles H. Donnelly,.....C.W.
Louis Duhamel, ... do

MASTERS OF ARTS.

Alex. Morris, B.A., B.C.L.,.....1852
Rev John Butler.....(Hon.) do
Rev. Charles Bancroft, (ad eun.) 1855
Henry Aspinwall Howe, (Hon.) do
Thomas A. Gibson,.... (do) 1856
George D. Gibb, M.D... (do) do
Brown Chamberlain, B. C. L. (ad eun).....1857
David Rodger.....(Hon.) 1857
John H. Graham,..... (do) 1859
William M. Bowman,.. (do) do
Edwin Gould, B.A.,.....1860
Robert A. Leach, B.A., B.C.L... do
Rev. John Kennedy, B.A.,..... do

BACHELORS OF CIVIL LAW.

Christopher C. Abbott,.....1850
Alexander Morris,..... do
William B. Lambe,..... do
Brown Chamberlin,..... do
Romeo H. Stephens,..... do
Alexander Molson,.....1851
Frank H. Badgley,.....1852
John J. C. Abbott,.....1854
Peter Aylen, B.A..... do
Edward J. Hemming,.....1855
John G. Barnston,.....1856
William F. Gairdner,..... do
R. G. Laflamme,.....(Hon.) do
P. R. Lafrenaye,..... (do) do
H. L. Snowdon,..... do
Frederick W. Torrance, M. A. (Hon.)..... do
Dunbar Browne, B. A.,.....1858
Isai Jodoin,..... do
J. G. Daly,..... do

Pierre Doutre,.....1858
Zephirin Gauthier,.....1859
Damase F. J. Ricard,..... do
Chas. Ambroise Pariseault,..... do
Edson Kemp, B. A..... do
Robert A. Leach, B.A.,..... do
John L. Morris,..... do
Telesphore Larose,..... do
John Robert McLaren,.....1859
Desiré Girouard,.....1860
Thomas Joseph Walsh,..... do
John Dunlop,..... do
James Ponsonby Sexton,..... do
Henry Carden,..... do
Mederic Lanctot..... do
John A. Perkins..... do

BACHELORS OF ARTS.

Alexander Morris,.....1849
Peter Aylen,.....1850
Rev. Charles B. Pettit,..... do
Charles E. Bockus,.....1852
Charles W. Phillips,..... do
George T. Stethem,..... do
Thomas Browne,.....1853
Edwin Gould,.....1856
John R. McLaren,..... do
Dunbar Browne,..... do
*Philip G. Kershaw,.....1857
Alexander Barnston,..... do
George D. Redpath,..... do
Robert W. Ferrier,..... do
Robert A. Leach,.....1857
Harry McLaren,.....1858
Reginald J. Plimsoll,..... do
John A. Perkins,..... do
James Kirby,.....1859
James L. Mason,..... do
Corydon J. Mattice,..... do
William Morris,..... do
Edson Kemp,..... do
William E. Bullock,.....1860
John Redpath Dougall,..... do
Duncan Dougall,..... do
Thomas Walker,..... do

GRADUATES IN CIVIL ENGINEERING.

Oliver Gooding,.....1858
Christopher McLennan,.....1859
Alexander Barnston, B.A..... do
Robert Crawford,..... do
Thomas Walker,.....1860
George H. Frost,.....1860
Charles H. Kirby,..... do
Joseph Savage,..... do
Arthur Ross,..... do

HIGH SCHOOL DEPARTMENT

OF

M'GILL COLLEGE.

1860-61,

Rector.— Prof. H. ASPINWALL HOWE, M. A.
Classical and Senior English Masters. T. A. GIBSON, M. A.; W. KAY, M. A.; J. MARTLAND, B. A.
Mathematical Master.—D. RODGER, M. A.
Junior English and Writing Masters. J. KEMP; J. M. REID,
French Master.—Prof. P. J. DAREY, M. A.
German Master.—Prof. C. F. A. MARKGRAF.
Elocution Master.— J. ANDREW.
Drawing Master.— J. DUNCAN.
Music Master.— J. FOLLENUS.
Book-Keeping.— A. GRANT.

This School offers the higher kind of instruction and the mental training which together constitute the foundation of what is called a *Liberal Education.* As a Department of the University, it offers a thorough preparation for the College course.

The Session commences on the 1st September and terminates in the first week in July, when a Public Examination is held, and Prizes and Honours awarded to the deserving, The Session is divided into four equal Terms. At the end of each Term, class examinations are held, and a full report of the progress and conduct of the Pupil is sent to the Parent.

For admission into the lowest Form, it is required that the Pupil shall have attained the age of seven years, and be able to read moderately well. If more advanced, he will be examined and classed according to his proficiency. Regular early training, however, is of so great importance, that the entrance of a pupil should not be delayed beyond the age of nine. The best time for entrance is immediately after the Summer Vacation, as the classes are then remodelled for the year. The course extends over a period of six or seven years, a general promotion taking place only once a year.

As the object in view is to give a sound general mental training quite as much as a knowledge of special subjects, no Pupil will be permitted to indulge excessive partiality for any one study to the neglect of others. The whole of the subjoined course is, therefore,

to be considered as obligatory upon all the Pupils, and a departure from it will be conceded only when really desirable or necessary.

Latin and *Greek* are made the basis of the Language Division of the course, as Geometry is that of the Mathematical Division. They are made imperative in the course, because they are the best means of training boys into a sound knowledge of general Grammar and of their mother tongue, and facilitating the acquisition of the modern languages; they are taught also with reference to the learned professions, for which a knowledge of them is required, and because they possess innate perfections and beauties, which, expanding to the mind of the advanced School-boy, are among his inducements to become a College Student. The time, however, devoted to the Ancient Languages is not excessive, being limited to at most two hours daily, and leaving ample time for the modern branches of Education.

A sound knowledge and correct writing of *English* is regarded as of paramount importance, and the study of Latin and Greek is mainly subservient to it.

In connexion with this branch regular lessons in Elocution are given throughout the school by a well qualified Teacher of the Art.

The *French* and *German* languages form a part of the ordinary course. Much attention is given to the former, because it is one of the colloquial languages of the country.

Mathematics have an hour daily assigned to them as soon as the faculties of the Pupil are sufficiently developed to cope with the difficulties of the subject. They are the grand means of strengthening and disciplining the reason; a knowledge of them is indispensable in the Engineering profession and in the Mechanical Arts; and the pursuit of them affords a very high and pure pleasure to the active and inquiring mind.

In teaching *History* and *Geography*, the aim will be to impart correct general views of these subjects with a particular knowledge of those countries which most nearly concern us. By judicious illustrations something more is made of them than a dry catalogue of facts and names. The senior Pupils can, by the payment of a trifling fee, attend the University lectures on *Physical Geography* and *Geology*.

The elements of *Natural Philosophy* form part of the course of the Senior Form. This subject has been selected from the Natural Sciences, because it is properly the first in order if not the most important of them. The senior Pupils can however, attend the University Lectures on *Zoology* and *Botany*.

The other subjects of a school course,—*Arithmetic*, *Writing*, *Book-keeping*—so indispensable in a commercial community, have their full share of time and attention, and are not neglected for the study of Latin and Greek.

In the *Religious Instruction*, which is part of the course, there is nothing of a sectarian character; the truths of the Christian re-

ligion and the principles of morality which flow out of it are made the subject of regular teaching, and are impressed upon the Pupils whenever occasion requires or opportunity offers.

Linear Drawing and *Vocal Music*, formerly voluntary subjects, are now included in the regular course without additional charge.

The Pupils are required to prepare themselves every evening in their work for the ensuing day. Their progress will depend very much upon the diligent performance of this duty, which ought to occupy them from one to two hours. The class-roooms are always open to visitors; and parents having sons at the School are earnestly invited to frequent intercourse with the masters, so as to aid them in securing that regularity and industry, without which education is but the stone of Sisyphus. The classes are visited periodically by a Committee of the Governors.

The school building is in a healthy and airy situation, and has convenient interior arrangements with those modern improvements which secure proper warmth and ventilation.

The Rector, who resides a short distance from the city has made arrangements to receive a limited number of Pupils of the High School to board with him, and he will devote his time to their improvement.

COURSE OF STUDY FOR THE SESSION 1860-61.

PREPARATORY FORM.

Hours, 9 to 11 A. M., and 1 to 3 P. M.

Subjects of Study.	Text-Book Used.
English.	
Reading and Spelling. Recitation. Formation and Derivation of Words.	Dublin Commissioners' 3rd Book of Lessons. M'Culloch's Series of Lessons. Vasey's Spelling Book.
First Ideas of Grammar. Elocution.	Bullion's Practical Lessons in English Grammar.
Geography.	
Outlines of the Subject.	Cornwell's Geography and Atlas.
Arithmetic.	
The Four Fundamental Operations.	No Text-Book required.
Religious Instruction.	
The Gospel of St. Mark.	The New Testament.
Writing.	

FIRST FORM.

Hours, 9 to 12 A. M., and 1 to 3½ P. M.

Subjects of Study.	Text-Books Used.
Latin.	
The Accidence of the Grammar.	The Edinburgh Latin Rudiments.
Easy Translations	Schmitz & Zumpt's Elementary Latin Exercises.
English.	
Reading and Spelling. Recitation. Formation and Derivation of Words.	M'Culloch's Course of Reading. Vasey's Spelling Book.
Grammar and Parsing. Elocution.	Brown's First Lines of English Grammar.
	Dr. Barber's Text-book of Elocution.
History.	
England.	White's England for Junior Classes.
Geography.	
Europe in detail.	Cornwell's Geography and Atlas.
Arithmetic.	
Compound Rules and Reduction.	Card of Arithmetical Tables.
Religious Instruction.	
The Gospel of St. Luke.	The New Testament.
Writing.	

SECOND FORM.

Hours, 9 to 12 A. M., and 1 to 4 P. M.

Latin.	
The Grammar as before with the Irregulars &c., and the chief Rules of Syntax.	The Edinburgh Latin Rudiments.
Eutropius. Phædrus.	Gibson's Eutropius. Schmitz and Zumpt's Phædrus.
Oral and Written Exercises.	Schmitz and Zumpt's Elementary Latin Exercises.
English.	
Reading and Spelling. Recitation. Formation and Derivation of Words.	The Fourth Book of Lessons. Vasey's Spelling Book.
Grammar and Parsing. Elocution.	Brown's First Lines of English Grammar.
	Dr. Barber's Text-book.
History.	
England. Canada.	White's England for Junior Classes. Roy's History of Canada.
Geography.	
As before ; add America in detail.	Cornwell's Geography and Atlas.
Arithmetic.	
Practice and Vulgar Fractions. Mental Arithmetic.	Card of Arithmetical Tables.
Religious Instruction.	
The Gospel of St. Matthew.	The New Testament.
Writing.	

THIRD FORM.

Hours, 9 to 12 A. M., and 1 to 4 P. M.

Subjects of Study.	Text-Books Used.
Latin.	
The Grammar as before, with the Appendix and the Syntax. Cornelius Nepos. Quintus Curtius. Ovid. Oral and Written Exercises.	The Edinburgh Latin Rudiments. Schmitz & Zumpt's, Cornelius Nepos, Quintus Curtius, & Ovid. Schmitz & Zumpt's Advanced Latin Exercises.
English.	
Reading and Spelling. Recitation. Formation & Derivation of Words. Grammar and Parsing. Dictation. Elocution.	The British American Reader. Brown's English Grammar. Dr. Barber's Text-book.
French.	
Grammar and Oral Exercises. Reading and Translation.	Ollendorff's French Method (Jewett's Edition.) De Fivas' French Reader.
History.	
Great Britain. Rome.	White's Great Britain and Ireland. Chambers' History of Rome.
Geography.	
As before; add Asia in detail.	Cornwell's Geography and Atlas.
Arithmetic.	
Practice and Vulgar Fractions. Mental Arithmetic.	Sangster's Arithmetic.
Religious Instruction.	
The Books of Genesis & Exodus. The Gospel of St. John.	The Bible.

Writing—Vocal Music.

FOURTH FORM.

Hours, 9 to 12 A.M., and 1 to 4 P.M.

Latin.	
Revision of the Grammar as before; add Prosody. Cæsar. Sallust. Virgil. Oral & Written Exercises.	The Edinburgh Latin Rudiments. Schmitz & Zumpt's Cæsar, Sallust and Virgil. Arnold's Latin Prose Composition, Pt. 1
Greek.	
Grammar, Introductory Translations, and Exercises.	Bullion's first Lessons in Greek.
English.	
Reading &c., as before; add easy Composition. Elocution.	The Fifth Book of Lessons. Brown's English Grammar. Dr. Barber's Text-book.
French.	
Grammar. Oral and Written Exercises. Reading and Translation.	Ollendorff's French Method (by Jewett) De Fivas' French Reader.

Subjects of Study.	Text-Books Used.
History.	
Great Britain. Greece.	White's History of Great Britain and Ireland.
Geography.	
As before; add Africa in detail. British North America in detail.	Cornwell's Geography and Atlas. Hodgin's History and Geography of Canada.
Arithmetic and Geometry.	
Decimal Fractions and Proportion. Mental Arithmetic. Plane Geometry, Bk. I.	Sangster's Arithmetic. Chambers' Euclid.
Religious Instruction.	
Historical Books of the Old Testament. The Acts of the Apostles.	The Bible. White's Sacred History.

Writing.—Linear Drawing—Vocal Music.

FIFTH FORM.

Hours, 9 to 12 A.M., and 1 to 4 P.M.,

Latin.	
Revision of the Grammar as before. Cicero. Virgil. Horace. Prose Composition. Classical Antiquities.	The Edinburgh Latin Rudiments. Schmitz & Zumpt's Cicero, Horace, and Virgil. Arnold's Latin Prose Composition. Part 1.
Greek.	
Grammar and Exercises. Greek Testament. Xenophon.	Bullion's First Lessons in Greek. Anthon's Xenophon's Anabasis.
English.	
Reading, &c. Composition. Elocution.	Fifth Book of Lessons. Parker's Progressive Exercises in English Composition.
French.	
Grammar and Exercises. Reading and Translation.	Ollendorff's French Method, (Jewett's Edition.) Petite Histoire Universelle.
German.	
Grammar and Exercises. Reading and Translation.	Ollendorff's German Grammar, by Adler. Adler's German Reader, Vol. 1.
History.	
Revision of previous work. Compendium of Universal History.	White's Outlines of Universal History.
Geography.	
Ancient and Modern. Map-Drawing.	Ewing's Geography and Atlas. Mitchell's Ancient Geography. Classical Atlas.

Subjects of Study.	Text-Books Used.
Mathematics.	
Arithmetic, as before, with Interest, Per Centages, &c. Mental Arithmetic. Algebra; the four Fundamental Operations, with Simple Equations. Plane Geometry.	Sangster's Arithmetic. Colenso's Algebra. Chambers' Euclid.
Religious Instruction.	
Scripture History and Geography. The Epistles of St. Paul.	The Bible. White's Sacred History.
Writing.—Book-keeping.	
Duff's Book-keeping.	
Linear Drawing.—Vocal Music.	

SIXTH FORM.

Hours, 9 to 12 A.M., and 1 to 4 P.M.

Latin.	
Occasional revision of the Grammar. Livy. Tacitus. Juvenal. Prose Composition. Versification. Classical Antiquities.	The Edinburgh Latin Rudiments. Schmitz and Zumpt's Livy, Tacitus and Juvenal. Arnold's Latin Prose Composition, Part II. Smith's Antiquities.
Greek.	
Grammar and Exercises. Homer's Iliad, Books 1 to 3. Herodotus, Bk. 5. Euripides. Prose Composition.	Bullion's Greek Grammar. Anthon's Homer. Oxford Text of Herodotus, and of Euripides. Arnold's Greek Prose Composition.
English.	
Reading, &c. Composition. Elocution.	Latham's Hand-Book. Parker's Progressive Exercises in English Composition. Chambers' History of English Literature.
French.	
Grammar and Exercises. Reading and Translation.	Ollendorff's French Method, (Jewett's Ed.) Petite Histoire Universelle.
German.	
Grammar and Exercises. Reading and Translation.	Ollendorff's German Grammar by Adler. Adler's German Reader, Vol. 1.
History and Geography.	
Universal History. Historical and Geographical Exercises. Map Drawing. Use of the Globes.	White's Elements of Universal History. Ewing's Geography and Atlas. Mitchell's Ancient Geography Classical Atlas.
Mathematics.	
The higher parts of Arithmetic. Logarithms. Mensuration. Algebra from Simple Equations. Plane Trigonometry. Solid and Spherical Geometry.	Sangster's Arithmetic. Colenso's Algebra. Chambers' Solid and Spherical Geometry. Galbraith and Haughton's Plane Trigonometry. Chambers' Mathematical Tables.

Subjects of Study.	Text-Books Used.
Physical Science.	
The Elements of Physical Science.	Loomis' Natural Philosophy.
Religious Instruction.	
Study of the Bible. Evidences.	Horne's Compendious Introduction. Porteous' Evidences. Bible.

Writing.—Book-Keeping.

Duff's Book-keeping.

Linear Drawing.—Vocal Music.

TERMS.

Fall Term - - - -	1st September to 15th November.
Winter Term - - -	16th November to 31st January.
Spring Term - - -	1st February to 15th April.
Summer Term - -	16th April to 30th June.

FEES.

(Inclusive of all charges.)

For the two Senior Forms - - -	$12 00. per Term.
For the four Junior Forms - - -	10 00. "
For the Preparatory Form. - - -	8 00. "

Payable in advance to the College Secretary who will issue tickets at the beginning of each term.

Applications for admission of Pupils to be made to the Rector, or to the Secretary at his Office, Burnside Hall.

M'GILL NORMAL SCHOOL,

Affiliated to the University, under the control of the Superintendent of Schools and the Corporation of the University.

Principal and Adjunct Professor of Natural History and Agriculture —J. W. Dawson, LL. D.

Ordinary Professors—William Henry Hicks, Esq.
Sampson Paul Robins, Esq.

Adjunct Professor of French. Pierre J. Darcy M.A.

Regular instructien in Drawing is given by Mr. James Duncan, and in Music by Mr. R. S. Fowler.

The institution is intended to give a thorough training to teachers, especially for the Protestant population of Lower Canada. This end is attained by instruction and training in the Normal School itself, and by practice in the Model Schools; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

Candidates for admission at the commencement of the Session, will be examined in reading, writing, the elements of grammar, arithmetic, and geography, and will be required to produce certificates of good moral character from the clergymen or ministers of religion under whose charge they have last been, and also testimony that they have attained the age of sixteen years. They will also be required to sign a pledge that they purpose to teach for three years in some public school of Lower Canada.

On complying with these conditions, pupil-teachers will be entitled to free tuition, with the use of text books, and to an allowance not exceeding £9 per annum in aid of their board, should they be successful in obtaining the diploma at the final examination. Under the regulations subjoined, those who reside at a distance of more than ninety miles from the city of Montreal, will also be entitled to a small allowance to pay travelling expenses, proportionate to the distance.

The course of study in the Normal School will include all the branches of a good English and French education, with special reference to their principles and practical applications, and to the best methods of teaching them. Instruction will also be given in the art of teaching and the management of schools, in history, the elements of geometry and algebra, natural philosophy, chemistry, natural history, agriculture, drawing and music.

In addition to religious instruction of a general Protestant character, by the professors, arrangements will be made for special religious

instruction, by ministers representing the several denominations with which the pupil-teachers may be connected.

No boarding-house is attached to the institution, but every care will be taken to ensure the comfort and good conduct of the pupil-teachers in private boarding-houses to be selected by the Principal. Board can be obtained at from $9 to $12 per month.

The large and commodious building, known as the "Old High School," in Belmont Street, has been thoroughly repaired and fitted up by the Government for the accommodation of the Normal School, and is provided with every modern appliance in the art of teaching.

At the close of the first year of study, pupil-teachers may apply for examination for diplomas, giving the right to teach in Elementary Schools; and after two years' study, or if found qualified at the close of the first year, they will on examination be entitled to diplomas as teachers of Model Schools. All the preceding regulations and privileges apply to female as well as to male pupil-teachers.

It is also contemplated, that such of the male pupil-teachers as may be distinguished by previous education, ability and industry, shall have the further privilege of entering on the University course as free students, with the view of qualifying themselves for teaching in colleges, academies and other institutions for superior education.

The Session commences on the 1st of September and extends to the 1st July; and with the view of accommodating those who may be unable to enter at the commencement of the session, or whose previous education may enable them to enter at a more advanced period, the course of study is divided into terms as follows:

1. JUNIOR CLASS STUDYING FOR THE ELEMENTARY DIPLOMA.

FIRST TERM, from September 1st to December 20th.

(*Entrance Examination as stated above.*)

English—Grammar and Composition so far as to parse Syntactically, and write correctly a few short descriptive sentences—Text Books, Bullion's Grammar and Parker's Progressive Lessons; Reading and Spelling, Etymology, Penmanship.

Geography—So far as to have a good acquaintance with the Map of the World.

History—Outline of Sacred and Ancient History.—History of Canada. Text-Book, White and Roy.

