CALENDAR

AND

EXAMINATION PAPERS

OF

Dalhousie College and University,

HALIFAX, NOVA SCOTIA.

SESSION 1869-70.

CONTENTS.

University Calendar.

1869-70.

1869.
Oct. 22. Fr. Meeting of Board of Governors.
27. W. Opening of Winter Session. Addresses by Principal Ross and Prof. Lyall, at 11 o'clock, A. M.
28. Th. Matriculation Examination. Examination for Scholarships.
29. Fr. Supplementary Examinations.
Nov. 1. Mo. Matriculation and Registration. Lectures begin.
2. Tu. Meeting of Senate, 1 P. M.
9. Tu. College opened, 1863.
10. W. Final Matriculation and Supplementary Examinations.
Dec. 7. Tu. Meeting of Senate, 1 P. M.
24. Fr. Christmas Vacation begins.
25. Sa. Christmas Day.
1870.
Jan. 5. W. College re-opens.
11. Tu. Meeting of Senate, 1 P. M.
16. Su. College established, 1821.
28. Fr. Meeting of Board of Governors.
Feb. 1. Tu. Meeting of Senate, 1 P. M.
March 1. Tu. Meeting of Senate, 1 P. M.
2. W. Ash Wednesday. *Holiday.*
16. W. Essays for the *Sir Wm. Young Prize,* and *Grant Prize* to be given in.
April 5. Tu. Meeting of Senate, 1 P. M.
8. Fr. Lectures close.
15. W. Examinations in Latin and in Roman History.
14. Th. Examinations in Greek.
15. Fr. Good Friday. *Holiday.*
18. Mo. Easter Day.
Examinations in Mathematics.
19. Tu.   "   Natural Philosophy and Rhetoric.
20. W.   "   Chemistry.
21. Th.   "   Logic, Metaphysics, History, French.
22. Fr. Meeting of Board of Governors.
Examinations in Ethics and German.
25. Mo. Meeting of Senate, 10 A. M.
26. Tu. Results of Examinations declared.
27. W. Meeting of Convocation at 11 o'clock, A. M. Winter Session ends.
May 2. Mo. Meeting of Senate. Summer Session opens.
Inaugural Address in Medical Faculty at 11 o'clock, A. M.
3. Tu. Lectures begin in Faculty of Arts.
Lectures begin in Faculty of Medicine.
23. Mo. Foundation Stone of College Building laid in 1828.
24. Tu. Queen's Birthday. *Holiday.*
June 7. Tu. Meeting of Senate, 1 P. M.
20. Mo. Accession of Queen Victoria.
21. Tu. Halifax settled, 1749. *Holiday.*
24. Fr. Meeting of Board of Governors.
Lectures close in Faculty of Arts.
27. Mo. Examinations in Arts.
28. Tu. Examinations continued.
29. W. Summer Session of Arts Faculty ends.
July 1. Fr. Dominion Day. *Holiday.*
29. Fr. Summer Session of Medical Faculty ends.

BOARD OF GOVERNORS.

Hon. Sir William Young, Knight, Chief Justice of Nova Scotia, *Chairman.*

Hon. Charles Tupper, C. B., M. P.

Hon. J. W. Ritchie, Senator.

Hon. S. L. Shannon.

Hon. Joseph Howe, M. P., President of Privy Council.

Rev. George M. Grant, M. A.

James F. Avery, M. D.

Charles Robson, Esq.

Alexander Forrest, M. D.

George Thomson, Esq., *Secretary and Treasurer.*

SENATE OF THE UNIVERSITY.

Very Rev. James Ross, D. D., *Principal.*

Rev. William Lyall, LL. D.

Charles Macdonald, M. A., *Secretary of Senate.*

John Johnson, M. A.

George Lawson, Ph. D., LL. D.

James DeMill, M. A.

FACULTY OF ARTS.

VERY REV. PRINCIPAL ROSS, D. D.,
Professor of Ethics and Political Economy.

REV. WILLIAM LYALL, LL. D.,
Professor of Psychology and Metaphysics.

CHARLES MACDONALD, M. A.,
Professor of Mathematics.

JOHN JOHNSON, M. A.,
Professor of Classics.

GEORGE LAWSON, Ph. D., LL. D.,
Professor of Chemistry and Mineralogy.

JAMES DEMILL, M. A.,
Professor of History and Rhetoric.

Tutor in Modern Languages.

JAMES LIECHTI, Esq.

FACULTY OF MEDICINE.

VERY REV. JAMES ROSS, D. D., *Principal*, (*ex officio*),
Matriculation Examiner.

WILLIAM J. ALMON, M. D., *President*.

ALEXANDER P. REID, M. D., *Dean*.

WILLIAM J. ALMON, M. D., and
ALEXANDER G. HATTIE, M. D.,
Lecturers on Obstetrics.

PROF. GEORGE LAWSON, Ph. D., LL. D.,
Lecturer on Chemistry.

ALEXANDER P. REID, M. D. L. R C. S. Edin,
Lecturer on Institutes of Medicine.

EDWARD FARRELL, M. D.,
Lecturer on Anatomy.

ALFRED H. WOODILL, M. D.,
Lecturer on Materia Medica.

JAMES D. ROSS, M. D.,
Demonstrator of Anatomy.

THOMAS TRENAMAN, M. D.,
Assistant Demonstrator.

THOMAS R. ALMON, M. D.,
Prosector to Chair of Anatomy.

Janitor of the College—JOHN WILSON.

Faculty of Arts.

I.—SESSIONS

In each Academic Year there are two Sessions:—the first, a Winter Session; and the second a Summer Session.

The Winter Session for 1869-70 will commence on Wednesday, October 27th, 1869, and end on Wednesday, April 27th, 1870.

The Summer Session will commence on Monday, May 2nd, 1870, and end on Wednesday, June 29th, 1870.

II.—ADMISSION OF STUDENTS

Applicants for admission will present themselves at the College on the opening day of the Winter Session, at 3 P. M. Students may enter, either

1st, as *Undergraduates*, with the intention of applying for the Degree of B. A. at the end of the course; or,

2nd, as *General Students*.

Students entering as Undergraduates of the First Year are required to pass the Matriculation Examination at the opening of the Winter Session, and to take the classes prescribed for the four years' course.

Students may also enter as Undergraduates of the Second Year, and take the three years' course by complying with the conditions specified under § IV.

General Students are not required to pass any preliminary examination, and may attend any classes they choose.

No person can be admitted as an Undergraduate after ten days from the opening of the Session, without the special permission of the Senate. General Students will be admitted at any time during the Session.

Undergraduates from other Universities will be admitted to similar standing in this University, on producing satisfactory certificates, if on examination they be found qualified to enter the classes proper to their year.

{ III.—MATRICULATION EXAMINATION.

FOR THE FIRST YEAR.

The subjects of examination for entrance into the First Year, are :—

I. In Classics.

Latin Grammar, Greek Grammar, one easy Latin, and one easy Greek Author.

The following Authors are recommended :

Latin.

Cæsar, one book ; Virgil, one book ; Cicero, two Orations ; Horace, one book of Odes.

Greek.

Xenophon, one book ; Homer, one book ; Lucian's Select Dialogues ; New Testament, one Gospel.

II. In Mathematics.

Arithmetic ; Euclid's Elements, Book I.; Algebra to the end of Division.

III. In English.

Grammar ; History ; Geography ; Composition.

FOR THE SECOND YEAR.

In order to enter as an Undergraduate of the Second Year, a Student must pass an examination,—

1. In the *Classics* of the first year as specified in § XII. or their equivalents.

2. In the *Mathematics* of the first year as specified in § XII. or their equivalents.

3. In *English Grammar, English History, Geography and Composition.*

{ IV.—COURSE OF STUDY.

The Undergraduate course extends over, either

1. Four Winter Sessions, or

2. Two Winter and Summer Sessions of two Academic years, and an additional Winter Session.

In order to enter upon the latter course, Students must be able to pass the Entrance Examination of the second year, and must take the classes prescribed by the Senate in the Summer Session.

I. WINTER SESSION.

FIRST YEAR.

Classics, Mathematics, Rhetoric.

SECOND YEAR.

Classics, Mathematics, Chemistry, Logic and Psychology.

THIRD YEAR.

Classics, Metaphysics, Modern Languages, Natural Philosophy, Chemistry. Mathematics and Practical Chemistry *optional.*

FOURTH YEAR.

Ethics and Political Economy, History, Modern Languages, Natural Philosophy (Experimental Physics), and either Classics or Mathematics.

In Modern Languages, Undergraduates may select either French or German as part of their course, but they must take the same language in both years.

II. SUMMER SESSION.

Classes will be opened for instruction in the following subjects :

Classics.
Astronomy.
Logic.
Pneumatics.
Botany.
English Literature.
Modern Languages.

{ V.—FEES.

The Fee to each Professor, whose class or classes a Student enters, is *six dollars* for the Winter Session, and *four dollars* for the Summer Session, or *eight dollars* for both. Any Undergraduate who has paid fees twice, either to the Professor of Classics or to the Professor of Mathematics, may attend the classes of said Professor during the remainder of his Undergraduate course without paying an additional fee.

General Students pay a fee for every class they attend. (This rule does not apply to those General Students who entered previous to the Winter Session of 1868–9.)