Arithmetic—Simple and compound rules, Vulgar and Decimal Fractions, Practice and Proportion, with explanation and demonstration of rules. Text-Book, Sangster's Arithmetic.

Algebra—The elementary rules as in the Algebra of Chambers' Educational course.

Geometry—First Book of Euclid.

French—Elements of Grammar, easy reading and translation. Text-Book, Ollendorff.

Natural History—Elements of Animal Physiology.

Agriculture.—Introduction to Agricultural Chemistry. Text-Book, Johnston's Catechism.

Drawing—Elements and simple outlines.

Music—Elements of Vocal Music.

SECOND TERM—January 1st to April 1st.

(*Pupils entering at the commencement of this term will be expected to pass a satisfactory examination in the Subjects of the previous Term.*)

English.—Grammar and Composition, so far as to be able to analyze simple and complex sentences, and to write correctly a short essay on a familiar subject.

Geography—So far as a good acquaintance with the physical features and political divisions of the great Continents.

History of England and France. Ancient History.

Arithmetic—Commission, Brokerage, Insurance, Purchase of Stocks, Interest, Exchange. Book-keeping.

Algebra—Simple Equations of one and two unknown quantities.

Geometry—Second and Third Books of Euclid.

French—Grammar continued, including Syntax, Reading, Translation, Oral and Written Exercises.

Natural History—Systematic Zoology. Text-book, Patterson's Zoology for Schools.

Agriculture—Sections 2nd to 5th inclusive of Johnston's Catechism, with Lectures.

Drawing—Landscapes, &c., in pencil.

Music—Vocal Music continued.

THIRD TERM—April 1st to July 1st.

(*Pupils entering at the commencement of this Term, will be expected to pass a satisfactory examination in the subjects of the two previous Terms.*)

English—Advanced Lessons in Grammar and Composition.

Geography and History—Advanced Lessons, with use of Globes, and recapitulation of previous parts of the course.

Education or Art of Teaching, including Hygiene and Elements of Mental Science.

Arithmetic—Conclusion of Commercial Arithmetic, and General Recapitulation.

Algebra—Quadratic Equations and Recapitulation.

Natural Philosophy—Matter, Motion, and Mechanical Powers, with outline of Hydrostatics, Pneumatics, Heat, Optics, and Electricity.

French—Advanced Grammar, Composition, Reading, and Conversation.

Natural History, Agriculture, Drawing and Music—Continued as in previous term.

Religious Instruction will be given throughout the Session.

II. Senior Class Studying for the Model Diploma.

(*Pupils entering this Class will be expected to pass a satisfactory examination in the subjects of the Junior Class. The Class will pursue its studies throughout the Session, without any definite division into Terms.*)

English—Principles of Grammar and Composition, Style. History of the English Language. Lectures on English Literature. Elocution.

Geography—Mathematical, with Nautical Problems, Detailed Course of Political and Physical Geography.

History—Mediæval and Modern, with especial reference to the History of Literature, Science, and Art, and to Colonization and Commerce.

Education—Advanced Course of Lectures on Educational Subjects.

Mathematics—Logarithmic, Algebraic, and Geometric Arithmetic, Recapitulation of Commercial Arithmetic. Quadratic Equations continued. Ratios and Progressions. Theorem of Undetermined Co-efficients. Binomial and Exponential Theorems. Theory of Equations. 5th and 6th Books of Euclid. Elements of Solid Geometry and Trigonometry.

French—Advanced Course of French Literature, with Composition and Conversations in French.

Natural History—Botany, and Vegetable Physiology.

Chemistry—Principles and Applications to Industrial Arts.

Drawing—Figures from the Flat and from Models—Elements of Perspective.

Music—Instrumental Music, and continuation of Vocal Music.

Religious Instruction—Throughout the Session.

Classics.—A course of study in Classics, with the view of obtaining Academy diplomas, will be provided for those pupils who may be found fitted to enter upon it.

EXTRACTS FROM THE REGULATIONS.

Special Regulations for the admission of Pupil-teachers.

Article First.—Any person desirous of being admitted as a pupil-teacher, must apply to the Principal of the Normal School, who, on his producing an extract from the Register of Baptisms or other evidence, showing that he is fully sixteen years of age, with the certificate of character and conduct required by the 16th article of the general Rules and Regulations, approved by His Excellency, the Governor General in Council, on the 22nd December, 1856, shall examine the candidate.

If upon this examination, it is found that the candidate can read and write sufficiently well, knows the rudiments of grammar in his mother tongue,—arithmetic as far as the rule of three, inclusively, and has some knowledge of Geography, the Principal shall grant him a certificate.

Article Second.—The candidate having thus obtained the certificate of the Principal, shall then, (in the presence of two witnesses who, with the Principal, shall countersign the same,) sign an application in writing for admission, containing the declaration required by the 23rd general regulation. This shall be forwarded to the Superintendent of Schools, together with all the certificates and other documents required, and if the whole be found correct, the Superintendent shall cause the name of the candidate to be inscribed in the register, and due notice therefore shall be given to the Principal.

Article Third.—The pupil-teachers shall state the place of their residence, and those who cannot reside with their parents, will be permitted to live in boarding-houses, but in such only as shall be specially approved of. No

boarding-house having permission to board male pupil-teachers, will be permitted to receive female pupil-teachers as boarders, and *vice versa*.

Article Fourth.—Every pupil-teacher on passing the examinations, will be allowed a sum not exceeding £9, to assist in paying his board.

Article Fifth.—Every pupil residing at a distance of more than ninety miles from the city of Montreal, shall be entitled to receive an allowance for travelling expenses, proportionate to the distance, but not to exceed two pounds ten shillings *per annum*.

Article Sixth.—The total amount of allowances paid to pupil-teachers under the foregoing articles, shall not exceed £333 6s 8d cy., yearly—that being the sum granted for this object; and when the whole of this amount is appropriated, such pupil-teachers as may apply for admission shall not be entitled to any portion thereof, until vacancies shall occur.

Special Regulations for Government and Discipline.

Article First.—Pupil-teachers guilty of drunkenness, of frequenting taverns, or entering disorderly houses or gambling houses, of keeping company with disorderly persons, or of committing any act of immorality or insubordination, shall be expelled.

Article Second.—There shall be no intercourse between the male and female pupil-teachers while in the school, or when going to, or returning from it. Teachers of the one sex are strictly prohibited from visiting those of the other.

Article Third.—They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

Article Fourth.—They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

Article Fifth.—Proprietors of boarding-houses authorised by the Principal, shall report to him any infraction of the rules, with which they may become acquainted.

Article Sixth.—The Professors shall have the power of excluding from the lectures for a time, any student who may be inattentive to his studies or guilty of any minor infraction of the regulations.

Article Seventh.—Pupil-teachers shall be required to state, with what religious denomination they are connected, and lists of the students connected with each denomination shall be furnished to one of the ministers of such denomination resident in Montreal, with a request that he will meet weekly with that portion of the pupil-teachers, or otherwise provide for their religious instruction.

Every Thursday afternoon, after four o'clock, will be assigned for this purpose.

Article Eighth.—In addition to punctual attendance at the weekly religious instruction, each student will be required to attend public worship at his own church, at least every Sunday.

Any additional information that may be desired may be obtained on application to the Principal, or to either of the Professors.

MODEL SCHOOL OF M'GILL NORMAL SCHOOL.

Teacher of Boys' School—Mr. James M'Gregor.

" Girls' School—Miss Mary M'Cracken.

These schools can accommodate about 300 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of six and upwards, and give a thorough English education. Fee, Senior Class, 1s. 3d. per week; Intermediate, 1s.; Junior, 9d.; payable weekly.

Time Table of McGill Normal School, 1860-61.

SENIOR DIVISION.

Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	French.	Model School	Botany.	Model School	Chemistry.	General Exercise.
10	Arithmetic.		Arithmetic.		Algebra.	Drawing.
11	Algebra.		Geometry.		Geometry.	Singing.
1	Model School	History.		Education.	Model School	
2		Geography.		English Literature.		
3		Grammar.		Composition.		
4	General Exercise.	French.	French.	Religious Instruction.		

JUNIOR DIVISION.

9	Natural Philosophy.	Arithmetic.	Model School	Arithmetic.	Model School	Drawing.
10	Model School	Algebra.		Algebra.		Education.
11		Geometry.		Geometry.		Singing.
1	History.	Model School	History.	Model School	Geography.	
2	Geography.		Grammar.		Grammar.	
3	Composition.		Agricul. Chemistry.		Writing.	
4	French.		Zoology.	Religious Instruction.	French.	

REGULATIONS

RELATING TO THE

EXAMINATION OF PUPILS

OF SCHOOLS OR ACADEMIES,

FOR CERTIFICATES OF THE UNIVERSITY.

1.—*First or Junior Examination for pupils under* 15 *years of age, entitling to the Junior School Certificate of the University,*

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1. A certificate of character signed by the clergyman or minister, under whose pastoral charge the candidate has last been, will be required of all candidates.

2. Candidates will be examined in the Gospels and Acts of the Apostles, unless objected to by their parents or guardians.

3. All candidates must pass an examination in the following subjects:

English—Reading, in easy prose and easy poetry; Grammatical analysis of easy sentences; writing English from dictation - - - - - - - - - - - -	250 marks.
Arithmetic—All the ordinary rules in integral numbers and fractions - - - - - - - - - - - -	125 marks.
Outlines of physical and political *Geography*, with Maps of the Continents from memory; Geography of British America	100 marks.
History of Britain and its Colonies, especially of Canada	100 marks.
Book-keeping - - - - - - - - - - - -	50 marks.

The quality of the *hand-writing* in the several exercises will be taken into account.

4. All candidates must pass an examination in *at least two and not more than four* of the following subjects, including at least one language and one mathematical or scientific subject.

Latin—Grammar; Cæsar Com. B. 1 to 3; Sallust Catil.; Virgil Aen. B. 1 to 3 - - - - - - - - - -	125 marks.
Greek—Grammar; Xenophon, Anab. B. 1 - - - -	125 marks.
French—Reading and Translation of French into English -	125 marks
German—Reading and Translation into English - -	125 marks.
Algebra—To simple equations inclusive - - - - -	125 marks.
Geometry—Euclid, B. 1 to 3, inclusive - - - - -	125 marks.
Elements of Natural Philosophy, as in the Text books of Chambers' Educational course - - - - - - -	75 marks.
Elements of Zoology, as in Patterson's Zoology for Schools	75 marks.

Elements of Botany, as in Gray's First Lessons - - - 75 marks.
" *Geology*, as in Page's Introductory Text-Book 75 marks
" *Inorganic Chemistry*, as in Chambers' School course 75 marks
" *Drawing* - - - - - - - - 75 marks.

5. Candidates must receive at least one-sixth of the total number of marks in any subject, to entitle them to credit for that subject,—and at least two-thirds of those proper to the whole number of subjects required, to entitle them to pass for the certificate.

II.—*Second or Senior Examination for Pupils under* 18 *years of age, entitling to the Senior School Certificate.*

1. Preliminary conditions to be as in the Junior examination.

2. Every candidate must pass in the following subjects :

English—Reading in prose and poetry ; grammatical analysis of sentences ; composition of a short theme or version 500 marks.

Arithmetic—All the ordinary rules with Cube Root and Logarithms - - - - - - - - - - - 250 marks.

Physical, Political and Commercial Geography, and use of the Globes ; detailed Geography of British America - - 200 marks.

History of Britain and its Colonies ; Outlines of Universal History - - - - - - - - - - - - 150 marks.

Book-keeping - - - - - - - - - - 100 marks.

The quality of the hand-writing in the several exercises will be taken into account.

3. Every candidate must pass in at least two and not more than four of the following subjects, including at least one language and at least one mathematical or scientific subject.

Latin—Grammar ; Cicero, Orat, in Catil. ; Livy, B. 21 ; Virgil, Georgics, B. 1 ; Arnold's Latin prose Composition ; - 250 marks.

Greek—Grammar ; Herodotus, B. 5 ; Homer Iliad, B. 1 to 3. 250 marks.

French—Reading and Translation of English into French 250 marks.

German—Reading and Translation into German - - 250 marks.

Algebra—Including Quadratics - - - - - 250 marks.

Geometry—Euclid, first six books, with plane Trigonometry, principles of solid Geometry and Mensuration of Surfaces and Solids - - - - - - - - - - - 250 marks.

Natural Philosophy—Including Mechanics, Hydrostatics and Pneumatics, Optics, Electricity, as in Lardner's, Tate's, Loomis' or Comstock's Manuals or similar books - - - - 150 marks.

Zoology and Comparative Physiology, as in Patterson's Zoology for schools, and Agassiz and Gould's Principles, - 150 marks.

Botany and Botany of Canada, as in Gray's Text-book and Manual - - - - - - - - - - - 150 marks.

Geology and Mineralogy, with practical applications, and Geology of Canada ; Lyell's Elements, Nichol's or Dana's Manual. - - - - - - - - - - - - 150 marks.

Chemistry—Inorganic and Organic, as in Gregory's Handbooks - - - - - - - - - - - 150 marks.

Drawing and Perspective, and Mechanical Drawing - 150 marks.

Especial importance will be attached to practical knowledge of machines, instruments, tests, and objects, in the several departments of Physical and Natural Science, and to drawing from nature or models; but a knowledge of principles will be insisted on.

4. Conditions as to questions, as in junior examination.

III. *General Regulations,*

5. Successful candidates will be arranged in order of merit—in published lists—which will also state the name of the school sending the candidate for examination. The certificates given will specify the branches in which the candidate has passed.

6. Candidates who pass in the Junior examination, including Classics and Mathematics, will be eligible to enter the Faculty of Arts as students of the first year. Candidates who pass in the Senior examination, with Classics and Mathematics, will be eligible to enter the Faculty of Arts as students of the second year.

Free scholarships in Arts will be bestowed on the three highest successful pupils in each examination.

7. The examination will be conducted in writing by Professors of the University, selected for that office by the Corporation, and the examination papers will be filed in the office of the Secretary.

8. Previous to each examination the questions will be prepared by the Professors selected as examiners, and will be approved by the Faculty of Arts.

9. Candidates must lodge in the office of the Secretary, at least three days before the examination, a written application and certificates of character, as above required, accompanied by a fee of $2 for the Junior, and $4 for the Senior examination. Forms of application will be furnished by the Secretary, and successful candidates will receive their certificates without further charge.

10. The next examination under the above regulations will be held in Burnside Hall, on September 25th, 1860, and following days.

Printed by J. C. Becket, 38 Great St. James Street, Montreal.

ERRATA.

Prize List, Page 36.

DRUMMOND, for *Second Prize*, read *Second Rank Honors.*

TRENHOLME, add *First Prize in Mathematics.*

UNIVERSITY

OF

McGILL COLLEGE,

MONTREAL.

SESSIONAL EXAMINATIONS. APRIL, 1860.

LATIN. { VIRGIL.—ÆNEID, BOOK VI.
HORACE.—ODES, BOOK I.

FIRST YEAR.

Examiner..... REV. PROFESSOR CORNISH.

1. Translate, Æneid VI. vs. 268–289.

2. *a.* Write a short account of the progress of Dramatic poetry and Satire among the Romans, prior to the age of Augustus, giving the names and dates of the leading poets therein. *b.* Relate the principal events of the life of Virgil. When and where did he die. Name the most famous of his contemporaries. *c.* To what department of Poetry does the Æneid belong?

3. What countries are meant by; 14. "Minoia regna." 60. "Massylum gentes, prætenta Syrtibus arva." 2. "Euboicis * * oris." 799–800. "Mæotia tellus," "Caspia regna?" Where were Argos, Corinth, Gabii, Cures, Nomentum, Alba Longa, and Fidenæ?

4. Translate, Æneid, VI. vs. 494–504, and 648–655.

5. *a.* 645. 'Threicius sacerdos:'—Who? *b.* Give some account of the persons mentioned in vs. 825–26:—Why 'sævum securi,' and 'referentem signa?'—and in vs. 837–845. Name the wars alluded to in this passage.

6. Give the etymology of the following words, and introduce any words in Greek and English that are cognate with them:—ambages, supplex, crateres, nubila, inclytus, lacerum, strages, juga, populata, vireta, pecus, nomina, axis, posthumus. What is the correct orthography of this last?

7. *a.* Parse the following verbs:—Cecidere, direxti, prendimus, peperere, contorsit, vendidit, carpe, fefellit. *b.* Give the Perfect Ind. Act., and

Perfect Pass. Part., or Supine, of;—do, augeo, cerno, gaudeo, crepo cano, pello, pono.

8. Translate, Æneid, VI. 842–854.

9. State the difference in meaning between;—'cruor, sanguis;' 'viscera, exta;' 'vacuas, inania;' 'ripas, littora;' 'artus, membra;' 'amittere, perdere;' invenire, reperire; in dies, quotidie; similis with Gen., and with Dat.; licet, fas est.

10. *a.* Explain the construction of Æneid VI. vs. 1–2. 42. 77–79. 213. "Cineri ingrato," what is the force of 'ingrato?' 229–31. Explain 'novissima,' 312. What case is 'terris apricis'? 622. "Fixit leges * * refixit." What is meant by this expression? What is the force of 're' in the latter verb? 646. Explain this. 747. 'Aurai,'—what case? *b.* Scan vs. 126. 132. 169. 432. 685. 747.

11. Translate, Horace, Bk. 1. Ode VIII.

12. Translate, Horace, Bk. I. Odes XXI. and XXXIV.

13. *a.* Explain the metre of VIII, and also of XXI, by scanning the first four verses in each. *b.* State the opinions that have been advanced respecting the structure and occasion of Ode XXI.

14. *a.* What verbs are followed by two accusatives? *b.* Give instances of intransitive verbs that become transitive, when compounded with a preposition. *c.* What is meant by the *Dative of attraction?* *d.* Give those compound verbs—both with adverbs and prepositions—that govern the Dative. *e.* What is the construction with the impersonal verbs, interest, refert;—licet; oportet? *f.* What is the rule for the *attraction of the Predicate?* *g.* What are *partitive* adjectives, and in what case do they take the dependent noun?

15. Translate into Latin;—The Gauls gave Cæsar much information about their own affairs, and again and again denied that they had undertaken to do the Roman state any harm. The consuls published a proclamation that no citizen should leave the city of Rome. The accused came and threw themselves at the feet of the dictator and entreated that he would not suffer them to be condemned to die. Pericles was so generous that he gave all his lands as a free-gift to the state. It is the duty of a good citizen to give up his life even for his country. I fear he will come, but I warned him not to come. Of what importance is it to you whether he come or not? Ought a good man to be the slave of ambition?

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MONTREAL.

SESSIONAL EXAMINATIONS. APRIL, 1860.

GREEK.—HOMER.—ILIAD, BKS. I. & II.

FIRST YEAR.

Examiner..... Rev. Professor Cornish.

1. Translate Bk. I. vs. 225—244.

2. *a.* Give the most probable date of the destruction of Troy. *b.* When, according to Herodotus, did Homer live? Name the cities which severally claimed to be his birth-place, and that one which has the best grounds for preference.

3. *a.* State briefly the theory of Wolf respecting the origin and authorship of the Homeric poems. *b.* State the two accounts of the introduction of the poems of Homer into Greece;—and—assuming that they were not at first committed to writing—how is their preservation to be accounted for? *c.* What is the general testimony of ancient writers with regard to the first collection of these poems into a whole?

4. Translate Bk. I. vs. 428—441.

5. *a.* What was the *Digamma*, and by what characters is it represented in Latin, German, and English, respectively? Give instances. *b.* Explain the Homeric use of the Article. *c.* Name the leading critics and commentators on Homer among the ancient Greeks. *d.* Define the terms προβλήματα, ζητήματα, λύσεις, and διόρθωσις, as used by them. *e.* What were the principal ἐκδόσεις of the Homeric poems?

6. Translate Bk. II. 87—98, and 210—220.

7. *a.* Turn the following words into Attic;—κραδίην, ἐλάφοιο, ἀριστήεσσιν, σέθεν, παλάμης, πεποτήαται, ἐρήτυθεν. *b.* How do you account for the dialectic peculiarities and varieties, as they have been termed, of the Homeric poems? *c.* What are the two interpretations given of

φολκός by the Scholiast and Buttmann, and what reasons does the latter adduce for his meaning?

8. Translate Bk. II. *a.* 419—431. *b.* 455—458. *c.* 474—479.

9. Explain the following expressions in the description of a sacrifice;—ὀυλοχυτας ἀνέλοντο. ὀυλοχύτας προβάλοντο. ἂυ ἔρυσαν. μηροὺς ἐξέταμον. κατὰ κνίσσῃ ἐκάλυψαν. ὠμοθέτησαν. &c. What were the πεμπώβολα?

10. *a.* What degree of advancement in the arts and sciences do the poems of Homer indicate? *b.* In connection with the navigation and seamanship, write explanatory notes on; Ἱστία μὲν στείλαντο, κ. τ. λ. Ἱστὸν ἱστοδόκῃ * * * καρπαλίμως. τὴν εἰς ὅρμον * ἐρετμοῖς. Ἐκ ἑυνὰς * * * ἔδησαν. Bk. I. 433—436.