Experimental Chemistry is an optional class, the fee for which is *six dollars.*

In addition to Class Fees, there is a Matriculation Fee of *two dollars,* payable by Undergraduates. General Students pay an annual Registration Fee of *one dollar.*

Both Undergraduates and General Students are required, at the beginning of each session to pay an annual fee of *one dollar,* which entitles to the use of the Library.

Matriculation or Registration tickets and Class tickets must be taken out on the first day of Lectures, as no Student is allowed to enter a Class without them.

The fees of Undergraduates who take the complete course in the University are as follows :—

§ VI.—GRADUATION IN ARTS.

DEGREE OF B. A.

The Degree of B. A. may be obtained by attending the prescribed courses of Lectures, extending over four Winter Sessions, or three Winter and two Summer Sessions, and by passing the following examinations, the Candidate maintaining throughout the period a good moral character:—

IN THE FOUR YEARS' COURSE,

1. Matriculation Examination at entrance.

2. Examination at the close of the first session, in Classics, Mathematics, Logic and Psychology, and Chemistry.

3. Examination at the close of the second session in Classics, Mathematics, Logic and Psychology, and Chemistry.

4. Examination at the close of the third session, in Classics, Natural Philosophy, Modern Languages, Metaphysics and Chemistry.

5. Final Examination for Degree, at the close of the fourth session or subsequently, in Modern Languages, Ethics, Political Economy, History, Natural Philosophy, and either Classics or Mathematics, at the option of the Candidate.

IN THE THREE YEARS' COURSE,

The Examinations specified above, except No. 2, and the Examinations at the close of each Summer Session in the subjects of the Session.

In no case shall a Student be entitled to a Degree who has not passed in every subject of the course.

The Fee for Diploma is *five dollars*, payable before the Final Examination.

DEGREE OF M. A.

Bachelors of Arts of at least three years' standing, maintaining meanwhile a good reputation, shall be entitled to the Degree of M. A., on producing an approved Thesis on a literary, scientific, or professional subject.

Fee for Diploma, *twenty dollars*.

§ VII.—REGULATIONS FOR EXAMINATIONS.

1. If an Undergraduate absent himself from any University Examination, except for such cause as may be held good by the Senate, he will lose his year.

2. If an Undergraduate fail to pass in any Examination, he will be allowed a Supplementary Examination on the first Friday of the following Winter Session, on giving notice to the Secretary of the Senate.

3. Failure in more than two subjects will involve the loss of the year. N. B.—In the application of this rule, Classics and Mathematics will each be reckoned as two subjects.

4. In all cases where a Student presents himself for Supplementary Examination, except on the day mentioned in Rule 2nd, he will be required to pay a fine of *two dollars*.

5. Students are forbidden to bring any books or manuscripts into the Examination Hall, unless by the direction of the Examiner, or to give or receive assistance at the Examinations. If a Student violate this rule, he will lose his Sessional Examination, and it shall be at the discretion of the Senate whether he be allowed a Supplementary Examination.

6. Students who pass the Examination in the several subjects of their respective years, are arranged in three classes, according to the merit of their answers in these subjects.

7. A position in the First or Second Class will be considered honorable.

§ VIII.—SCHOLARSHIPS.

1. HALIFAX SCHOOLS.

A scholarship entitling to free attendance on all the classes of the Undergraduate course, as long as the holder of it obtains a Certificate of Merit at the Sessional Examinations, is offered by the Professors for competition this year to the Pupils from the Halifax Schools; the competition to take place at the Matriculation Examination.

Candidates must intimate to the Secretary of the Senate their intention of competing, on the opening day of the Session.

2. NEW GLASGOW ACADEMY.

A Scholarship of equal value, and to be held under the same conditions, is offered this year for competition to Pupils attending the New Glasgow Academy; the award to be made after examination by the Principal of that Academy.

These scholarships can be competed for only by Pupils who have attended the schools from which they come, for a period of not less than one year previous to the competition. Candidates from the Halifax Schools must bring certificates of attendance from the Principals of their Schools, which must be presented at the Matriculation Examination.

3. OPEN SCHOLARSHIP.

A Scholarship of equal value, and to be held under the same conditions, will be offered *annually* for competition to all Undergraduates entering the first year.

In all cases successful competitors must be able to pass creditably the Matriculation Examination of the College.

Should the Principal of an Academy to which a Scholarship

has been assigned decline to examine, an Examiner will be appointed by the Senate of Dalhousie College. No Student can hold more than one Scholarship during the Session.

IX.—PRIZES AND CERTIFICATES OF MERIT.

THE GRANT PRIZE.

A Prize of $20 is offered by the REV. G. M. GRANT, M. A. for the best translation of Lucretius' "De Rerum Natura."

Competition is open to all Students of the years 1868-9, and 1869-70.