11. State your views of the leading characteristics of the Homeric poetry. What are the points of the similes above given.

12. *a.* Write down the metrical scheme of an Hexameter verse. *b.* What is a *Spondaic* Hexameter verse, and under what circumstances can it be such? *c.* Scan the following verses, and explain any peculiarities of metre you may observe:—Bk. I. 75. 86. 119. 262. Bk. II. 74. 206. 294—298.

13. Give the construction of; *a.* Bk. I. 66—67. *b.* 170—171. *c.* 566—567.

14. *a.* Write down the Greek *Enclitics* and *Atonics*. *b.* Decline the following nouns, accentuating them throughout:—λόγος, δῆμος, ναύτης, ἄνθρωπος, παῖς, πατήρ. *c.* Distinguish between;—ἥ, ἧ, ἦ, ἤ.

15. *a.* Name the *principal* and *historical* Tenses. *b.* Define the Aorist Tense. *c.* What are the compounds of ἄν, and what mood do they take? *d.* What is the mood of the consequent clause in dependent conditional propositions?

16. Translate into Greek:—"Never flatter those who act unjustly towards the state. Accustom thyself to do kind offices to those who are thy benefactors. It becomes good citizens to hold in great respect those who successfully manage the affairs of the state. When the Persians invaded Greece they laid waste the whole of Attica and took the city of Athens. If the citizens had been wise men they would have put Philip to death;—but if they find this fellow guilty of murder they will put him to death. The king told him he would come if he were wanted. He said he was present in order to do the Athenians a very great service."

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SESSIONAL EXAMINATIONS. APRIL, 1860.

LATIN.—TACITUS.—GERMANIA AND AGRICOLA.

SECOND YEAR.

Examiner.....REV. PROFESSOR CORNISH.

1. Translate, Germania, Chap. xvi.

2. *a.* Write a sketch of the life of Tacitus. *b.* Give the names and dates of the emperors during whose reigns he lived. In whose reign was the Agricola written? *c.* Name the principal Roman Historians prior to the age of Tacitus, and the works of these now extant. *d.* What are the peculiar features of the style of Tacitus? *e.* What writers besides Tacitus wrote accounts of Britain.

3. Translate, Germania, Chap. xlv.

4. Write short explanatory notes on; Chap. 5, "Serratos bigatosque." What noun must be supplied? 6. "Nudi aut sagulo leves." 7. "Ceterum neque animadvertere * * * permissum." 9. "Martem, concessis * placent." 10. "Ter singulos tollit." 12. "Discrimen capitis intendere." 14. "Expectare annum." 16. "Quædam loca * * * * * imitetur." By what name is this substance now known? 17. "Eligunt feras * * * * mare gignit." 20. "Nudi ac sordidi." 41. "Invehi populis arbitrantur." What case is populis?

5. Give the modern names of the rivers;—Rhenus, Mosa, Amisia, Visurgis, Albis, and Lupia. Where, and what were the "Decumates Agri"? 40. "In insula Oceani." What Island?

6. Translate, Agricola, Chaps. iii, and xxiv.

7. *a.* Point out the mistakes made by Tacitus in the geographical descriptions of Chaps. x. and xxiv. *b.* Give the geographical positions of the;—Brigantes, Silures, and Iceni. *c.* What are the modern names of;—Clota, Bodotria, Taus, Orcades, and Mona? What is the Mona of Cæsar?

8. Translate and explain the following passages;—Chap. 6, Agr. "Nam filium * * * amisit." "Nec enim jurisdictio obvenerat." 11. "Seu procurrentibus * * * * dedit." 12. "Fert Britannia * * * * pretium victoriæ." How is this to be reconciled with the statement in Chap. 31? "Neque enim * aut metalla, * * * * reservemur"? 13. "Consilium id divus * * * * Tiberius praeceptum." 18. "Ne laureatis quidem gesta prosecutus est." 31. "Trinobantes * * * * jugum potuere." What is meant by "coloniam"? 35. "Cornibus adfunderentur." "Pro vallo stetere." "Citra Romanum sanguinem bellanti." "Diductis ordinibus." "Pedes ante vexilla constetit." 40. "Triumphalia ornamenta." What were these, and what were the conditions necessary for a Roman general to gain the honour of a triumph?

13. Translate, Agricola, Chap. xliii.

14. Give the etymology and meaning of the following words, which are found in the Germania and Agricola:—Lauti, indigenas, armenta, discretos, exanguis, passim, securi, impotentia, tegumen, expeditas, inhabile, stratis, superstites, auspicia.

15. State the difference in meaning between;—ager, arvum; gens, natio; cassis, galea; familia, mancipia; discreti, diversi; connexis, cohærentibus; propinqui, adfines; rudis, informis.

16. Parse the following verbs;—expulerint, adsuerunt, poposcerit, adoleverint, canent, texissent, popularetur, obtriverat, oppresseris, miscuerit.

17. Explain the construction; Germania, 5. "Possessione et usu * * adficiuntur." Supply the ellipsis. 10. "Se enim ministros * * * putant." 16. "Nullas Germanorum * * * * sedes." 17. "Nudæ brachia ac lacertos." 38. "Neque enim ut ament * * * * ornantur." Agricola, 5. "Prima rudimenta * * * * contuberuio æstimaret."

18. *a*. Agricola, 44. "Natus erat Agricola * * * * Collega Priscoque consulibus." What other readings are given besides this? *b*. "Idibus Juniis": "decimo kalendas Septembris." Express these dates according to our mode of reckoning. What part of speech, and what case is "Septembris"? Give the full expression for the latter of the above extracts. Give the divisions of the Roman month.

19. What cases are used in Latin to express; 1. A definite point of time, at which a thing is done? 2. Duration through any length of time? 3. A point or space of time *in the future* for which arrangement is *now* made? 4. The town *at which* a thing is done? 5. Motion *to* a place;—*from* a place? *b*. State the rule for the use of the *Ablative Absolute:* for the use of *Qui* with the *subjunctive:* for *Dum*, &c., with the *indicative*, and with the *subjunctive*.

20. Translate into Latin ;—His brother died on the 15th of May, in the 2nd consulship of C. J. Cæsar ;—accordingly he determined on returning to Rome on the 1st day of June, and forthwith set out from the town where he had been staying for some time. When he had accomplished his journey, he learnt that his brother had made him heir to one half of his property, which brought him six hundred thousand sesterces. Up to the time of his receiving this money he had lived a poor man, but now he began to live in an extravagant manner, and soon squandered all he had.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

GREEK.—SOPHOCLES.—ANTIGONE.

SECOND YEAR.

Examiner..... Rev. Professor Cornish.

1. Translate vs. 249---277.

2. *a.* Give the leading facts of the life of Sophocles, with the date and place of his birth. *b.* What are said to be the improvements in the dramatic art which he introduced. Compare his merits as a dramatist with those of Æschylus and Euripides. *c.* State the number of plays attribued to Sophocles, and the number which are regarded as spurious. Give the names of those which have come down to us.

3. *a.* In what other dramas, both of Sophocles and of other dramatists, do the fortunes of the house of Œdipus form the subject? What position in the series of events does the Antigone occupy? *b.* State the Argument, and what you regard as the primary idea of this play. Write also a brief analysis of it. *c.* In what year B. C., and with what success was it represented?

4. Translate vs. 937---978.

5. Write down the scale of the metre called *Iambic Trimeter Acatalectic*, with the various feet that are admissible into it. Mention the isochronous feet in the scale. State the laws of the scale as given by Porson. Define the terms *Catalectic*, *Acatalectic*, *Brachycatalectic*, and *Hypercatalectic*. Scan verses 10---15.

6. Parse and explain the composition, meaning, and derivation of the following words;---ἐστερήθημεν. ἐκκεκηρῦχθαι. δημολευστον. δεξιόσειρος. βαλβίδων. κτερίζειν. ἐπημαξευμένη. ἐγερτί. ἄρδην. θοὔρμαιον. ὑπήνεμοι. ἀφειδήσοι. αὐτόπρεμνα. μέμηνεν. λοισθία. χρῇ. σκαιότητα. Give the cognate word in Latin with this last.

7. Translate vs. 998---1010. Give the literal rendering of "ἐπὶ ξυροῦ τύχης." καλυπτῆς,—is this active or passive?

8. Explain the construction of; *a.* 48. *b.* 120---21. *c.* 471. *d.* 489---490. *e.* 1034---35. *f.* 1021---22. *g.* 1084---86. *h.* 1261---62.

9. Translate vs. 1115----1145.

10. Explain the geographical allusions in the above passage. Why was Bacchus an object of special adoration at Thebes? State briefly the legends alluded to in the Chorus, vs. 944, &c.

11. Give the different interpretations that are given of; *a.* vs. 88. *b.* 263. *c.* 528---30. *d.* 1085.

12. What are the various readings for; vs. 4. ἄγης ἄτερ. 134. ἀντιτύπᾳ. 235. πεφαργμένος. 858. τριπόλητον.

13. *a.* vs. 431. χοαῖσι τρισπόνδοισι. What were these libations? *b.* vs. 1005, &c. Write short explanatory notes on the several particulars mentioned in this passage. In divination by fire what were regarded as propitious omens? *c.* 1175---6. ἀυτόχειρ.---πατρῴας χερος. How do you account for the use of the latter expression by the Chorus? *d.* 1282. παμμήτωρ. Explain this compound.

14. *a.* Write down the leading Doricisms used in the Choruses. *b.* Accentuate, and give the different meanings of the following words, according to their difference of accentuation:---αγων. αλλα. ταυτα. ων. αν. ην. παρα. φιλει. νοσων. When do Oxytones take the *grave* accent?

15. *a.* What do the Suffixes -ιος and -ικος in Adjectives denote? Also -μα, -της, -ια, and -ιδιον, in Nouns? *b.* Write down the Imperfect, Perfect, Future, and the Aorist 1st, or 2nd, Indicative of the following verbs:---ἀισθάνομαι. ἔχω. γίγνομαι. ἐλάυνω. ἐπαινέω. τέμνω. φέρω. ἁλίσκομαι. ἐυρισκω. θνήσκω. *c.* What are μέν and δέ used to express? *d.* State the difference in usage between the negative particles οὐ and μή. *e.* What are the various meanings of ἀυτός, in the Nom. and oblique cases, according to its position in the sentence? *f.* Write down the *indefinite* corelatives of τίς, πόσος, ποῖος, ποῦ, πότε, πηλίκος, πῶς. *g.* State the principal rules for the use of εἰ and ἄν in Conditional Propositions.

16. Translate into Greek;---The citizens of Athens fought and vanquished the myriads of the army of the Great King in the battle of Marathon. On that day of victory Miltiades commanded the army of his country, for the other nine generals had given up to him the sole command. Had it not been for this step, the Persian army might have proved too strong for the Athenians. The centre of the Athenians was overcome and had begun to flee, when Miltiades succoured them, and with all his forces charged the Persians, who now fled to their ships.

UNIVERSITY

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SESSIONAL EXAMINATIONS. APRIL, 1860.

HISTORY.—HISTORY OF ROME.

FIRST AND SECOND YEARS.

Examiner..... Rev. Professor Cornish.

1. Give an account of the physical geography and early population of ancient Italy.

2. By what names do the Greek historians designate the Etruscans? What name did they give themselves? State the general testimony of the ancient writers, Herodotus especially, respecting the origin of this people and their introduction into Italy.

3. Explain the constitution of Rome under the Kings.

4. Give an account of the institution of the Census, and of the division of the Roman people into classes—ascribed to Servius Tullius.

5. Explain the expression *Patres Conscripti.* Of whom was the Senate composed? What were its functions and powers? Distinguish between *populus* and *plebs.*

6. What power did the old Roman law give the creditor over an insolvent debtor? Explain the mutual relations and obligations of the *patronus* and the *cliens.*

7. Mention, with dates, the most important of the wars by which Rome made herself mistress of Italy.

8. Give an account of the successive struggles and laws by which the Plebeians sought to gain equal political rights with the Patricians.

9. Explain the composition and powers of the Comitia Curiata, Centuriata, and Tributa.

10. *a.* Name the divisions and subdivisions of land made by the Roman jurists. *b.* Write an account of the Agrarian Laws. What was the primary object of these laws, and to what kind of land did their provisions apply? *c.* In connection with this subject, define the terms *possessio*, *possessores*, *possidere*.

11. Write a short account, with dates, of the principal events of the three Punic Wars. Give the derivation of the term *Punic*, and the oldest form of the adjective *Punicus*. To what family of nations did the Carthaginians belong, and what part of the world was their original home?

12. Under what circumstances, and at what dates did the following countries severally become Roman Provinces;—Sicilia, Sardinia, Hispania, Gallia, Africa, Achaia, and Macedonia?

13. Give the dates and geographical positions of the following battles;—the Allia, Cannæ, the Metaurus, Zama, the Ticinus, Cynoscephalæ, Pydna.

14. Give an account of the sources from which the revenue of Rome was derived, and the mode of collecting it, during the period of the Republic.

15. What were the functions and powers of the Dictator, Consul, Quæstor, Censor, and Tribunus Plebis?

16. Mention the reforms which the Gracchi sought to introduce in the Roman constitution, and point out in what respects these reforms were needed.

17. Give the date and circumstances attending the insurrection of Spartacus.

18. State the causes to which the overthrow of the Republican form of government at Rome may be attributed.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

LATIN. { JUVENAL.—SATS. I. III. VIII. X.
HORACE.—SATS. BOOK I.

THIRD YEAR.

Ordinary Examination.

Examiner..... REV. PROFESSOR CORNISH.

1. Translate—Juvenal—Sat. VIII. vs. 195–210.

2. Point out in what respects Juvenal is superior to Horace as a satirist.

3. Translate, Satire X. vs. 133–166.

4. *a.* Write an analysis of Satire X. *b.* By what celebrated English writer, and in what poem has this satire been imitated? *c.* Explain what is meant by vs. 1. 'a Gadibus * * et Gangem.' 17, 'egregias Lateranorum ædes.' 47–50, 'Tunc quoque * * * * nasci:'—What philosopher and what country are alluded to? 115, 'totis Quinquatribus:'—What festival was this? *d.* Mention the principal battles, and leading events connected with the invasion of Italy by Hannibal in the second Punic War. Relate the circumstances of the death of Hannibal. *e.* 'Pellæo juveni:'—Who, and why so designated?

5. Translate—Horace—Sat. Bk. I. 1. vs. 61–79.

6. *a.* Show in what this Satire of Horace resembles any of Juvenal. *b.* Give the construction of 19–21. 'Atqui * * beatis.' 'Quid causae * * * inflet.' 49–51;—'quid refert * * * * aret?' *c.* What are the various readings of vs. 29? vs. 86;—with what is 'post' to be connected? what figure is here used?

7. Translate Sat. IV. 1–21.

8. *a.* Translate and explain;—Sat. III. 15. 'decies centena:' what do you supply here? 27. 'serpens Epidaurius.' 45–49. Some editors write the words 'paetum,' 'pullum,' 'varum,' 'scaurum,' with a capital initial; others, as here given:—translate according to either reading. 87. 'tristes Kalendae:'—why 'tristes?' *b.* Sat. IV.—'dignus describi:'—give the force of the latter word. What is meant by the *Old*, the *Middle*, and the *New* Comedy of Greece? Mention the principal writers in each. Is the judgment of Horace on Lucilius, in this passage, altogether fair and in accordance with the opinions of other ancient critics? *c.* vs. 48, &c. To what comedy is the allusion here made? vs. 60–62. Give the construction. From what poet are these vs. quoted? 69–70. Explain the construction, and supply the ellipsis. 94. What person is here meant?

9. Trace the route of the journey described in Sat. V. giving the positions of the places mentioned.

10. Translate—Satire VI. vs. 65–82.

11. *a.* Explain the construction of VI. 1–6: and 31–33;—'eat quacunque, * * * * capillo.' *b.* Translate and explain v. 75. What is the force of 'octonis?' What interpretations are given of 'referentes aera?'

12. Parse the following verbs;—triverit, compilent, vestiret, obtulerim, ligurrierit, fregerit, finxerunt, illeverit.

13. Explain the composition, derivation, and meaning of; crustula, reticulum, tripes, abortivus, sincerum, tritum, latro, opifex, convictor, prolutus. State the difference between libertus and libertinus.

14. Grammatical Questions:—*a.* Write down the principal verbs that are followed by the accusative with the Infinitive. *b.* Give the interrogative particles, and point out the exact difference in meaning between them. *c.* In what mood does the verb of dependent questions stand? *d.* What are *deponent* and *neuter-passive* verbs? What participle have they which other verbs have not? *e.* State the difference in usage between the *Gerund* and the *Gerundive*.

15. Translate into Latin;—He was slain by his fellow-citizens on account of his great desire to consult the interests of the republic, but his death proved the ruin of those who had slain him. Can he then be a bad citizen who is delighted with the discovery of what is true, and honourable and useful. He sent word that he should remain at Rome, or at Gabii, until the 17th of the next month. Is it possible that a man should be believed who never speaks the truth?

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SESSIONAL EXAMINATIONS.—APRIL, 1860.

GREEK.—ÆSCHYLUS.—PROMETHEUS VINCTUS.

THIRD YEAR.

Ordinary Examination.

Examiner..... Rev. PROFESSOR CORNISH.

1. Translate vs. 298—321. Ed. Dindorf.

2. *a.* The Prometheus Vinctus is believed to have been the second of a Trilogy:—Give the Greek titles of the other two. *b.* Two dates have been assigned for the composition of this play:—Name them, and give the reasons which have been adduced in support of them. *c.* In what manner is it supposed the character of Prometheus was represented on the stage?

3. Translate vs. 526—560.

4. *a.* Into what feet of an Iambic Senarius can Anapæsts and Dactyls be admitted? What exceptions are made in favour of proper names? *b.* Write down the scale of the measure called Anapæstic Monometer Acatalectic, and also of that called Anapæstic Dimeter Acatalectic. *c.* Scan vs. 520—525.

5. In what condition did Æschylus find tragedy when he began to write? Give the derivation and original meaning of the word τραγῳδία. What were the improvements which, according to Horace, Æschylus introduced in Dramatic composition and representation?

6. In what year B. C. was Æschylus born? Relate the most remarkable events of his life. When and where did he die? Write a short critique on his excellencies and peculiarities as a writer and thinker, so far as these appear to you to be discernible in this play.

7. Translate vs. 944—963.

8. Explain the composition and derivation of the following words:—ταχύπτεροι. ἀνήριθμον. παμμῆτορ. ναρθηκοπλήρωτον. ἀπλάτου. ἄτρεσ-

τοι. κνώδαλα. ἄκικυν. δύσοιστα. ἀνηρότους. ἄϊστον. κελαινόβρωτον. ἀνάυγητον, ῥάκος, ἀστεργάνορα.

9. Parse the following verbs;—ἐρεθιζέσθω. ἄνωγε. σέβου; σκεδᾶ· τέξει. λελειμμένοι. μέμνησαι. ἐκπέσῃ. προσέπτα. πέπονθας. ἥμαρτες. κεκραμένη. τεθηγμένους.

10. Translate vs. 1063—1079.

11. Translate and explain;—vs. 54. 115—116. τίς ὁδμὰ * * * κεκραμένη;. 366—69. κορυθαις * * * γύας. What event is supposed to be referred to in this passage, and in what year did it occur? 479—81. "οὐκ ἦν ἀλέξημ' * * * * κατεσκέλλοντο." Mention also the various kinds of remedies which physicians used in ancient times among the Greeks. 708. ἀνηρότους γύας. What region is supposed to be referred to here? 717. ἥξεις * * * ψευδώνυμον. What river? 860—61. What is the legend here alluded to?

12. Explain the construction of; *a*. vs. 938. *b*. 904—5. "ἀπόλεμος ὅδε * * * πόριμος. *c*. 891—93. What is the reading of the MSS. for ἄβροτον in vs. 2. In 430 what is Paley's reading for ὀχῶν στενάζει? In 948 after ὦν Paley inserts τε:—what difference does its insertion make in the translation? To what speakers are vs. 968—69, and 970 respectively attributed by Hermann, and, after him, Paley? Show from the context that their arrangement is preferable to that of Dindorf.

13. State the principal rules for the accentuation of words preceding an enclitic. When does an enclitic retain its accent? Define the terms *proparoxytone*, *paroxytone*, *oxytone*, *properispomenon*, and *perispomenon*, giving their derivation in each case. Accentuate, in the Active Voice, the 3 sing. Pres. Ind.; 1 sing. Imp. Ind.; 1 Aor. Inf.; 2 sing. Imperat.; and 1 Plu. Pres. Subj., of the verbs κινέω and πράττω.

14. *a*. Does the Relative, when in apposition to a noun, agree with it, or with its own proper antecedent? *b*. State the Rule for the attraction of the Relative. *c*. What does the *future* participle often express? *d*. In what case does the subject of the Infinitive stand? *e*. Can the Inflnitive be used, as in English, to express a purpose? *f*. What is the signification of the *Perf*. 2, and of the *Fut*. 3? *g*. What is the *Middle Voice* used to denote?

15. Translate into Greek;—He told them that he would endeavour to perform those things on condition that they should hold their peace; for, said he, I would choose to act thus in preference to all the good things I possess. But the king, who happened to be present, at the suggestion of others, preferred war to peace, although he was conscious that he was acting unjustly and doing great harm to the state. In this way he inflicted more damage upon the state than any other single person, and brought upon it unexpected woes.

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B. A. ORDINARY EXAMINATIONS. APRIL, 1860.

LATIN. { PERSIUS.—SATS. II. V. & VI.
TACITUS.—GERMANIA & AGRICOLA.

Examiner.....REV. PROFESSOR CORNISH.

1. Translate—Persius II. vs. 59—75.

2. *a.* In the reigns of what Roman Emperors did Persius live. *b.* Give the dates of his birth and death, with a description of his personal appearance and character, as handed down by his contemporaries. *c.* Write a critique on the character and style of the Satires of Persius. *d.* What poet did he take as his model? What peculiarities of his style are attributed by some to the dangerous times in which he lived? What more probable cause may be assigned?

3. *a.* Give the derivation of the word SATIRA:—to what part of speech does it properly belong? Adduce instances. *b.* Give an account of the rise and progress of Roman Satire, referring particularly to those writers who were most distinguished in this department of Latin literature, and to those passages in Horace which bear upon it. *c.* What were the *Saliaria carmina;* the *Carmina Fescennina;* and the *Exodia*?

4. Translate,—Persius V. 132—153.

5. Give the exact meaning and derivation of the following words found in these Satires:—scilicet, viatica, tressis, centusse, quincunce, deunces, lotus, peronatus, politus, œnophorum, obscœnum, artocreas, sinciput.

6. Explain, Sat. II. vs. 1. "Hunc diem lapillo." 3. 'Funde merum Genio.' 26. 'An quia * * * bidental.' 32. 'Frontemque * * * perita.' 46. 'Quo pacto * * * liquescant?' Explain this by an account of the mode of offering sacrifice as described by Homer. 65. 'Et Calabrum * * * vellus.' Where was the best purple dye produced? Sat. v. 30. "Quum primum * * * * pependit." 54. 'Mercibus * * * * cumini." What case is *mercibus*? Give the

force of *pallentis*. What does Horace say about the same thing? 62 Explain the construction of this, and also of 70—72. vs. 76—79. "quibus una vertigo * * * marcus Dama." 82. 'Hoc nobis pilea donant.' VI. 9. 'Lunai portum.' 55. 'Bovillas, Clivumque ad Virbi':—What places are these? 80. "Juventus * * * Acervi.'

7. Translate,—Tacitus—Germania—Chap. XI.

8. *a.* "Nox ducere diem videtur:"—Was this mode of computing time peculiar to the Germans among the ancient nations? Mention some English words in common use now derived from this custom. *b.* Point out what may be regarded in the institutions and customs of the ancient Germans as the rudiments of the Feudal system; knighthood; judicial combat; blazonry; and debts of honour, &c. *c.* What points of resemblance have been traced between the manners and customs of the Germans, and those of the aboriginal tribes of this continent?

9. Write short notes, with dates, of the several events and wars alluded to in Chap. xxxvii.

10. Translate,—Agricola—Chap. XXI. How does Ritter commence this Chap.? What are the various readings for:—*Centurionem*, *tributorum exactionem*, *ut civitates proximis hibernis*, and *ludere pretio?*

11. Give the exact import of the prepositions used by Tacitus in the following expressions:—Citra Romanum sanguinem bellanti; ex magnitudine deorum arbitrantur; in hæc munera uxor accipitur; pro solita Germanorum inertia; juxta libertatem; submittere crinem; ingemere agris.

12. Grammatical Questions. *a.* State the general rule for the sequence of Tenses in Latin. *b.* Mention the impersonal verbs that are followed by *ut* with the *subjunctive*. *d.* How do you express a *purpose* in Latin? *d.* What is *quo* equivalent to, and what is its force with the comparative? *e.* What do the participles in *rus* and *dus* often severally express? *f.* Define *Oratio obliqua*, *oratio recta*:—In the former, in what mood do the principal verbs stand? *g.* What class of verbs does *quod*, = *that*, follow?

13. Translate into Latin:—He sent thither M. Antonius with five cohorts of the 8th legion. The inhabitants of Sulmo, as soon as they saw our standards, opened their gates; and all, both townsmen and soldiers, came forth to meet Antonius with their congratulations. Lucretius and Attius threw themselves down from the wall. When Attius was brought before Antonius he begged that he might be sent to Cæsar. Antonius, with the cohorts and Attius, returns on the same day that he had set out thither.

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B. A. ORDINARY EXAMINATION. APRIL 1860.

GREEK. { EURIPIDES.—HECUBA. / THUCYDIDES.—BOOK II.

Examiner..... Rev. Professor Cornish.

1. Translate, Hecuba, vs. 555---582.

2. *a.* Write a short analysis of the plot of the Hecuba. *b.* Point out where the scene is laid, by a reference to particular passages in this Play. *c.* State the peculiarities of Euripides, as a dramatic poet;—as regards the manner in which he opens his plays, his treatment of the subject, and the introduction of the pathetic, the intellectual, and the poetic element;—in comparison with his great predecessors Æschylus and Sophocles.

3. Translate, Hecuba, vs. 905—931.

4. *a.* Name the principal Greek metres, and point out those measures in which *two* feet are required to make a metre. *b.* Write down the following feet;---Iambus, Trochæus, Anapæstus, Bacchius, Amphimacer, Choriambus, Ionicus a majore. *c.* Define the terms—*arsis*, *thesis*, *cæsura*, *synapheia*. *d.* Explain the construction of the metre called Iambic Trimeter Acatalectic, and illustrate by scanning vs. 890—895.

5. *a.* Explain the composition and derivation of the following words; —ἄθραυστοι, πτόρθος, δορίληπτος, ἀκραιφνές, ἔκβλητον, πέσημα, ἀνόνητα, λεηλατοῦντες, φροιμίοις, δέργματα. *b.* Parse and explain the following verbs:—λέλακας, ἠράσθη, δέδρακεν, ἐμπέπτωκε, κέκαρσαι, κίδναται, ἀμβήσει. *c.* Explain the construction of; *a.* 1234–37. *b.* 1240. *c.* 1075–77.

6. Translate, Thucydides, Bk. II. Chap. 43.

7. *a.* Give an account of the principal Greek historians that preceded Thucydides. *b.* Write a sketch of the life of Thucydides, and point out his excellencies as an historian. *c.* How much of the Peloponnesian War does his history comprehend?

8. Give the dates of the commencement and termination of the Peloponnesian War, together with a brief account of the events that gave rise to it.

9. State the difference in meaning between *μέτοικοι*, *ἄποικοι*, and *ἔποικοι*. Give Arnold's distinction between *κατασκευή* and *παρασκευή*.

10. Give an account of the constitution and powers of;—*a*. *ἡ βουλὴ ἐν Ἀρείῳπάγῳ*. *b*. *ἡ βουλὴ τῶν πεντακοσίων*. *c*. *ἡ ἐκκλησία*.

11. Translate, Bk. II. Chap. 83.

12. *ὑφορμισάμενοι*. What is the subject of this---1. according to the Scholiast on Thucydides, and---2. according to Arnold and other modern commentators? How do you explain the movements of the hostile fleets referred to in this passage?

13. Give the geographical position of;---Theræ, Platæa, Corcyra, Naupactus, Cyllene, Panormus, and Eubœa.

14. Write a brief description of the symptoms of the Plague at Athens. Mention the other great Plagues, which have ravaged Europe and Asia, since that at Athens.

15. Accentuate the following passage, introducing the *spiritus* also: *Ακουσας δε ο Τισσαφερνης εφη· ταυτα εγω απαγγελω βασιλει και υμιν παλιν τα παρ' εκεινου· μεχρι δ' αν εγω ηκω αι σπονδαι μενοντων· αγοραν δε ημεις παρεξομεν.*

16. *a*. State and explain the rule for the use of the Optative and Subjunctive after *ὅπως*, *ἵνα*, and *ὡς*. *b*. When the subject and the Predicate refer to the same object, what is the construction? *c*. How are verbals in *-τεος* formed? How are they construed? *d*. What class of verbs govern two accusatives? *e*. What is meant by the accusative of limitation? *f*. State the fundamental notion of the Genitive, and also of the Dative. *g*. Give the tenses in use of;---*ἄγνυμι*, *ἀιρέω*, *ἐυρίσκω*, *κτείνω*, and *ἵστημι*.

17. Translate into Greek;---But when Darius was dead and Artaxerxes had come into possession of the kingdom, Tissaphernes accused Cyrus to his brother of conspiring against him. There he remained fourteen days. In the fourth day's march from that place he held a review of his army. If they cared for the state they would provide for their own safety. If the wise and just had managed the affairs of the government the citizens would now be prosperous instead of wretched.

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EXAMINATION FOR HONOURS.

THIRD YEAR.

LATIN, { LIVY.—BOOK XXI.
CICERO.—PRO MURÆNA.
CICERO.—DE SENECTUTE.
TERENCE.—ANDRIA.

Examiner..... Rev. Professor Cornish.

1. Translate, Livy, Book XXI., Chaps. 16 and 37.

2. Translate, Cicero, Pro Muræna, § 32.

3. Translate, Cicero, De Senectute, § 23 :—"O præclarum diem" to the end.

4. Translate, Terence, Andria, Act II. Sc. 2; and Act V. Sc. 1.

5. Enumerate the principal historians among the Romans. Can you point out any resemblances, as regards style, intellectual qualifications, &c., between any of them and Herodotus and Thucydides?

6. "Malevoli veteris poetæ." Andria, Prolog. 6–7.—What poet is here alluded to? What was the ground of his hostility against Terence? What was the charge he continually urged against him?

7. Write a sketch of the life of Terence.

GREEK AND LATIN PROSE COMPOSITION.

1. Translate into Greek;—"And after him his two sons, Podalirius and Machaon, following Agamemnon in the war against Troy, afforded no trifling service to their fellow-soldiers. But yet Homer has described them not as having rendered them any aid against pestilence, nor the

various kinds of diseases, bnt only as being accustomed to cure wounds with the knife and medicinal applications. From which it is evident, that these were the only branches of medicine which they attempted; and that consequently these are the oldest. And from the same author we may learn, that diseases were referred to the anger of the gods, and that it was from them assistance was wont to be implored."

2. Translate into Latin;—

"The golden age of Trajan and the Antonines had been preceded by an age of iron. It is almost superfluous to enumerate the unworthy successors of Augustus. Their unparalleled vices, and the splendid theatre on which they were acted, have saved them from oblivion. The dark unrelenting Tiberius, the furious Caligula, the feeble Claudius, the profligate and cruel Nero, the beastly Vitellius, and the timid inhuman Domitian, are condemned to everlasting infamy. During fourscore years (excepting only the short and doubtful respite of Vespasian's reign), Rome groaned beneath an unremitting tyranny, which exterminated the ancient families of the republic, and was fatal to almost every virtue, and every talent, that arose in that unhappy period.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

GREEK,
- SOPHOCLES.—PHILOCTETES.
- EURIPIDES.—ALCESTIS.
- PLATO.—CRITO.
- ÆSCHINES.—ORAT. AGAINST CTESIPHON.

THIRD YEAR.

Honor Examination.

Examiner ..... Rev. Professor Cornish.

1. Translate, Philoctetes. *a.* vs. 391—411. *b* 1101---1121.

2. *a.* Give the legend of Philoctetes, and point out in what particulars Sophocles has departed from it in this play. *b.* Scan the vs. of the Chorus in extract *a.* Write down the scheme of the metre called Trochaic Tetrameter Catalectic, and also Anapæstic Dimeter Acatalectic. *c.* '*σύμβολον.*' Explain this word, and the custom connected with the use of the *σύμβολον* to which allusion is here made. *d.* Give the exact meaning and force of the prepositions used in the following expressions;---vs. 60. *ἐν λιταῖς.* 90. *πρὸς βίαν.* 148. *πρὸς ἐμὴν χεῖρα.* 904. *ἔξω τοῦ φυτεύσαντος.* 963. *ἐν σοί.* 1268. *ἐκ λόγων καλῶν.* *e.* 287. *διακονεῖσθαι*:—What is the quantity of the 2nd syllable? Give the reason for this by pointing out the derivation of the word. 473. *ἐν παρέργῳ θοῦ*:—Explain this, and give the Latin for it. 519—520. Upon what does the Genitive *τῆς νόσου* depend?

3. Translate, Alcestis. *a.* vs. 476---491. *b.* 962--979.

4. *a.* Write the plot of this Drama. What place in the list of the plays of Euripides is this supposed to occupy? On what ground is it said to be the last of a Tetralogy? *b.* What is the force of the particle *γε* in answers to questions? *c.* State the general rule for the use of the Article, as a relative pronoun, by the Tragic poets.

5. Translate, Crito. *a.* § XI. *b.* § XVII.

6. *a.* What is the subject of the Crito? Write a sketch of the line of argument employed by Socrates. *b.* Give an account of the leading Greek Philosophers and Sophists who flourished before the time of Socrates. *c.* Mention the most eminent followers and disciples of Socrates, and state what you regard to be the leading tenets of his philosophy.

7. Translate, Orat. against Ctes.;---*a.* § 69---70. *b.* 222---23.

8. Compare the style and relative oratorical merits and excellencies of Æschines and Demosthenes.

9. *a.* In what year B. C. was the speech against Ctesiphon delivered, and how many years after the moving of the indictment? What other orations of Æschines are extant? *b.* Mention the points of policy on which Æschines and Demosthenes, as statesmen, were at issue with one another. *c.* What are the strong points in the argument of this speech? How does Demosthenes meet them?

10. *a.* State and illustrate the precise meaning of the following expressions and terms, as used in the courts and public assembly of Athens;—*εἰσαγγελία. ἄγων. κρίσεις. γραφή. ἐπιτιμία. λογιστοί. τίμημα. νομοθέται. δικασταί. νόμος. προβούλευμα. ψήφισμα.* *b.* Distinguish between;---*θεῖναι νόμους, θέσθαι νόμους: γράφειν παράνομα, γράφεσθαι παρανόμων: ἀποψηφίζεσθαι, καταψηφίζεσθαι: δίκην φεύγειν, δ. ὀφλισκάνειν: ὁ διώκων, ὁ φεύγων.* *c. τὰ Διονύσια τὰ ἐν ἄστει*:—Give the other name of this festival. Also give an account of the other festivals of Dionysus, and of the *Παναθήναια.*

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EXAMINATION FOR HONOURS.

HISTORY, GRAMMAR, AND GEOGRAPHY.

THIRD YEAR.

Examiner..... REV. PROFESSOR CORNISH.

1. Give the date of the Ionic Revolt. What states took part in it? By what important consequences to Greece was it followed?

2. Give an account of the legislation of Solon at Athens. Write a sketch of the life of Peisistratus. For what is the literary world supposed to be indebted to him?

3. Describe the constitution and social customs of the Spartans. What great objects were aimed at by them?

4. Give an account of the Greek system of colonisation. Enumerate the principal colonies that were established by the several states, in Asia Minor, Italy, and Sicily.

5. Mention the principal writers in the Lyric, Epic, and Dramatic literature of both Greece and Rome. Give the names of the seven sages. What kind of poetry was cultivated by them?

6. What event is generally regarded as forming the boundary between the mythical and historical ages of Greece? Give an account, with the names, of the early logographers of Greece.

7. Write a geographical description of the Grecian settlements in Asia Minor and Italy. Give the political divisions of Central Greece.

8. What led the Athenians to interfere in the affairs of Sicily? At whose instigation was the expedition to Sicily undertaken? What were the causes and consequences of its failure?

9. What were the qualifications of birth requisite for citizenship at Athens? What alteration in the law, on this subject, is said to have been made in the time of Pericles, and why?

10. What were the λειτουργίαι at Athens? State the distinction between λειτουργία and εἰσφορά. What were the changes which Demosthenes effected in the law of the τριηραχία?

11. Give the date of the accession of Philip. Between what powers did the Sacred War commence? What reasons did Philip assign for his interference? What advantages did he gain by his termination of it? By what decisive battle did Philip completely establish the supremacy of Macedonia over the other states of Greece?

12. State the character, composition, and object of the Amphictyonic Council.

13. Who was the first Dictator at Rome; and on what occasion was he appointed? When was the Consulship first thrown open to the *Plebeians?* What were the powers of the Tribuni Plebis?

14. Give the dates of the following events;—The expulsion of the Tarquins; taking of Rome by the Gauls; defeat of Pyrrhus; the second Punic War; the destruction of Carthage; the conspiracy of Catiline.

15. Give the geographical situations of Capua, Saguntum, Carthage, Utica, Massilia, Tarentum, Corinth, and Rhodes.

16. *a.* Enumerate the various meanings of the Middle Voice in Greek;—give instances. *b.* What cases are commonly used absolutely in Greek? State the difference in meaning between the Gen. Abs. with ὡς, and without it? *c.* What is the general signification of the *Perf.* 2; and of the *Fut.* 3? *d.* What classes of verbs govern the Genitive?

17. *a.* How is the lack of the *Perf. Part. Act.*, in Latin, commonly supplied? *b.* Explain the following expressions; Sestertiûm sexagies. HS. M.DC., and HS. $\overline{\text{M.DCC}}$. *c.* Translate, according to our mode of reckoning, a. d. VI. Kal: Apr:. Id: Quinct:. Prid: Non: Mart:.

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B. A. EXAMINATION FOR HONOURS.

LATIN,
- PLAUTUS.—TRINUMMUS.
- TERENCE.—ADELPHI.
- TACITUS.—HIST., BOOK I.
- CICERO.—EP. AD ATTICUM, BOOK I.
- LUCRETIUS.—BOOKS V. AND VI.

Examiner.....REV. PROFESSOR CORNISH.

1. Translate, Plautus, Trinum. *a.* Act. III. Sc. I. *b.* IV. 1.

2. Translate, Terence, Adelphi. *a.* Act II. Sc. 4. *b.* IV. 4.

3. Translate, Tacitus, Hist I. Chaps. 20 and 71.

4. Translate, Cicero, Ep. ad Att. I. Ep. 4 and 15.

5. Translate, Lucretius, *a.* V. vs. 201—218. *b.* VII. 1136—60.

6. Point out any old grammatical forms that occur in the above extracts from Plautus and Lucretius.

7. Write a sketch of the rise and progress of Dramatic composition among the Romans.

GREEK AND LATIN PROSE COMPOSITION.

1. Translate into Greek;—

Pericles, who died about the beginning of the Peloponnesian war, was properly the first who carried eloquence to a great height; to such a height, indeed, that it does not appear he was ever afterwards surpassed. He was more than an orator: he was a statesman and a general, expert in business, and of consummate address. Forty years he governed Athens with absolute sway; and historians ascribe his influ-

ence, not more to his political talents than to his eloquence, which was of that forcible and vehement kind that bore everything before it, and triumphed over the passions and affections of the people. Hence he had given him the surname of Olympius; and it was said, that, like Jupiter, he thundered when he spoke. Though his ambition be liable to censure, yet he was distinguished for several virtues; and it was the confidence which the people reposed in his integrity that gave such a powerful effect to his eloquence.

2. Translate into Latin;—

Ancient Gaul, as it contained the whole country between the Pyrenees, the Alps, the Rhine, and the Ocean, was of greater extent than modern France. To the dominions of that powerful monarchy, with its recent acquisitions of Alsace and Lorraine, we must add the duchy of Savoy, the cantons of Switzerland, the four electorates of the Rhine, and the territories of Liege, Luxembourg, Hainault, Flanders, and Brabant. When Augustus gave laws to the conquests of his father, he introduced a division of Gaul, equally adapted to the progress of the legions, to the course of the rivers, and to the principal national distinctions, which had comprehended above a hundred independent states. The sea-coast of the Mediterranean, Languedoc, Provence, and Dauphiné, received their provincial appellation from the colony of Narbonne. The government of Aquitaine was extended from the Pyrenees to the Loire. The country between the Loire and the Seine was styled the Celtic Gaul, and soon borrowed a new denomination from the celebrated colony of Lugdunum, or Lyons.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

GREEK,
- PINDAR.—OLYMP. ODES.
- ÆSCHYLUS.—SEVEN AGAINST THEBES.
- ARISTOPHANES.—THE FROGS.
- THUCYDIDES.—BOOK VII.
- ARISTOTLE.—RHETORIC, BOOK I.

B. A. Honor Examination.

Examiner..... Rev. Professor Cornish.

1. Translate, Pindar;---*a*. Olymp. Ode II. vs. 1---50. *b*. VI. vs. 37---58.

2. *a*. Give a sketch of the life of Pindar. *b*. When were the Olympic Games instituted, and when were they discontinued? Of what contests did they consist? *c*. Explain the method of computing time by Olympiads.

3. Translate, Seven against Thebes;---*a*. v. 253---275. *b*. vs. 706---716.

4. *a*. Write a short critique on this play, and point out those peculiar features of it by which the great popularity it enjoyed among the ancients may be accounted for. *b*. Explain and give the derivation of; ---φροιμίοις πολυρρόθοις. vs. 8---9; on what does the genitive ὧν depend? πυργηρουμένοις. τάγευσαι. φράξαι πόλισμα. πολιάοχοι. ἀνάμιγα. ἀνδρηλάτην. *c*. What was the original metre of Greek Tragedy? Who introduced written Tragedy, female characters, and a second and third actor, respectively? *d*. How many actors are there in this play, and of whom does the Chorus consist? *e*. Give the etymology of the word *Drama*. Explain the terms *Strophe*, *Antistrophe*, and *Epode*. What part of the Greek theatre did the Chorus occupy?

5. Translate, The Frogs;---*a*. vs. 461---479. *b*. vs. 1195---1221.

6. *a.* Give an outline of the plot of this play. *b.* Explain the allusion of vs. 33---34. '*τί γὰρ * * ἐναυμάχουν*;' '*ἢ τ' ἄν * * * * μακρά.*' vs. 73. '*ὀυκ 'Ιοφῶν ζῇ*;' Who was this? 129. '*ἐς Κεραμεικόν.*' Where was this, and for what was it famous? 173. '*δύο δραχμάς*;---What was the value of the Attic drachma? 293. '*Εμπουσα*;---What was the popular belief respecting this monster? 509. '*κάλλιστ, ἐπαινῶ*:' Give the Latin expression for this. 569. Who was Cleon, and to what political party did he belong? *b.* Mention the principal writers of the *Old* Comedy of Greece.

7. Translate, Thucydides, VII.;---*a.* Chap. 26. *b.* Chap. 72.

8. *a.* When, and by whom, was Syracuse founded? What form of government existed there at the time of the Pelopennesian War? *b.* Draw a map of ancient Sicily, marking particularly the promontories and principal cities:---give also a general account of its physical geography. *c.* *Τάρας.* What was the Latin name of this place, and by whom was it founded? *d.* Explain the military operations of the contending forces before Syracuse.

9. *a.* How does Thucydides divide his narrative, and for what reason? *b.* Give an account of the Athenian method of computing time, as regards the division of;---1. the *day*:---2. the *month*:---3. the *year*. Explain what were *μῆνες πλήρεις* and *μ. κοῖλοι.* Express in Greek the 1st, 7th, 15th, and 24th of the month.

10. *a.* Give the precise meaning and derivation of the following words;---*ἀναγιγνώσκω, ἀντιπαρασκευάζω, ἀντιπαρατάσσω, ζωγρεῖν, καταπεπλῆχθαι, ἰσόῤῥοπος, ἀπηυτομολήκεσαν. ὑπόσπονδος.* *b.* Distinguish between;---*ἀναστῆναι, μετανίστασθαι; ὑπήκοοι, ξύμμαχοι, φόρου ὑποτελεῖς, αὐτόνομοι.*

11. Translate, Aristotle, Rhet. I. chap. 3.

12. Give an account of the life and writings of Aristotle.

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SESSIONAL EXAMINATIONS, APRIL, 1860.

GRAMMAR, HISTORY, AND GEOGRAPHY.

B. A. Honor Examination.

Examiner ..... REV. PROFESSOR CORNISH.

1. What were the pecuniary, military, and naval resources of the Athenians at the commencement of the Peloponnesian War?

2. Write a short account of the administration of Pericles at Athens, and point out in what respects you regard his line of policy to have been advantageous or prejudicial to the interests of his country.

3. Give an account of the events that furnished the King of Persia with a pretext for the invasion of Greece. At what dates, and under what kings and commanders, were the invasions severally made?

4. Give a description of the geographical position of the plain of Marathon. By what state were the Athenians assisted in the battle of Marathon? What illustrious generals lived at the time of the second Persian invasion? Give a description of the character and position of the Pass of Thermopylæ. Whence has it its name?

5. What was the relative importance of Athens and Sparta at the commencement of the Persian wars? In what respects did these contribute to give Athens the supremacy in the affairs of Greece?

6. Give a summary of the history of Athens and Sparta, between the expulsion of the Persians and the commencement of the Peloponnesian War. Enumerate the chief allies which these states severally had at this period.

7. Give the date of the expedition of Cyrus the Younger in Olympiads, and in the year B. C.

8. How long did the Spartan supremacy last, and by what power was it wrested from them?

9. In what year B. C. was Rome founded? Mention the leading changes in the Roman constitution from the time of the expulsion of the Kings to that of the first Punic War.

10. Give the dates of the Punic wars; of the subjugation of Greece by Rome; of the Servile war under Spartacus; of the battle of Pharsalia; of the death of Julius Cæsar.

11. Explain the difference between *Accent* and *Quantity*. State the principal rules for the use of Accents in the Greek language. By whom were they invented? Point out the differences in meaning, according to their accentuation, of the following words;—νομος. λευκη. καλως. πειθω. νοσων. σιγα. ειμι. ην.

12. With what tenses of the Indicative Mood is the particle ἂν joined, in a contingent or conditional signification?

13. Name the principal dialects of the Greek language, and point out their leading peculiarities. Turn the following passage into Attic;—μετὰ δὲ ταῦτα θυσίῃσι μεγάλῃσι τὸν ἐν Δελφοῖσι θεὸν ἱλάσκετο. ταῦτα ποιέων ἐπολέμεε ἔτεα ἕνδεκα. ταῦτα δὲ ἐπόιεε τῶνδε ἕινεκεν ὅκως ἂν δὴ ὁ κήρυξ ὁ Σαρδιηνὸς ἰδὼν τοὺς ἀνθρώπους ἐν ἐυπαθείῃσι ἐόντας ἀγγείλῃ Ἀλυάττῃ.

14. When is *Qui* used with the Subjunctive, in Latin, and when with the Indicative? State the rule for the use of the Reflexive Pronoun. How is emphasis indicated in a Latin sentence?

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McGILL COLLEGE,

MONTREAL.

SESSIONAL EXAMINATIONS. APRIL, 1860.

GEOMETRY, ALGEBRA, TRIGONOMETRY.

FIRST YEAR.

Ordinary Examination.

Examiner.....PROFESSOR JOHNSON.

1. Parallelograms standing on the same base and between the same parallels are equal. Prove also that this is true of triangles.

If two sides of a triangle be given in magnitude, at what angle must they be placed so that the area of the triangle shall be the greatest possible.

2. In any triangle, the square of the side subtending an acute angle, is less than the sum of the squares of the containing sides, by twice the rectangle under either of them and the part which is intercepted on it between the acute angle and the perpendicular let fall on it from the opposite angle.

3. In a circle, the angle in a semicircle is a right angle; the angle in a segment greater than a semicircle is acute; and the angle in a segment less than a semicircle is obtuse.

By the aid of this proposition, draw a tangent to a circle from a point given without it.

4. The sides about the equal angles of equiangular triangles are proportional; and those which are opposite to the equal angles are homologous.

If a line be drawn from the vertex of a triangle to the base, it divides every parallel to the base into segments which are in the same ratio as the segments of the base.

5. Find a mean proportional between two given straight lines.

6. If four straight lines be proportional, the rectangle under the extremes is equal to the rectangle under the means.

If a quadrilateral be inscribed in a circle, the rectangle under the diagonals is equal to the sum of the rectangles under the sides.

7. Find the value of $3a^2 + 7\sqrt{ab} - [3(a-b)(c-d)]^{\frac{1}{3}}$ when $a = 3$, $b = 12$, $c = 6$, $d = 5$.

8. Multiply $a^{3n} - a^{2n}x^n + a^n x^{2n} - x^{3n}$ by $3a^n + 3x^n$.
Divide $x^3 + px^2 + qx + r$ by $x + a$.
Show that $-a \times -b = +ab$.

9. Find the greatest common measure of
$a^3 + 3a^2x - 10ax^2 - 24x^3$ and $a^2 + 2ax - 8x^2$.
Find the least common multiple of
$4a^2(a^2 - x^2)$, $2ax(a+x)^2$, and $7abc(a^4 - x^4)$.

10. Solve the equations $\frac{3x-9}{5} - \frac{2x+1}{3} = \frac{3x-5}{15}$;
$\frac{bx}{a} + \frac{c+dx}{ex} = f$; $\frac{x}{3} - \frac{y}{6} = 1$ and $\frac{x}{4} - \frac{y}{9} = 1$.

11. Solve the equations $x - 1 = 2 + \frac{2}{\sqrt{x}}$; $\frac{1-ax}{1+ax}\sqrt{\frac{1+bx}{1-bx}} = 1$;
$x^3 + y^3 = p$ and $x + y = q$.

12. A farmer buys m sheep for p £ and sells n of them at a gain of 5 per cent.; how must he sell the remainder that he may clear 10 per cent on the whole?

13. Define the units of angular measure in common use. If a right angle be adopted as the unit, determine the numerical expression for an angle subtended by an arc 6 feet in length, when the radius of the circle is 10 feet; assuming that the circumference $= 2\pi r$.

14. Define sine, cosine, and tangent, of an angle.
Prove $\tan A = \frac{\sin A}{\cos A}$; versin $90° = 1$; and $\sin A = \frac{\tan A}{\sqrt{1 + \tan^2 A}}$.
Trace the changes in the value and sign of sin A from $A = o$ to $A = 270°$.

15. Prove $\sin(A + B) = \sin A \cos B + \cos A \sin B$.

16. Prove $\cos 2A = \frac{1 - \tan^2 A}{1 + \tan^2 A}$.

17. Define the logarithm of a number.
Prove that $\log NM = \log N + \log M$, and $\log N^p = p \log N$.

18. In a plane triangle given $a = 516$, $b = 219$, and $C = 98° 54'$; find A and B.

The hypotenuse of a right-angled triangle is 100 and one of the angles is 39° 48′; find the sides.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

GEOMETRY, ALGEBRA, TRIGONOMETRY.

SECOND YEAR.

Ordinary Examination.

Examiner ..... PROFESSOR JOHNSON.

1. Define a Parabola, and trace its figure.

2. The tangent at any point P of a parabola bisects the angle between the focal radius vector $S\,P$ and the perpendicular $P\,M$ on the directrix.

Tangents at the extremities of a focal chord intersect at right angles on the directrix.

3. If $P\,V$ be a diameter drawn through any point P on a parabola, and $Q\,V$ be an ordinate to it, prove $QV = 4\,SP \cdot PV$; S being the focus.

4. If a solid angle be contained by three plane angles, any two of them are greater than the third.

5. The sum of the internal angles of every triangle is equal to two right angles. If the base angles of an isosceles triangle be each double the vertical angle, what is the number of degrees in the vertical angle? Find its circular measure.

6. Divide a given right line so that the rectangle under the whole line and one segment shall be equal to the square of the other.

Solve this question algebraically also, the length of the given line being a.

7. Give Euclid's definition of the proportionality of four magnitudes (i. e. when the first is to the second as the third is to the fourth), and illustrate it by numerical examples.

Prove that triangles or parallelograms having equal altitudes are to one another as their bases.

8. Equal and equiangular paralellograms have their sides about the equal angles reciprocally proportional; and, conversely, equiangular parallelograms which have their sides about the equal angles reciprocally proportional are equal to one another.

9. Simplify $\dfrac{1-\frac{1}{2}[1-\frac{1}{3}(1-x)]}{1-\frac{1}{3}[1-\frac{1}{2}(1-x)]}$

and $\dfrac{x+2}{2(x+1)}+\dfrac{2-1}{2(x-1)}-\dfrac{x}{x^2+1}$.

10. Solve $5x+7y=43$, $11x+9y=69$: $\dfrac{x}{x-1}-\dfrac{x}{x+1}=\dfrac{4}{3}$: $x^2+y^2=a$ and $x+y=b$.

11. Sum the series $\frac{1}{3}+\frac{1}{6}+\frac{1}{12}+$ &c. to 10 terms.

12. In a mixture of copper, lead, and tin, the copper was 5 lb. less than half the whole quantity, and the lead and tin each 5 lb. more than a third of the remainder; find the respective quantities.

13. Find the numerical value of sin 18°.

14. Prove $\cos(A-B)=\cos A\cos B+\sin A\sin B$.

15. Prove $\cos(A+B)\cos(A-B)=\cos^2 A-\sin^2 B$.

16. Prove that in a plane triangle $\sin\frac{1}{2}A=\sqrt{\dfrac{(s-b)(s-c)}{bc}}$.

17. Given two sides a and b of a triangle and the contained angle C. Show that we can calculate logarithmically the third side c without previously finding the remaining angles by assuming an auxiliary angle ϕ, such that

$$\cos^2\phi=\frac{4ab\cos^2\frac{1}{2}C}{(a+b)^2};$$

and that we shall then have $c=(a+b)\sin\phi$.

Ex. In order to find the distance of two headlands, I measure their distances from a point inland, 2 miles 560 yards, and 3 miles 88 yards, respectively; the angle they subtend at this point is 54° 32′ 40″; what is their distance?

18. What is meant by the *ambiguous* case in the solution of triangles? Explain it both trigonometrically and geometrically. Given $b=312$, $a=517$, and $A=124°\ 32'$; find B.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

MECHANICS, HYDROSTATICS, OPTICS, ASTRONOMY.

THIRD YEAR.

Ordinary Examination.

Examiner..... PROFESSOR JOHNSON.

1. Prove that if two forces be applied to the same point, their moments with respect to any point on their resultant are equal.

2. State the principle of "constancy of work done"; and apply it to determine the ratio of the Power to the Resistance parallel to the axis in the Screw.

If the interval between the threads of a Screw be $\frac{3}{4}$ths of an inch, and the radius of the circle described by the Power be 2 feet, find the Resistance which a Power of 32 cwt. will sustain.

3. Prove that the velocity acquired by a body in running down an inclined plane is equal to the velocity acquired in falling down the height of the plane.

4. Assuming that when a body moves in a circle the centrifugal force is proportional to $\frac{r}{T^2}$ (r being the radius and T the periodic time), prove that the diminution of gravity at any place owing to the Earth's rotation varies as the square of the cosine of the latitude.

Supposing the earth were originally fluid and spherical, what effect would the rotation have on its shape?

5. Prove that a body projected in any direction not vertical, would describe a parabola if acted on by gravity alone.

To what distance measured on a horizontal plane will a shell be projected, which is discharged with a velocity of 520 feet per second, and at an elevation of 36°?

6. Show how to find the specific gravity of a body by means of the hydrostatic balance, (1) when the specific gravity of the body is less than that of the fluid in which it is weighed, (2) when greater.

7. Prove the following formula for finding the sp. gr. of a nugget of gold and quartz:

$$G = N\frac{(n - q)\ g}{(g - q)\ n}.$$

G = weight of gold; g = its sp. gr.
N = weight of nugget; n = its sp. gr.
q = sp. gr. of quartz.

8. Describe the Suction-Pump. A pump which will not work is often rendered effective by pouring in water above the piston. Explain this.

9. If I be the absolute brightness of a small luminous surface, and A its area, show that the intensity of illumination at any distance D is $\frac{A\ I}{D^2}$.

Describe Wheatstone's Photometer, and the manner of using it to determine the relative intensities of two lights.

10. Prove that a luminous *point* presented to a plane mirror will give rise to an image, mentioning any experimental law introduced in the proof; and explain then the formation of the image of any object.

Account for the appearance of *two* images in a badly-silvered mirror, and of only *one* when the mirror is well silvered.

11. A luminous point is placed on the axis of a lens at the distance D from the surface, μ is the index of refraction of the material of the lens, r and r' are the radii of its surfaces, r being nearest the light; show that the distance d of the conjugate focus is given by the formula

$$\frac{1}{d} - \frac{1}{D} = (\mu - 1)\left(\frac{1}{r} - \frac{1}{r'}\right).$$

What is meant by the focal length of a lens? How is it practically determined?

12. Describe the Astronomical Telescope. Find the magnifying power of a refracting astronomical telescope whose object-glass is of 10 ft. focal length, and eye-glass of $\frac{1}{2}$ in., used by a person whose least distance of distinct vision is 3 in.?

13. What is meant by the Celestial Pole. Define Equator, Ecliptic; the Declination, Right Ascension, Polar Distance, Latitude, Longitude, Altitude, and Azimuth of a Star; Hour Circle and Vertical Circle; Latitude and Longitude of a place on the Earth.

14. Assuming the Earth to be a sphere, show that the Altitude of the Pole will be equal to the Latitude of the Place.

The north polar distance of η Ursæ Majoris is 39° 56′ 48″; determine its least altitude at Montreal, latitude 45° 31′ N.

15. State clearly Cavendish's method of ascertaining the mean density of the Earth, and describe the apparatus with which the experiment was performed.

16. Prove the following formula for the effect of refraction on the position of a star whose zenith distance is z.

$$r = (\mu - 1) \tan z.$$

State within what limits it is true, and show that if μ (the refractive index of the air) be 1·0002836, then

$$r'' = 58''.49 \tan z.$$

17. Find the length of the shadow of the Moon produced by the Sun, the diameters of the Sun and Moon being 888,000 and 2153 miles respectively, and their distance being 95,000,000 miles. State the circumstances under which an Eclipse is Partial, Total, or Annular.

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B. A. ORDINARY EXAMINATION. APRIL, 1860.

MECHANICS, HYDROSTATICS.

Examiner.....PROFESSOR JOHNSON.

1. If three forces, P, Q, R, acting on a point O, equilibrate each other, prove that

$P : Q : R :: \sin Q\,O\,R : \sin R\,O\,P : \sin P\,O\,Q$, where $Q\,O\,R$, $R\,O\,P$, $P\,O\,Q$, denote the angles between the forces Q and R, R and P, P and R, respectively.

2. Find the centre of gravity of a triangular pyramid.

3. Investigate the condition of equilibrium in the Wheel and Axle. The Resistance of a sluice-gate to which a cogged rack is attached amounts to 1 ton; if this be raised by means of a winch and pinion having for radii 1 ft. 7 inches, and 2.5 inches, respectively, calculate the Power which must be applied to the handle so as just to sustain the Resistance.

4. Describe the two kinds of Burton pulleys, and find the ratio of the Power to the Resistance in each.

Compare their efficiency when each system has 10 moveable pulleys.

5. A carriage-wheel whose weight is W and radius r rests upon a level road; show that the horizontal force necessary to draw the wheel over an obstacle of height h, must be greater than $W\frac{\sqrt{2\,r\,h - h^2}}{r - h}$

6. Define Velocity, Specific Gravity, Quantity of Matter, Quantity of Motion. A cubic foot of copper (sp. gr. 8.90) moves with a velocity of 1407 yards per minute; find its quantity of motion, volume being measured in cubic inches.

7. What is the Dynamical measure of a constant force? Prove the following relations between the velocity, force, time, and space, when a body originally at rest is acted on by a constant force :—

$$v = ft\,;\ s = \frac{vt}{2}\,;\ v^2 = 2fs\,;\ s = \frac{ft^2}{2}.$$

In what manner must these equations be modified if the body have originally a velocity V, acting *with* or *against* the force?

8. Prove the following rule for calculating the height of a place approximately, and state the causes of error in it:---

The height of any place in feet is equal to the square of the number of quarter seconds occupied by a body in falling from the top to the bottom.

9. Two weights, P and P', rest on inclined planes, the inclinations being i and i', and are joined by a string passing without friction over a pulley at the common vertex of the planes; find the acceleration acquired in one second by the weights.

10. An elastic ball having the mass M moves with a velocity V and strikes another ball (mass $= M'$) moving with a velocity V' in the same line and in the same direction; determine the motion of each after impact, pointing out where any experimental law is assumed in the investigation.

11. State the principle of Archimedes with regard to the equilibrium of floating bodies and show its truth. If a mass of cork weighing 20 lbs. (sp. gr. ·240) be immersed in water, with what force will it rise towards the surface?

12. A piece of larch-wood weighs 50 grains; a brass weight weighing 87.22 grains in water is attached to it, and the compound body when sunk in water is found to weigh 42.88 grains; determine the sp. gr. of the wood.

13. Water is said to be about 815 times heavier than air. Under what conditions is this true? Describe an experiment by which the fact is ascertained.

A specific-gravity bottle when filled with water weighs 752.32 grs.; when filled with air, 252.21 grs.; determine the weight of the bottle, the weight of the water, and the weight of the air contained in it.

14. Describe the construction of the suction and lifting pump and its mode of operation.

If the height of the cistern above the well be 25 feet, the diameter of the piston 2 inches, and the leverage of the handle 12 : 1; calculate the force necessary to use in pumping.

15. If the volume of the receiver and leading-tube of an air-pump be three times that of the pump, calculate the elastic force of the air in the receiver after the 10th stroke.

16. Explain the principle of the siphon, and determine the force which causes the descent of the liquid.

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B. A. ORDINARY EXAMINATION. APRIL, 1860

ASTRONOMY, OPTICS.

Examiner..... PROFESSOR JOHNSON.

1. Give the proof of the Annual Revolution of the Earth derived from the Aberration of the Fixed Stars.

The time of revolution is said to be $365^d\ 6^h\ 9^m\ 10^s.7$; state generally how this is ascertained? Define a *year*.

2. The Sun's least apparent diameter being $31'\ 30''.2$, and the greatest $32'\ 34''.6$, determine the eccentricity of the Earth's orbit.

3. At a time when the declination of the Sun was $17°\ 13'\ 54''$ N., the shortest shadow cast by an upright pole 6 feet in height, on a horizontal plane, at a certain place, was 4 feet in length. Determine as nearly as you can from these data the latitude of the place.

4. Given the latitudes (l, l') of two observatories on the same meridian and the zenith distances (z, z') of the Moon as observed from them at the same instant, also the radius (r) of the Earth, show that the distance of the Moon from the Earth $= r \times \frac{\sin z + \sin z'}{z + z' - l - l'}$.

5. Show that the enlightened part of the Moon visible to us is proportional to the external angle at the Moon between the lines joining its centre to the Earth and Sun, and thence account for the *Phases* of the Moon during one revolution.

6. Exhibit by means of diagrams the relative lengths of day and night at the following places: the pole; the equator; latitude 66° 32′ North; latitudes greater and less than 66° 32′ North.

7. Mercury appears sometimes to move from west to east; sometimes from east to west; occasionally it appears stationary. How does the Copernican System account for these appearances?

8. Explain the methods of finding the distance of Mercury from the Sun:

(1) by his greatest elongation.
(2) by his horizontal parallax.
(3) by his greatest and least apparent diameters.

9. If R & T denote the distance of the Earth from the Sun, and its periodic time; r and t the distance of the Moon from the Earth, and the Moon's periodic time; show that

The mass of the Sun : The mass of the Earth : : $\frac{R^3}{T^2} : \frac{r^3}{t^2}$, and calculate the ratio of the Mass of the Sun to the Mass of the Earth from the following data:

$R = 12032$ Equatorial Diameter of the Earth.
$r = 29.982$ do. do.
$T = 365.265$ days.
$t = 27.321$ do.

10. Prove the formula $\frac{1}{D} + \frac{1}{d} = \frac{2}{r}$ connecting the distances of a luminous point and its image from the surface of a spherical reflector. Trace the relative positions of the point and image as the point moves in from a great distance up to the surface of the mirror.

Prove that a parabolic surface will reflect all rays proceeding from its focus in parallel directions.

11. Find the centre of a lens. Show that the conjugate focus of a luminous point *not* situated on the axis of a lens may be found from the formula

$$\frac{1}{d} - \frac{1}{D} = (\mu - 1)\left(\frac{1}{r} - \frac{1}{r'}\right);$$

where D and d are the distances of the point and its conjugate respectively from the lens, r and r' are the radii of the lens (r being nearer the light), and μ is the index of refraction.

An object 5 in. in diameter is placed at a distance of 14 in. from a convex lens of 7 in. focal length; find position and magnitude of image.

12. Define the *dispersive power* of a body. The dispersive power of crown glass is .036; find in minutes and seconds the *dispersion* produced by a convex lens of this material having an aperture of 1 inch and a focal length of 3 feet.

The dispersive power of flint glass is .048. Determine the focal length of a lens made of this so as to achromatize the above, and also whether it ought to be convex or concave.

13. Describe the eye as an optical instrument.

14. Describe the simple microscope, and explain a method of calculating its magnifying power.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

HEAT, ELECTRICITY, AND MAGNETISM.

Examiner..... PROFESSOR JOHNSON.

1. State the principle on which instruments to measure the temperature of bodies are constructed. Describe the process of construction of the mercurial thermometer and the different scales of graduation, forming also rules for converting any number of degrees in one scale into the corresponding number on another.

Reduce 62° Fah. to the Centigrade scale.

2. If L be the length of a bar of metal at the temperature t, and L' at the temperature t', find the coefficient of linear expansion for 1° Fah.

Show that the coefficients of superficial and cubical expansion are approximately double and treble this respectively.

3. State Dalton and Gay-Lussac's law for the effect of a change of temperature on the volume of a gas, and apply it to determine the volume of a gas at 120° Fah. which at 80° occupies 100 cubic inches.

4. Define the *unit* of heat, and *specific* heat. Describe the method of ascertaining specific heat by mixtures, stating the cases in which it is inapplicable.

5. A mass of mercury at the temperature 60° filling a cylindrical bottle 3 inches in height and 2 inches in diameter, is raised to the temperature 300° and shaken with 8 lbs. of water at 55°. Find the temperature of the mixture. (Specific heat of mercury = .033; specific gravity = 13.5; weight of a cubic inch of distilled water at 60° = 252.5 grs).

6. Describe an experiment by which the existence of *latent* heat is proved.

If 10 lbs. of water (latent heat 143°) be cooled down *without freezing* to the temperature 22° Fah. and then be agitated, what will be the weight of the mass of ice produced?

7. Find approximately the mechanical effect produced by the evaporation of 1 lb. of water at the temperature 212°, assuming that a cubic inch of water swells into 1696 cubic inches of steam?

8. Describe a simple experiment showing the variation of the boiling-point of water with the change of pressure.

9. Give Wells' Theory of the formation of dew.

10. Describe the effects of heat as affecting the electrical conductive power of *metals*, *liquids*, and *glass*.

11. A Leyden jar is charged with electricity from a plate machine; explain the entire process fully from the first development of the electricity, describing particularly the inductive action which takes place.

12. How is it shown that the atmosphere generally contains free electricity, and how is the *kind* determined?

Describe the lightning-rod, and give rules to be observed in its construction, stating the reasons for the rules as far as you are acquainted with them.

13. How is the identity of frictional electricity with that obtained from the Voltaic battery established.

14. Describe fully Grove's nitric-acid battery, explaining its action and stating the advantages of the arrangement.

15. Describe the process of electro-plating.

16. Give Ampère's theory of magnetism, describing some experiments which seem to confirm it. Describe an instrument for obtaining an electric current by means of a magnet.

17. What is meant by the terms, *variation* and *dip* of the needle? Define *Magnetic Meridian* and *Magnetic Equator*. Describe the methods of ascertaining the variation and dip of the needle at any place.

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SESSIONAL EXAMINATIONS, APRIL, 1860.

GEOMETRY, ALGEBRA, TRIGONOMETRY.

FIRST YEAR.

Honor Examination.—FIRST DAY.

Examiner ..... PROF. JOHNSON.

1. Given in position one pair of opposite sides of a quadrilateral, and the point of intersection of the other pair, find the locus of the intersection of the diagonals.

2. If the sides of a variable triangle pass through three given points in a right line, and if two angles move on given right lines, the third angle will always lie on one of two definite right lines, passing through the intersection of the two given lines.

3. In a given triangle, inscribe another such that each side may pass through a given point. How many possible solutions?

4. Define *pole* and *polar* with reference to a circle. Any right line through the pole is cut harmonically by the circle and polar.

5. Find the *radical axis* of two given circles.

6. Give Plato's, Philo's, and DesCartes' methods of finding two mean proportionals between two given right lines.

7. Given three lines in position and magnitude, find the locus of the common vertex of three triangles standing on them such that the sum of the areas of the three triangles shall be constant.

8. Let two points A and B be on the same side of an indefinite right line; let AB be divided into $m+n$ equal parts; let M be a point on it such that m of these parts lie next A, and n next B; from A, M, and B let fall perpendiculars AP, BQ, MN, on the indefinite line; prove that $(m+n)\,MN = n\,AP + m\,BQ$.

9. Find the number of permutations of n letters, of which p are a's, q are b's, r are c's.

10. Prove the truth of the Binomial Theorem for a positive index.

11. Resolve $\frac{1}{(x-a)(x-b)(x-c)}$ into partial fractions.

12. The three roots of the equation $x^3 - 11x^2 + 36x - 36 = 0$ are in harmonical progression; find them.

13. Change the equation $x^4-12x^3+15x^2+196x-480=0$ into another wanting the second term.

14. Find the three roots of $x^3-1=0$.

15. Solve the equations $\sin x + \sin y = a$ and $\cos x + \cos y = b$.

16. Find the value of $\cos 3A$ in terms of $\cos A$.

17. Prove $\tan \frac{1}{2}A = \pm \sqrt{\frac{2 \sin A - \sin 2A}{2 \sin A + \sin 2A}}$.

18. If $A+B+C = 180$ prove that
$$\tan A + \tan B + \tan C = \tan A \tan B \tan C.$$

19. Prove that $(\cos \theta \pm \sqrt{-1} \sin \theta)^m = \cos m\theta \pm \sqrt{-1} \sin m\theta$ if m be positive.

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SESSIONAL EXAMINATIONS, APRIL, 1860.

GEOMETRY AND ALGEBRA.

FIRST YEAR.

Honor Examination.—SECOND DAY.

Examiner.....PROFESSOR JOHNSON.

1. The sixty Pascal's lines of a hexagon inscribed in a circle consist of twenty sets of three, each set passing through a point.

2. A right line cutting the sides and diagonals of any quadrilateral is cut in involution.

3. If two triangles $A\,B\,C$, $A'\,B'\,C'$ be such that the lines joining corresponding vertices AA', BB', CC', meet in a point O, the intersections of corresponding sides lie on one right line. Prove also that this is true if the triangles are in different planes.

4. Given a point, and a system of circles having a common radical axis, find another point through which the polars of the given point, with respect to the circles of the system, shall all pass.

5. Inscribe a polygon in a given circle so that each side shall pass through a given point, the order of succession of the sides, with respect to the given sides being assigned.

6. Define *centre of mean position* of any number of points. Prove that the sum of the squares of the distances of n points from their centre of mean position is less than the sum of the squares of their distances from any other point, by n times the square of the line joining this point with the centre of mean position.

7. Given, of a triangle, the bisector of the base, the rectangle under sides, and the difference of the base angles, construct it.

8. Find the locus of the centre of a circle which cuts at right angles the circumferences of two circles given in position.

9. Prove Cardan's formula for the solution of a cubic equation; and show that it is defective when the roots are all real.

10. Solve the equations

$$4x^6 - 24x^5 + 57x^4 - 73x^3 + 57x^2 - 24x + 4 = 0$$

$$x^5 - 1 = 0.$$

11. If the roots of the equation $x^3 + px^2 + qx + r = 0$ be a, b, c, form from it the equation whose roots are $a + b$, $b + c$, $a + c$.

12. Find the value of the symmetrical function $\Sigma(a^2 b^2)$ of the roots of the equation

$$x^n + px^{n-1} + qx^{n-2} + rx^{n-3} + x^{n-4} + \&c. = 0.$$

13. Resolve $\dfrac{1}{x^5 + x^4 + 2x^3 + 2x^2 + x + 1}$ into its partial fractions.

14. Given $y = x - \frac{1}{2}x^2 + \frac{1}{3}x^3 - \frac{1}{4}x^4 + \&c.$, find x in a series of powers of y.

15. Find the amount of P£ at the end of 7 years at 6 per cent. compound interest, the interest being due yearly. What would the amount be, interest being due quarterly? Find in what time the money will be doubled.

16. Explain the method of calculating the present value of an annuity of £1 to be continued during the life of an individual of a given age, allowing compound interest for the money.

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SESSIONAL EXAMINATIONS, APRIL, 1860.

CALCULUS, ANALYTIC GEOMETRY, TRIGONOMETRY, ALGEBRA.

SECOND YEAR.

Honor Examination.—FIRST DAY.

Examiner ..... PROF. JOHNSON.

1. Define *differential coefficient*. Find the differential coefficients of x^m, $\sin x$, and a^x.

2. Differentiate $\frac{\sqrt{x^2+1}-x}{\sqrt{x^2+1}+x}$; $e^x \cos x$; $x^{\sin x}$.

3. State and prove MacLaurin's Theorem for the development of any $f(x)$. Develop $\sin x$ by means of it.

4. Explain the methods of determining the position of a point in a plane in Cartesian and in polar co-ordinates, and find the general equation of a right line in each system.

5. Construct the lines $5x-4y-20=o$; $2y-3x-6=o$. Find the co-ordinates of their point of intersection. Find the angle between them.

6. Taking any axes you prefer, find the equations of the perpendiculars at the middle points of the sides of a triangle and show that these perpendiculars meet in a point.

7. Given the base of a triangle, and m times the square of one side, $\pm n$ times the square of the other; show that the locus of the vertex will be a circle and find its centre and radius.

8. Trace the figures of the ellipse, hyperbola, and parabola, from their equations $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$; $\frac{x^2}{a^2}-\frac{y^2}{b^2}=1$; $y^2=px$.

9. Find the equations of the tangent and normal at any point for each of these curves. Prove that in the parabola the sub-normal is constant.

10. Prove that the sum of the distances of any point of the ellipse from the focus is constant. What is the corresponding property of the hyperbola?

11. The rectangle under the perpendiculars from the foci on a tangent to an ellipse is constant and equal to the square of the semi-axis minor.

12. In a spherical triangle $\cos A = \dfrac{\cos a - \cos b \cos c}{\sin b \sin c}$.

13. The hypotenuse of a right angled spherical triangle is 75° 20′ and a side is 64° 10′; find the other parts.

14. Prove Demoivre's Theorem for positive and for negative indices

$$(\cos\theta \pm \sqrt{-1}\sin\theta)^m = \cos m\theta \pm \sqrt{-1}\sin m\theta.$$

15. Expand a^x by the method of indeterminate coefficients. Calculate the value of the base of the Napierian system of logarithms, $e = 2{\cdot}7182818$.

16. Assuming the expansion of e^x prove

$$\cos x = \tfrac{1}{2}\left\{e^{x\sqrt{-1}} + e^{-x\sqrt{-1}}\right\}$$

$$\sin x = \frac{1}{2\sqrt{-1}}\left\{e^{x\sqrt{-1}} - e^{-x\sqrt{-1}}\right\}$$

17. Prove $\log_e(1+z) = z - \frac{1}{2}z^2 + \frac{1}{3}z^3 - \&c.$

18. Sum the series $1^2 + 2^2 + 3^2 + \&c.$ to n terms.

19. Find the number of combinations of n things taken r together.

20. Find the vulgar fraction equivalent to $P{\cdot}QQQ$ &c., where P contains p digits and Q contains q digits recurring *ad inf.*

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SESSIONAL EXAMINATIONS, APRIL, 1860.

CALCULUS, ANALYTIC GEOMETRY, TRIGONOMETRY.

SECOND YEAR.

Honor Examination.—SECOND DAY.

Examiner ..... PROF. JOHNSON.

1. Prove Leibnitz's Theorem that if u and v be two functions of x

$$\frac{d^n (u\,v)}{dx^n} = \frac{d^n u}{dx^n} + n\frac{dv}{dx}\frac{d^{n-1} u}{dx^{n-1}} + \frac{n\,(n-1)}{1\cdot 2}\frac{d^2 v}{dx^2}\frac{d^{n-2} u}{dx^2} + \&c.$$

2. Prove Taylor's Theorem and apply it to the expansion of $\log (x + h)$.

3. Differentiate $\cos^{-1}\left(\frac{b + a\cos x}{a + b\cos x}\right)$; $\log \cos^{-1} (1-x^2)^{\frac{1}{2}}$.

4. Show that the general equation of the second degree $Ax^2 + Bxy + Cy^2 + Dx + Ey + F = 0$ includes three distinct classes of curves as regards form, and determine a test for distinguishing the class which any particular equation represents.

5. Transform the equation of the ellipse

$$13\,(x^2 + y^2) + 10\,xy = 36\,(x + y - 1)$$

to the axes.

6. Find the parameter of the parabola

$$(ax + by)^2 + Dx + Ey + F = 0.$$

7. Prove that the sum of the squares of any pair of conjugate diameters of an ellipse is constant. What is the corresponding property of the hyperbola?

8. Prove that confocal conics cut at right angles.

9. Given base and difference of base angles of a triangle; find locus of vertex.

10. Given any point O, and any two lines through it; join both directly and transversely the points in which these lines meet a conic; then if the direct lines meet each other in P and the transverse in Q, the line QP will be the *polar* of the point O with regard to the conic.

11. A line is drawn parallel to the base of a triangle and the points where it meets the sides joined to any two fixed points on the base; find the locus of the point of intersection of the joining lines.

12. Show that three right lines will pass through the same point, if their equations being multiplied each by any constant quantity, and added together, the sum is identically $= o$.

13. Prove that in a spherical triangle

$$\sin \tfrac{1}{2}A = \sqrt{\frac{\sin (s-b) \sin (s-c)}{\sin b \sin c}}.$$

Given $a = 33^\circ\ 4'$; $b = 74^\circ\ 16'$; $c = 94^\circ\ 18'$; find A.

14. Investigate the formula for the area of a spherical triangle in terms of the *spherical excess* and the radius of sphere.

If the radius of sphere be 4000 miles and the spherical excess be $1^\circ\ 21'\ 32''$, calculate the area in square miles.

15. Sum the series

$$\sin \alpha + \sin (\alpha + \delta) + \sin (\alpha + 2\delta) + \&c. \text{ to } n \text{ terms.}$$

16. Find the number of different values comprised in the functions

$$\cos \frac{2m\pi + \theta}{n} \text{ and } \sin \frac{2m\pi + \theta}{n}$$

when successive integral values are assigned to n.

17. Prove $\log_e (y+1) = \log_e y + 2\left\{ \frac{1}{2y+1} + \frac{1}{3}\left(\frac{1}{2y+1}\right)^3 + \&c. \right\}$

18. Prove the truth of the rule employed in finding the approximate logarithms of numbers consisting of more places of figures than those in the tables.

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SESSIONAL EXAMINATIONS, APRIL, 1860.

ASTRONOMY, MECHANICS, HYDROSTATICS, CALCULUS.

THIRD YEAR.

Honor Examination.—FIRST DAY.

Examiner..... PROFESSOR JOHNSON.

1. Find a formula for determining the deviation of the plane, in which a transit instrument moves, from the meridian, by means of the observed times of transit of two known stars.

2. Explain the method of determining the co-efficient of atmospheric refraction from observations of circumpolar stars.

3. At a place in lat. 25° 40′ N. the Sun's correct central altitude was found to be 10° 6′ 27″, when his declination was 8° 5′ 56″ S. What was his distance from the meridian?

4. The declination of the Sun at mean noon, April 24th (Astron. time), at Greenwich, is given in the Naut. Alm. as 13° 1′ 53″. 2 N.; for April 25th it is 13° 21′ 26″. 2 N.; find its declination at $9^h\ 20^m$ A.M. this day, April 24th, civil time, Montreal, long. 73° 32′ 56″ W.

5. A particle P is placed within a thin parabolic tube AP, the axis Ax of the parabola being vertical: the particle is acted upon by gravity and by a force $\mu.PM$ tending from Ax, to which PM is perpendicular; show that there will be no equilibrium unless the latus rectum of the parabola be equal to $\frac{2g}{\mu}$

6. A given force P, acting parallel to the horizon, just sustains a body of given weight W on a *rough* inclined plane, the angle of which is θ: the same body will just rest without support on a plane of the same material, the inclination of which is α; determine θ.

7. Define a *couple*. Find the resultant of two couples acting in different planes.

8. A particle is placed at a centre of repulsive force which varies at any power of the distance; determine its velocity after receding to any distance from the centre, and the time of motion.

9. A hemispherical bowl (radius $= r$) is filled with water; find the total pressure on the surface.

10. Find the centre of pressure of a parallelogram immersed in a fluid, one edge of the parallelogram being in the surface.

11. Find the centre of gravity of the area of a portion of a parabola cut off by any chord.

12. Show by integration that the area of a circle (radius $= r$) is πr^2.

13. Integrate $\int e^{ax} \cos nx \, dx$; $\int \frac{dx}{1+x+x^2}$.

14. Determine the values of x which make the function $x^5 - 5x^4 + 5x^3 + 1$ a maximum or a minimum.

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SESSIONAL EXAMINATIONS, APRIL, 1860.

ASTRONOMY, MECHANICS, HYDROSTATICS.

THIRD YEAR.

Honor Examination.—SECOND DAY.

Examiner..... PROFESSOR JOHNSON.

1. Investigate the following formula for finding the latitude of a place by observations of the pole star, at any time of the day; explaining also the mode of its practical application:—

$$l = a - p\cos h + \tfrac{1}{2}\sin 1''\,(p\sin h)^2\tan a - \tfrac{1}{3}\sin^2 1''\,(p\cos h)\,(p\sin h)^2$$

where a = true altitude of star.

p = apparent polar distance expressed in seconds of arc.

h = hour angle of star.

2. Prove the formula for finding approximately the alteration produced by refraction in the time of a star's rising

$$h' - h = \frac{r}{\sqrt{\cos(l+\delta)\cos(l-\delta)}}$$

where h = hour angle when star really rises.

h' = hour angle when star appears to rise.

r = horizontal refraction.

l = latitude of place.

δ = declination of star.

3. Prove that the aberration of a fixed star = 20″. 5 × sine of earth's way.

4. The R. A. of a star being 5h. 5m. 42.03s. and its Dec. 45° 50 22″ 4 N.; find its latitude and longitude, the obliquity of the ecliptic being 23° 27′ 25.″47.

5. If T be the duration of an oscillation of a simple pendulum, whose length is l, and h be the height of the bob when the motion commences, prove that

$$T = \pi \sqrt{\frac{l}{g}} \left\{ 1 + \left(\frac{1}{2}\right)^2 \frac{h}{2l} + \left(\frac{1.3}{2.4}\right)^2 \left(\frac{h}{2l}\right)^2 + \&c. \right\}$$

6. Prove that the space described in the time t by a heavy particle falling in a medium whose resistance varies as the square of the velocity is

$$\frac{k^2}{g} \log \left\{ \frac{e^{\frac{gt}{k}} + e^{\frac{-gt}{k}}}{2} \right\} \text{ where } \frac{g}{k^2} \text{ is the coefficient of resistance.}$$

7. Find the equation of the *common catenary*, and determine the tension of the chain at any point.

8. Two equal uniform beams which are capable of revolving in a vertical plane about a point to which their lower extremities are attached, have their upper extremities connected by a string; a heavy sphere is placed between the two beams; supposing the string to contract, determine its tension when the sphere is just going to be forced upwards, the friction between the sphere and each of the beams being given.

9. A given weight is suspended from the rim of a uniform hemispherical bowl, placed on a horizontal plane; find the inclination of the axis of the bowl to the vertical when the bowl is at rest.

10. A semicircle is immersed in a fluid so that its diameter is perpendicular to the surface, and the extremity of the diameter is in the surface; find the centre of pressure.

11. Show that the pressure at any point of a mass of fluid at rest, acted on by any forces, is determined from the equation

$$dp = \rho (X\,dx + Y\,dy + Z\,dz).$$

12. A mass of homogeneous fluid in an open vessel is made to revolve uniformly about a vertical axis with the angular velocity ω; prove that if the axis of revolution be taken as axis of z, and c be the depth, below the origin, of the point where the surface of the fluid cuts the axis, the equation of the surface of the fluid is

$$\omega^2 (x^2 + y)^2 + 2g (z - c) = o.$$

Show that this is a surface generated by the revolution of a parabola about its axis.

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ENGLISH.

FIRST YEAR.

Examiner ..... Rev. Dr. Leach.

1. Explain the two sorts of Etymology.

2. Give examples of true and of false genders in English, and of a double feminine termination.

3. What is the origin of the fem. termination "ess"?

4. Account for the plural termination "es," in such words as "boxes," "churches," "judges," "princes," &c.

5. Of what is "pence" a contraction? and show that its sense is rather collective than plural?

6. How is the termination "s" accounted for in such words as "mathematics," "ethics," "politics," &c.?

7. Why may not the use of a preposition be considered as constituting a case, as in "of a father," "to a father," &c.

8. Show that the genitive form "'s" is not a contraction of "his."

9. What is the difference in origin between "the," the common article, and "the" in such expressions as "all the better," &c.?

10. Which are the true personal pronouns, and why is the usual declension of them to be considered exceptionable?

11. What is probably the correct analysis of the termination "most" in such words as "inmost," "outmost," &c.?

12. Which are the two forms of English infinitives? and explain their double origin.

13. How do you account for the double forms of the past tense in words like "ran, run"; "sang, sung," &c.?

14. Do strong verbs ever become weak, and the weak, strong; and are derived words inflected weak or strong?

15. What view is to be taken of the termination "ing" in such phrases as "rising early is good"?

16. How do you account for the prefix "y" in words like "yclept," "yclad"?

17. What is "composition," and state the conditions under which it can take place, subject to a few exceptions?

18. What is the probable origin of the "ce" in "hence," &c.?

19. "Sugar, water, and the juice of lemons forms a beverage": is "forms" allowable? and if so, why?

20. "The wages of sin is death": on what supposition may the use of the singular be defended?

21. In what two modes are cases determined; and on the supposition that cases ought to be determined by their form alone, what words would remain as the only true accusatives in English?

22. Distinguish between Etymological and Syntactic Convertibility.

23. Do adjectives ever govern cases?

24. In the comparative degree, what are the conditions that determine the preference of the form "er" or the word "more"?

25. How do you account for Reflective Neuters, and what are equivocal reflectives?

26. What peculiarity is there in the construction of possessive pronouns, like "my," "mine," &c.?

27. "It is I, John, who command you": how is the person of the verb to be determined in such cases?

28. When two or more pronouns of different persons and of the singular number, follow each other disjunctively, how is the question of concord determined?

29. Enumerate the principal events and institutions that contributed to the revival of learning in the 14th and 15th centuries.

30. Give an account of the origin of the English drama, and trace its history to the time of Shakspeare.

31. What are the characteristics of the earlier writings of Chaucer, and whence is he thought to have derived the idea of the general framework of his Canterbury Tales?

32. Mention the principal works of Sidney, Spenser, and Raleigh.

33. What does Stewart say of Bacon's Essays?

34. What is said of the scholarship of Shakspeare and Ben Johnson?

35. What is meant by Metre; what by Measures? and mention the conditions of perfect Rhymes.

36. Express in English verse,—"man walketh in a vain shadow, and disquieteth himself in vain; he heapeth up riches, and cannot tell who shall gather them."

37. Express in English verse,—

Virtus, recludens immeritis mori
Cœlum, negata tentat iter via.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

LOGIC.

SECOND YEAR.

Examiner..... REV. DR. LEACH.

1. Show that the reasoning process is similar in all subjects.

2. In the following propositions, distinguish those which express the relation of cause and effect, and those which express that of premise and conclusion: "the seed lacked moisture, therefore it sprung not up"; "the seed sprung not up, therefore it lacked moisture"; "the seed lacked moisture because it sprung not up"; "the seed sprung not up, because it lacked moisture."

3. How are singulars regarded with respect to quantity? What is the quantity of "not all are," "not any are"; and what is the difference between 'all" in its logical sense and "all" as signifying "all taken together."

4. Show what kinds of propositions are opposed as contraries, as contradictories, and as sub-contraries.

5. If one universal is true, what of its opposite universal? if one particular is true, what of its opposite universal and of its opposite particular? if one universal is false, what of its opposite universal and of its opposite particular? why cannot both particulars be false?

6. When are propositions said to be converted? Mention what is necessary to their valid conversion, and give the universal rule.

7. What kinds of proposition may be converted *simply*,—per accidens,—and by contraposition? Give examples in each kind.

8. How does the extended doctrine of distribution according to Sir W. Hamilton affect the rules of conversion?

9. Give his new classification of propositions, the denomination, and the symbolical letters that designate each class. Express, according to his scheme of notation, the following moods: UYY, Fig. I.; IYI, Fig. II.; YAY, Fig. III.

10. How is the figure of a Syllogism determined; and enumerate, in order, the valid moods in each figure?

11. Give the general and the special canons for the syllogism.

12. What are the special canons that are violated in the following moods: aei, aio, ieo, eee, ooi, ioo.

13. In conditional syllogisms what follows, if the minor affirms the antecedent; if it affirms the consequent; if it denies the antecedent; if it denies the consequent?

14. Draw out into separate syllogisms the following Sorites: avarus multa desiderat; qui multa desiderat, multis eget; qui multis eget, est miser; ergo avarus est miser.

15. What are ostensive reduction and reduction per impossibile; and give examples.

16. What kind of syllogism is the following: aut probus est aut improbus; si improbus cur ejus conversatione uteris? si probus, cur culpas.

17. Explain the Fallacies termed,—ignoratio elenchi, petitio principii, fal. accidentis, fal. compositionis, fal. divisionis.

18. St. Paul says, "Servants (slaves) be obedient to your masters," &c. This is used as an argument in defence of modern slavery. Express the argument in logical form, and designate the fallacy it involves.

19. What is the meaning of—names, concrete and abstract, connotative and non-connotative, relative and absolute.

20. What is it that constitutes between any two correlative names, the fundamentum relationis?

21. Give Mr. Mill's classification of things denoted by names.

22. Explain what you mean by "subaltern genera; cognate genera; remote and proximate genera; co-ordinate species; summum genus and infima species; proprium, accidens."

23. Give the rules for logical division and definition.

24. Distinguish between division and partition.

25. Explain the kinds of induction improperly so called.

26. What is the general axiom or principle that constitutes the ground of induction?

27. Show that invariable sequence is not synonymous with causation.

28. What may be said, generally, to be the cause of a phenomenon?

29. Explain the methods of agreement and difference, of residues and concomitant variations.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

MORAL PHILOSOPHY.

THIRD YEAR.

Examiner.....Rev. Dr. Leach.

1. Prove that there are moral truths which constitute the basis of morality, and reply to the objection against their self-evident character —the objection that in different ages and countries they have not been uniformly accepted.

2. Mention some of the general terms which express the objects of morality and, *that* which may be considered as the simplest and most general and as rendering an ultimate reason for actions.

3. Express in general terms the objects of the appetites, of the affections, of the mental desires, of the moral sentiments, and the reflex sentiments.

4. All truths include an idea and a fact; whence is each derived and in the instance of Rights, what is supplied by each; show that the connection between justice and law is inseparable.

5. Enumerate the primary and universal rights of man; show the difference between rights and obligations; how rights become realities, and why they are necessary to moral rules.

6. Explain the meaning of the terms Morality, Duty, Virtue, Vice, Sin, Crime, Prudence, Providence, Wisdom, Cunning.

7. Show the duty of the moral culture of the affections, and reply to the objection that we have not the power to direct them.

8. How does Duty become Virtue?

9. Explain the duty of Consideration and show how a good end does not justify the means and that even after deliberation men are held responsible for mistakes.

10. With regard to the duty of Obedience to Law, when is it necessary to conform to the spirit as well as the letter of the law, and when to conform to the letter of the law only.

11. Supposing an informal contract, immorally made, is it a duty, when the immoral end is answered, to perform the rest of the contract; state the reasons of your judgment.

12. What would be the consequence of defining beforehand the conditions under which violations of duty (cases of necessity) are excusable?

13. Show that Asceticism is not suited to the moral culture of man in general.

14. Can we properly refer to Conscience as an ultimate and supreme authority? state the supreme rule of human action and explain the process by which that rule is arrived at.

15. When one breaks an immoral promise, what is the duty which is then violated?

16. Justice and Equity first conceived as identical; why were they separated? Explain the principal maxims on the subject of Equity?

17. What are the exceptional cases in which a Court of Equity in England may decide differently from a Court of Law, and show that Jurisprudential Equity does not fill up the measure of Moral Equity in that it abates the rigour of the law.

18. Enumerate the Rights and the Obligations of States, and show that the Rights of States are not formed by the addition of the Rights of individuals.

19. What classification may be made of International Rights?

20. How are International Rights ascertained?

21. What do the jurists mean by an Imperfect Right (of property) in International Law, and how are cases of such rights regulated?

22. Explain what is implied in the term "Comity of Nations."

23. Give the two chief maxims of International Law in regard to jurisdiction.

24. State the objects of Mental Science.

25. Show that Mind does not consist essentially in the sensational nature, nor in the bodily organization, nor in the sum of all our thoughts, ideas or conceptions.

26. What are the three fundamental facts into which, according to Cousin, all the facts which fall under our consciousness are resolvable.

27. Mention the three main centres of nervous influence and to which of them all actions purely instinctive are to be referred.

28. Show that Sensation is not a purely passive state, and explain the distinction between internal and external sensation.

29. Give the law with regard to the relative intensity of sensation and perception; show that the former cannot properly be described as the cause of the latter, and that in perception the mind adds something of its own.

30. Give an account of the two extreme theories on the subject of perception.

31. Point out some of the distinguishing marks of mediate and immediate knowledge.

32. Show the difference betweem Memory and Imagination; state the laws of association as given by Hume, and the more general law into which they are resolvable.

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RHETORIC.

FOURTH YEAR.

Examiner,.....Rev. Dr. Leach.

1. Explain the kinds of Argument—irregular, regular; moral, demonstrative; direct, indirect; and give examples of each.

2. Explain the two kinds of Argument into which the "a posteriori" class is divided.

3. Show that Testimony is a sign, and enumerate the circumstances that serve to establish the credibility of witnesses.

4. Explain the Argument from "progressive approach."

5. What is the essential principle in the Arguments designated by the names of Induction, Experience, Analogy, Parity of Reasoning, &c.

6. Distinguish between Analogy and direct Resemblance.

7. What are the cautions to be attended to in the use of arguments from Analogy?

8. In what different logical methods may you deal with the arguments of an opponent?

9. How do you determine, generally, on what side the "onus probandi" lies; and explain the application of the principle in the cases of "existing institutions," "paradox," "Christianity"?

10. What are the three uses of "Examples"; and give an example of each.

11. Of the two classes of Arguments—those *a priori*, and those from example—which class generally takes precedence in arrangement; and what conditions determine the precedence in favour of the one class or the other?

12. Explain the two methods of Refutation.

13. In what spirit and manner ought the arguments of an opponent to be treated, be they invalid or valid?

14. What is said to be the best rule for avoiding the disadvantages of conciseness and of prolixity of style, and what are the cautions given for the use of the rule?

15. Prove that Perspicuity is not inconsistent with ornament.

16. What cautions are to be used in the use of Metaphors, and what kinds of metaphors conduce most to energy of style?

17. What is the right interpretation of the term which Whately renders "frigid," in the phrase "frigid style"?

18. Give Whately's remarks on the subject, "How the feelings are to be reached."

19. How may "good Poetry" be defined?

20. What is the important principle with respect to decoration of style which Whately supposes to be established by the passage quoted from Dr. A. Smith?

21. Compose, from the following data, a speech—say that of Xerxes to the Persian chiefs on the subject of his proposed expedition against Athens:—War and conquest the traditional policy of the Persians since the overthrow of the Medes; allusion to the glorious deeds of Cyrus, Cambyses, and Darius; he desires to emulate them; proposes to bridge the Hellespont, to take and burn Athens; objects of the war, to take vengeance for wrongs, as the burning of the temple of Sardes, &c.; the glory to be acquired; the utility of it, exaggerating the fertility of Greece; proposes rewards to the chiefs who shall appear with the best appointed troops; consults them by way of conciliating.

22. Translate the passage in Cicero de Oratore, Lib. i., cap. 16, commencing "Sed, ut solebat," to the end of the chap.

23. Translate the passage commencing "Tumque ego" to "poterit addere," Lib. i., cap. 21.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

ELEMENTARY CHEMISTRY.

FIRST YEAR.

Examiner..... J. W. Dawson, LL.D.

1. State the laws of combining proportion.

2. Distinguish absolute, specific, and atomic weight.

3. Explain specific and latent heat.

4. State the principles on which chemical notation depends, and give the formulæ of Carbonic Acid, Nitrate of Ammonia, Sulphate of Potash.

5. Explain the terms --- Element, Oxide, Perchloride, Sulphuret, Neutral, Gaseous.

6. Explain the processes for the preparation of Hydrogen.

7. State the properties of Oxygen, and the composition of water and of the atmosphere.

8. State the composition and properties of C_4H_4---the preparation and composition of coal-gas, and the structure of flame.

9. State the properties of Chlorine, name the elements grouped with it, and state the points in which they differ.

10. Explain the theoretical views as to the constitution of acids and salts, and the manner in which the compounds of Chlorine and Phosphoric Acid may be harmonized with these views.

11. Name the different kinds of Sulphuric Acid, and explain the process for the preparation of the common oil of vitriol.

12. Name the metals of the alkalies and alkaline earths, and state the distinctive characters of their oxides and the means of ascertaining these by chemical tests.

13. What is the composition of Alum, Limestone, Flint, Glauber's Salt, Bone Earth?

14. What are the elements that enter into the composition of the principal organic bodies? Give examples.

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ZOOLOGY.

SECOND YEAR.

Examiner.....J. W. DAWSON, LL.D.

1. Define organization, and state the distinction between the animal and the plant.

2. Describe the animal cell, name the principal tissues derived from it, and describe fully one of them.

3. State the structure of the eye in the *Vertebrata*, and the modifications of this structure in the *Articulata*.

4. State the chemical and vital changes involved in Respiration, and describe the organs provided for this function in *Mammalia*, *Insecta*, and *Lamellibranchiata*.

5. What is type or affinity as distinguished from analogy or adaptation? How are they harmonized in nature, and which is the more important in classification, and why?

6. Explain the division of the animal kingdom into four provinces, and state the characters assigned to each.

7. Name the classes of the *Radiata*, and characterise two of them, with examples.

8. Describe the highest class of the *Mollusca*, and give an example of each of its orders, with a statement of the points in which these differ.

9. Name the orders of the *Annulata*, and characterise one of them, with examples.

10. State the distinction between Reptiles proper and Batrachians.

11. Give the sub-classes of the Mammalia, according to Owen, and explain the characters on which they are founded.

12. State the structure and affinities of the genera *Halichondria*, *Sertularia*, *Lepralia*, *Perca*, *Clio*, and *Serpula*.

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OF

McGILL COLLEGE,

MONTREAL.

SESSIONAL EXAMINATIONS. APRIL, 1860.

BOTANY.

THIRD YEAR.

Examiner..... J. W. Dawson, LL.D.

1. Describe the vegetable cell, stating its parts, manner of growth, and modifications.

2. Describe the various kinds of vascular tissue, with their mode of formation and uses.

3. State the chemical composition of the tissues of plants and of the contents of cells, with the uses of the latter in the economy of the plant.

4. Explain the law of Phyllotaxis.

5. Describe the structure and functions of the Petiole and Leaf.

6. Describe the structure and mode of growth of the Endogenous and Exogenous stems.

7. State the distinction between definite and indefinite inflorescence, and name and describe some of the forms of each.

8. Explain the structure and functions of the stamens and pistils.

9. Describe the organs of fructification in the mosses and ferns.

10. State the gradation of groups in the Natural System, and the grounds upon which each is founded, with examples.

11. Define the terms, Prosenchyma, Sporangium, Rhizoma, Stipule, Achenium.

12. Refer the specimens exhibited to their series, class, and order; and describe the forms of their leaves and the character of their inflorescence.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

GEOLOGY AND MINERALOGY.

FOURTH YEAR AND SENIOR STUDENTS IN ENGINEERING.

Examiner..... J. W. DAWSON, LL.D.

1. Name and characterize the systems of crystallization, and mention the principal holohedral forms of one of them.

2. Explain the nature of combinations of crystalline forms, and of crystalline aggregates, and give examples.

3. Name the minerals most important as constituents of rocks, and describe one, stating its chemical composition and geological relations.

4. State the composition and mineralogical and geological relations of the principal ores of Iron, Copper, and Lead.

5. Define the terms Sedimentary, Volcanic, Plutonic, Metamorphic, as applied to rocks, and give an example of each.

6. State and explain the data for determining the relative ages of sedimentary rocks, and of dykes or unstratified masses occurring in them.

7. Name the systems of formations in their chronological order, and specify those occurring in Canada.

8. Name the genera of plants characteristic of the coal formation, and state their botanical relations to living forms.

9. Name the classes of invertebrates represented by fossil remains in the Palæozoic rocks, and give an example of each.

10. State fully the mode of occurrence and origin of Mineral veins, Coal Seams, or Beds of Rock-salt and Gypsum.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

PRACTICAL AND HONOUR COURSE OF GEOLOGY AND MINERALOGY.

FOURTH YEAR AND SENIOR STUDENTS IN ENGINEERING.

Examiner.....J. W. DAWSON, LL.D.

1. State the methods of detecting by the blowpipe the presence of Iron, Manganese, Sulphur, and Silica, in Minerals.

2. State in the order of their importance, the Physical characters employed in determining Minerals, and the manner of employing these characters.

3. The Laurentian and Huronian Systems of Canada---what are their structure and distribution, their useful minerals, and the formations in other countries chronologically parallel to them?

4. State the subdivisions of the Silurian System in Canada, with their equivalents in Great Britain, and the characteristic fossils of any of them.

5. State the subdivisions of the Carboniferous system in British America, with the genera of shells characteristic of the marine members of the system.

6. What are the principal facts to be ascertained in a geological survey, and the methods of proceeding in conducting such a survey?

7. State the methods of exploring for mineral veins and extracting their contents, with the differences between these methods and those employed in the case of minerals occurring in beds.

8. Describe the Pleistocene deposits of Lower Canada, with their subdivisions and characteristic fossils.

9. Explain the classification of the corals of the order *Zoantharia*, stating the characters of each sub-order and its geological relations, with examples.

10. State the characters and zoological and geological relations of the following genera,---*Spirifer*, *Orthoceras*, *Chonetes*, *Favosites*, *Calymene*, *Leperdita*.

11. State what you know of the specimens exhibited.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

HEBREW.

JUNIOR CLASS.

Examiner..... Rev. A. De Sola, LL.D.

1. State the difference between דגש קל and דגש חוק. Show their respective positions in words, and the rules to be observed with reference to אהחע.

2. What is מקף, and what influence has it on the accent?

3. What is to be observed of מפיק, מתג, and רפה?

4. State the rules for שוא נח and שוא נע.

5. Give the rules for קמ׳ רחב and קמ׳ חטוף.

6. What have you to say of the value of the Massoretic system of punctuation, and its general consistency.

7. Write the Definite Article, pointing out the difference between it and the Arabic form. State all the exceptions to its ordinary punctuation, and show how they are influenced by the Gutturals אהחע.

8. State the distinctive forms in Hebrew of nouns in the plural masculine, and plural feminine; construct form of plural masculine; construct form of plural feminine; absolute and construct forms of dual, and of the feminine singular.

9. Write the Relative and Demonstrative Pronouns.

10. Write the Pronominal Suffixes, singular and plural, and the following in Hebrew:—The good man, his good horse, and thy [masc.] good child. What is thy [masc.] name? Your [pl. masc.] house is large. Who is like our Queen? The good son of our beloved Queen will come to us.

11. State what you know of the general characteristics of Segholate Nouns, and give the general rule for Nouns formed of mutable and immutable vowels.

12. State the general characteristics of Regular and Irregular Verbs, and give the names of the forms (בניינים) and their characteristics.

13. Give the principal parts of the verb לבש; and write (with points) the preterite and future of this verb in the Kal form.

14. Give some examples to show the concord of the subject with its predicate.

15. Translate the following digest of Scripture narrative into Hebrew :—

Abraham begat Isaac, and Isaac begat Jacob and Esau. God loved Jacob and named him Israel. To Jacob were born twelve sons, from whom were descended all the families of the house of Israel. Jacob dwelt at first in the land of Canaan; but there was a famine in the land and he and his sons went down into Egypt. They dwelt there, and increased so that the Egyptians were afraid on their account, and they afflicted the children of Israel with hard bondage; but God raised up to them (ויקם יי לחם) a deliverer in Moses the son of Amram.

16. Translate the following anecdote of Socrates into English :—

סוקראטיס היה אומר כל ידיעתי היא שאיני יודע ויהי כאשר זקן וקרבו ימיו למות אמר צר לי מאד כי עתה הייתי מתחיל ללמד ארח חיים

חכם בעיניו סכל

וחכם בעיניו סכל:

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SESSIONAL EXAMINATIONS. APRIL, 1860.

HEBREW.

SENIOR CLASS.

Examiner ..... Rev. A. De Sola, LL.D.

1. Translate into English the first six verses of Psalm v.

2. Does the etymology of הנחילות assist us in obtaining an idea of the nature of the instrument, and state the opinion of those who regard it as נחיל של דבורים.

3. State briefly some of the characteristics of the poetry of the Scriptures, and some of the advantages it derives from qualities inherent in the Hebrew language itself.

4. Give examples (from the Psalms) of Parallelism, perfect and imperfect.

5. Write the principal parts of the verb הלך in Ps. i. 1.

6. What is to be observed of the noun חטאים in the same verse?

7. Give examples of Prothesis, Epenthesis, and Paragoge.

8. Give examples of Aphæresis, Syncope, and Apocope.

9. State in what modern Hebrew poetry mainly differs from the ancient.

10. Explain the terms סוגר, דלת, בית, יחד.

11. Point and scan the following, and say whether the quatrain exhibits pure Iambics, as in Latin verse :—

שמע בני אמת קנה
ובה בנה לך דביר
אזי בכל בני חלוף
רדה ונם הוה נביר

12. Analyze the word ויענני, and give the rules for ו׳ ההפוך and ו׳ ההיבור.

13. Analyze v. 4, Ps. ii., and say what is to be particularly observed of ישחק and למו.

14. Give the Chaldaic terminations of מלך, and write the 2d person masc. in its Hebrew and Chaldaic forms.

15. Translate into Hebrew :—

One day, on Esau's return from the field, faint and worn out with the fatigues of the chase, he found his brother making pottage of lentiles. "Feed me, I pray thee, with that same red pottage," said Esau, "for I am faint." "Sell me this day thy birth-right," answered Jacob. Then Esau said, "Behold I am at the point of death; and what profit shall this birth-right do to me?" The birth-right was therefore sold for a mess of pottage; and Jacob, in this manner, became possessed of the right to succeed his father as patriarch, or prince and priest of the tribe, with all the privileges attached to that high station, and all the mysterious promises made to the principal branch of the family.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

FRENCH.

SECOND YEAR.

Examiner..... L. G. FRONTEAU, B. A.

Translate into English.

Auguste; Prends un siège, Cinna, prends; et, sur toute chose,
Observe exactement la loi que je t'impose;
Prête, sans me troubler, l'oreille à mes discours;
D'aucun mot, d'aucun cri, n'en interromps le cours;
Tiens ta langue captive; et si ce grand silence
A ton émotion fait quelque violence,
Tu pourras me répondre, après, tout à loisir.

CORNEILLE.

1. *Prends* repeated twice, explain why this is thus repeated.

2. *Que je t'impose:* what is *que?* When is *que* a relative pronoun? When is it an adverb?

3. *Prête l'oreille:* Give the name of this figure?

4. *N'en interromps le cours:* What is the force of *cours?*

5. What part of the verb is *Tiens:* Give the first person plural subjunctive.

6. Why *ton* masculine?

7. *Pourras.* Why is the verb *pouvoir* irregular?

8. Give the difference between *plus* and *mieux.*

9. What is the difference between au *travers* et à *travers?*

10. Give the general rule of the Past Participle. When does it agree with the noun or not.

Translate into French:

Flattery can hurt nobody, but him whom it pleases. If we do not forgive others, we must not expect that God will forgive us. Remember, O my son, the counsel I give thee: it will profit thee much: obey the law of God: obey the king and all the subordinate magistrates, resist thy passions, forgive thy enemies, hurt nobody, and never yield to the allurements of pleasure. He that resists his evil inclinations, deserves greater praise than he who conquers kingdoms and cannot command his passions.

COMPOSITION FRANCAISE.

The subject will be given on the Examination day.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

FRENCH.

FOURTH YEAR.

Examiner..... L. G. FRONTEAU, B. A.

Translate into English:

Grâce aux Dieux, mon malheur passe mon espérance !
Oui, je te loue, ô ciel, de ta persévérance :
Appliqué sans relâche au soin de me punir,
Au comble des douleurs, tu m'as fait parvenir :
Ta haine a pris plaisir à former ma misère ;
J'étais né pour servir d'exemple à ta colère,
Pour être du malheur un modèle accompli :
He bien, je meurs content, et mon sort est rempli.
Où sont ces deux amants ? pour couronner ma joie,
Dans leur sang, dans le mien, il faut que je me noie ;
L'un et l'autre en mourant, je les veux regarder :
Réunissons trois cœurs qui n'ont pu s'accorder.

RACINE.

1. Why *Grâce aux Dieux !* What is the figure employed here ? Give the reason why *son malheur passe son espérance ?*

2. Show the force of *au comble des douleurs ?*

3. Give the reason of it.

4. *Je meurs content :* explain the nature of the expression.

5. Explain the force of the Verb *couronner.*

6. *Il faut que je me noie :* show the beauty of this expression.

7. Give the names of the principal "*figures de Pensée.*"

8. When is *tout* an adjective, when is it an adverb ?

Translate into French:

POETUS AND ARRIA.

In the reign of Claudius, the Roman Emperor, Arria, the wife of Cecinna Poetus, was an illustrious pattern of magnanimity and conjugal affection.

It happened that her husband and her son were both, at the same time, attacked with a dangerous illness. The son died. He was a youth endowed with every quality of mind and person which could endear him to his parents. His mother's heart was torn with the anguish of grief: yet she resolved to conceal the distressing event from her husband. She prepared and conducted his funeral so privately, that Poetus did not know of his death. Whenever she came into her husband's bed-chamber, she pretended her son was better, and as often as he enquired after his health, would answer, that he had rested well, or had eaten with appetite. When she found that she could not longer retain her grief, but her tears were gushing out, she would leave the room, and having given vent to her passion, return again with dry eyes and a serene countenance, as if she had left her sorrow behind her at the door of the chamber.

COMPOSITION FRANCAISE.

The subject will be given on the Examination day.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

GERMAN GRAMMATICAL QUESTIONS.

JUNIOR CLASS.

Examiner.....PROFESSOR C. F. A. MARKGRAF.

1. What is the declension of the definite Article in the four cases of the plural, *a.* when substituted for diejenigen, and *b.* when substituted for welche ?

2. When do you translate the pronoun "that" with „dieſer", and when with „derjenige" ?

3. Change the conjunctive Pronouns mein, dein, ſein, unſer, euer, ihr, into absolute, giving the nominative singular of both forms for the masculine and neuter genders.

4. How many declensions of Nouns are there in German, and what is the characteristic termination of each declension in the genitive singular ?

Decline Baum and Menſch in the 4 cases sing. with the definite article.

5. What is the declension of Adjectives in all the cases singular for the three genders,

a, when not preceded by any determinative word ;

b. when preceded by the definite article or a word having the same termination ;

c. when preceded by ein, kein, or a possessive pronoun ?

6. What Verbs do not take the augment „ge" in the past

participle ?

7. In what instances is the separable Particle not detached from its verb ?

8. Give the Comparative and Superlative of ſchlecht, hoch, alt, dankbar, jung, groß.

9. Give the past Participle of the verbs finden, geben, thun, kennen, gehen, ſchreiben, ſprechen, nehmen.

10. What Verbs do not admit the particle „zu" before the infinitive joined to them ?

TRANSLATE INTO GERMAN :

Does this merchant sell good cloth ?

He sells much of it, but I cannot buy any, I have but little money.

How many ships have the Spaniards ?

They have only a few, but the French have more of them, and the English have the most.

Have your brothers had the good wooden chairs of the joiners and the large iron nails of the carpenters ?

What letters do you receive from your friend ?

I receive long letters from him.

Do the sons of the captain read the first or the second volume of your work ?

They read both.

What day of the month is it ? — It is the ninth.

How much more paper do you want ?

I want no more, I have enough of it.

When must I come to your house, in order to see the Italian ?

You can come this evening at half past seven.

I do not know German yet, but I intend to learn it.

My cousin has had no coat mended, but he has had one made.

TRANSLATE INTO ENGLISH :

Ein Araber hatte ſich in der Wüſte verirrt, und war in Gefahr, vor Hunger und Durſt zu ſterben. Nach langem Umherirren fand er eine von den Ciſternen oder Waſſergruben, aus welchen die Pilger ihre Kameele tränken, und einen klei-

nen, ledernen Sack, der auf dem Sande lag. „Gott sei gelobt!“ sprach er, als er ihn aufhob und befühlte; „das sind gewiß Datteln oder Nüsse; wie will ich mich an ihnen erquicken und laben!“ In dieser süßen Hoffnung öffnete er schnell den Sack, sah, was er enthielt, und rief dann ganz traurig aus: „Ach, es sind nur Perlen!“

(Schubart).

Hast Du das Schloß gesehen,
Das hohe Schloß am Meer?
Golden und rosig wehen
Die Wolken drüber her.
Es möchte sich nieder neigen
In spiegelklare Fluth,
Es möchte streben und steigen
In der Abendwolken Gluth.

(Fragment from L. Uhland's das Schloß am Meere.)

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SESSIONAL EXAMINATIONS, APRIL, 1860.

GERMAN GRAMMATICAL QUESTIONS.

SENIOR CLASS.

Examiner, ... PROFESSOR C. F. A. MARKGRAF.

1. What Conjunctions do not throw the verb of the subject to the end of the sentence ?

2. What is the termination of Feminine Nouns in the nominative plural, and do they soften the radical vowel ? Add a few Examples.

3. Mention the instances, where the Subject is placed after its verb.

4. How are Names of Persons declined in German, and which of them take ens in the genitive singular ?

5. Give the Imperfect and Past Participle of the following Verbs:

Laufen, ſtoßen, werfen, geſchehen, anbieten, frieren, ſtehen, gewinnen, vergießen, ſchaffen, ſitzen, heißen, nennen, helfen, gleichen, leiden, weichen, fliehen.

6. Give the nominative plural of Apfel, Zeit, Schlag, Auge, Jahr, Stunde, Tag, Thaler, Weltweiſe, Kleid, Welt, Schweſter, Stadt, Nachbarinn, Frau.

7. Mention the cases governed by the following Prepositions: auf, nach, vor, an, zu, ſeit, aus, bei, unweit, neben, unter, ungeachtet, für, um willen, gegen, wegen, außerhalb, über.

8. Of what meanings is von denen susceptible? — Give Examples.

9. Is the present Participle in German ever used substantively as in English?

10. How do you explain the following construction:

Wenn ich Ihren Bruder werde gesprochen haben, so werde ich abreisen.

Uebersetzen Sie ins Deutsche:

To whom were you speaking, when I met you in the street?

Has your brother-in-law succeeded in finding a house that suits him?

I have passed by the side of my uncle, but he has not seen me, he has sore eyes.

In order to be loved, one must do good to those who have done us harm.

Have you forgotten to inquire after the people to whom I have sent money?

When I was at Berlin, I spent my time in studying, and riding on horseback.

How long is it since your friend set out for Germany?

It is more than three months since he set out.

How much has this young nobleman a month to live upon?

He has not much, for he has squandered all his fortune.

Do your scholars like to read better than to learn by heart?

I am glad to see that your brother looks so well.

What has become of the man, whose house has been burnt?

I shall take a walk tomorrow, if it is fine weather.

Why do you approach the fire? — Because my hands and feet are cold.

Do you recollect this old man?

My sister has parted with her cook (fem.) because she served her no more well.

I shall return you the books which you have lent me,

as soon as I have read them.

It is more useful to speak than to write, but in order to learn a foreign language, one must do both.

Ueberſetzen Sie ins Engliſche:

Am Fuße der juliſchen Alpen liegt in Krain der berühmte Cirknitzer See, von jeher das Wunder und Räthſel der Gegend. Oeſtlich von Adelsberg, da wo die Geheimniſſe der Unterwelt in hundert Gewölben der Kalkfelſen verſchloſſen ſind, breitet ſich der wunderſchöne See von Cirknitz aus, wie ein Spiegel von drei Quadratmeilen. Aus ihm ragen fünf Inſeln hervor, und eine derſelben trägt ſelbſt das Dörfchen Ottok. Mehrere Flüßchen fallen hinein. Er iſt ſehr reich an Fiſchen und Waſſervögeln, und die ganze Thalgegend umher iſt romantiſch ſchön. Neun Dörfer, zwanzig Kirchen und zwei Schlöſſer reihen ſich um den See.

(Bruchſtück aus „der Cirknitzer See von Guts-Muths.")

Und der König winkt wieder,
Da ſpeit das doppelt geöffnete Haus
Zwei Leoparden auf einmal aus.
Die ſtürzen mit muthiger Kampfbegier
Auf das Tigerthier;
Das packt ſie mit ſeinen grimmigen Tatzen,
Und der Leu mit Gebrüll
Richtet ſich auf, da wird's ſtill;
Und herum im Kreis,
Von Mordſucht heiß,
Lagern ſich die gräulichen Katzen.

(Bruchſtück aus Schillers' „Handſchuh".)

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SESSIONAL EXAMINATIONS. APRIL 1860.

ENGINEERING.

Examiner ..... PROF. M. J. HAMILTON.

1. What instruments are generally made use of in ordinary surveying operations.

2. Give a detailed description of the mode of conducting a property or township survey?

3. Give an example of the best form of field book for such survey?

4. Describe the construction and adjustments of the Transit Theodolite?

5. What are the objections to the box sextant as a surveying instrument?

6. Two sides of a triangle are 20·46 and 31·64 chains (100 feet) and the included angle is 57° 38′. Required the remaining side and angles and also the area in acres, roods, and perches.

7. The three sides of a triangle are 27·50, 34·25, and 37·83 chains (66 feet). Required the area in square yards and also in acres, roods, and perches.

8. How must the limb and vernier of an instrument be divided so as to read to 20 seconds.

9. What precautions must necessarily be taken in order to insure some degree of accuracy when the compass is used as a surveying instrument.

10. Balance and plot the following field notes:

BEARINGS.				DISTANCES.
N.	42·30	W.	.....	14·20 chains.
N.	20·15	W.	.....	10·55 "
N.	55·00	E.	.....	14·80 "
S.	72·30	E.	.....	20·00 "
S.	14·30	E.	.....	15·03 "
S.	69·30	W.	.....	22·96 "

11. Required the area in the last example by Double Longitudes: Gunter's chain being used.

12. How are inaccessible distances measured by the chain alone and by the chain and an angular instrument.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

ENGINEERING.

Examiner ..... PROF. M. J. HAMILTON.

1. Define the terms profile, datum and bench mark.

2. Describe the construction and adjustments of the Y Level.

3. A railway is to be built from A to B. State in detail the preliminary operations necessary in order to determine its probable cost and prepare for its actual construction.

4. Enter and reduce the following observations taken 100 feet apart according to the English and American systems the B M being 100 feet above Datum.

1st setting up of instrument		3·40,	4·70,	4·91,	5·60,	8·76
2nd	"	"	7·20,	11·90,	6·27,	7·60,	5·33
3rd	"	"	9·50,	11·50,	10·94,	11·40,	6·89

5. If the height of grade at the first station in the last question be 100 feet and at the last station 89 feet above Datum, the slopes $1\frac{1}{2}$ to 1 and the width at formation level 20 feet. Required the content in cubic yards by mean heights.

6. Required the inclination of grade in question (5) per 100 feet and per mile.

7. Required the content of the cutting in question (5) by the prismoidal formula.

8. The cross wires of a level standing 4·67 feet above a point A, coincides with the top of a spire 3 miles distant. Required the difference of level between the point A and the top of the spire—curvature and refraction being allowed for.

9. State under what circumstances it becomes necessary to take cross sections and give a convenient form for the field book.

10. The ground at station A has an even incline of 1 in 10 in cross section, the depth of cutting at the centre stake is 6 feet, the width at formation level 18 feet and the slopes $1\frac{1}{2}$ to 1. Required the distance of the side stakes from the centre.

11. The angle included between two tangents is 120° 37′ and the radius of the curve 5000 feet. Find the distance of the intersection of the tangents from the point of curve.

12. Required the number of chords (100 feet each) in the above curve and also the deflection angle for each chord.

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SESSIONAL EXAMINATIONS. APRIL, 1860.

ENGINEERING.

Examiner ..... PROF. M. J. HAMILTON.

1. Give a sketch and description of the methods of sinking the working shafts of a tunnel.

2. The diameter of the shaft of a tunnel is 9 feet clear and the brickwork is 10½ inches thick. Required the content in cubic yards per yard down.

3. How are the levels *transferred* from the surface to the workings.

4. The span of a stone bridge is 50 feet and the versine is 9 feet. The arch is 2 feet thick at the crown and 3 feet at the springing. Required the pressure per square inch at the crown, the weight of a cubic foot of the material being 160 lbs.

5. If the abutment of the bridge in question (4) be 15 feet high and 12 feet thick and have a specific gravity equal to that of the arch. Find its modulus of stability.

6. The clear span of a truss bridge built upon Howe's plan is 150 feet, the distance from centre to centre of the chords 19′ 6″, the weight per lineal foot including that of the truss and load 3000 lbs., the resisting area of the upper chords 400 square inches and of the lower chords 300 square inches. Required the pressure per square inch on the upper and lower chords.

7. What must be the sectional area of the end braces in question (6) if the safe load be taken at 1000 lbs. per square inch.

8. A truss bridge on the Burr principle has the same dimensions and weight as that in question (6). Required the sectional area of the end ties between and their length above and below the chords.

9. The span of a suspension bridge is 600 feet, deflection of cables 44 feet and the permanent load 700 tons. Required the solid section of the cables, the safe load per square inch being 8 tons.

10. Required the length of the cables, in last question, between the points of support.

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McGILL COLLEGE,

MONTREAL.

SESSIONAL EXAMINATIONS. APRIL, 1860.

ENGINEERING.

Examiner..... PROF. M. J. HAMILTON.

1. Give a sketch and description of the best method of forming embankments where the ground slopes in cross section.

2. Give the approximate method of laying out half widths.

3. Under what circumstances may it become judicious to employ retaining walls in road and railway construction.

4. The cost of maintenance of American Railways is about 150 per cent. more than that required to maintain the same number of miles of English Railways. To what causes may this difference be attributed.

5. Describe and illustrate by sketch the best mode of constructing paved and macadamized roads.

6. Show by calculation that railways are more affected by steep gradients than macadamised roads.

7. A vertical wall 30 feet high sustains a pressure equal to 2000 lbs. per foot of its length acting at an angle to the vertical equal to 37° 54′ and intersecting the axis of the wall at the top. Find the thickness of the wall, its modulus of stability being 1·8′, and the weight of a cubic foot of the material 150 lbs.

8. Show that the centre of pressure of earthworks coincides with the centre of pressure of water.

9. A vertical wall 20 feet high sustains the pressure of earth on a level with the top. The specific gravity of the wall is 2·5, that of the earth 1·6, and its natural slope 54°. Required its thickness when the line of pressure intersects the foundations at a point whose distance from the vertical through the centre of gravity of the wall is equal to $\frac{1}{3}$ of the distance of the same vertical from the outer face of the wall.

10. The front of the wall in last question batters 1 in 20 and the back remains vertical. Required its thickness.

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