The Essays are to be sent in not later than 16th March 1871, each signed with a motto, and accompanied by a sealed envelope containing the name of the writer, and with the motto upon it.

THE SIR WILLIAM YOUNG PRIZES.

The following Prizes are offered by the HON. SIR WILLIAM YOUNG, KNT., Chief Justice of Nova Scotia :—

1. A Prize of $20 for the best Essay on "The Relations of Capital and Labour."

The Essay to be given in to the Principal, with an accompanying sealed letter containing the name of the competitor, (each bearing a motto), not later than 16th March, 1870.

Open for competition to all Students in actual attendance during the session in the Faculty of Arts.

2. A Prize of $20 in Elocution, open for competition to all Students of the first and second years.

NORTH BRITISH SOCIETY'S BURSARY.

A Bursary, of the annual value of $60, has been founded in connexion with Dalhousie College, by the North British Society of Halifax, to be competed for at the Sessional Examinations of the Second Year's course, and held during the Third and Fourth Years of the Undergraduate's course. Candidates must be Undergraduates who have completed two years of the Curriculum, and must be eligible at the proper age to be Members of the North British Society. The next competition will take place in April, 1870, at the Sessional Examinations.

CERTIFICATES OF MERIT.

Certificates of Merit of the First and Second Rank will be given to the Students who have obtained a first or second class standing in the aggregate of the branches of study proper to their year. N. B.—In the application of this rule two Modern Languages will be reckoned as one subject.

In publishing the names of the Students of the First and Second Years who obtain Prizes and Certificates of Merit, mention will be made of the Schools in which they received their preliminary education.

X.—ATTENDANCE AND CONDUCT.

1. All Undergraduates and General Students attending more classes than one, are required to provide themselves with caps and gowns, and wear them in going to and from the College. Gowns are to be worn at Lectures, and at all meetings of the University.

2. Attendance upon all the classes of the year, except those announced as optional, shall be imperative on all Undergraduates.

3. A Class Book will be kept for each Professor, in which the presence or absence of Students will be carefully noted.

4. Professors will mark the presence or absence of Students immediately before commencing the exercises of the class, and will note as absent those who come thereafter, unless satisfactory reasons be assigned.

5. Absence or tardiness without sufficient excuse, and inattention or disorder in the Class Room, if persisted in after due admonition by the Professor, or the discipline proper to the class, will be reported to the Senate.

6. The amount of absence or tardiness which shall disqualify for the keeping of a Session will be determined by the Senate.

7. Injuries to the building or furniture will be repaired at the expense of the party by whom they have been caused, and such other penalty will be imposed as the Senate may think proper.

8. While in the College, and going to it or from it, Students must conduct themselves in an orderly manner. Any Professor observing any improper conduct in a Student will admonish him, and if necessary report to the Principal.

9. When a Student is brought before the Senate and convicted of a violation of any of these rules, the Senate may reprimand privately or in the presence of the Students, or report to the parents or guardians, or disqualify for competing for Prizes or Certificate of Merit, or report to the Governors for suspension or expulsion.

10. Students not residing with parents or guardians must report to the Principal their places of residence within one week after their entering College, and the Principal may disallow such residence if he see good cause. Any change of residence must also be reported.

11. It is expected that every Student will attend divine service on Sunday.

XI.—THE LIBRARY.

Through the liberality of a number of the friends of the College, a library has been formed, which consists of a careful selection of the most useful works in each department of study, embraced in the University course. There are likewise a few works in general literature. The library embraces in all upwards of 1100 columns. All students are entitled to the use of the Library on payment of the annual fee of one dollar.

§ XII.—COURSE OF STUDIES. WINTER SESSION.

CLASSICS.

Professor....JOHN JOHNSON, M. A.

FIRST YEAR.

LATIN.—*Cicero, De Amicitia.*—Virgil, *Æneid, Book VI.*
GREEK.—Selections from Lucian's Dialogues.
LATIN COMPOSITION.—*Principia Latina, Part IV.*
HISTORY.—*History of Greece* (*Smith's*).

SECOND YEAR.

LATIN.—Livy, *Book I.*—Horace, *Selected Odes.*
GREEK.—Herodotus, *part of Book I.*—Homer, *Iliad, Book VI.*
LATIN COMPOSITION.—*Principia Latina, Part IV.*
GREEK COMPOSITION.—*Arnold's Greek Prose Composition.*
HISTORY.—*History of Greece* (*Smith's*).

THIRD YEAR.

LATIN.—Terence, *Heautontimorumenos ; Selected Satires and Epistles ;*
Virgil, *Georgics, Book I.*
GREEK.—Æschylus, *Prometheus Vinctus ; Euripides, Bacchæ.*
LATIN COMPOSITION.—*Principia Latina, Part V.*
* GREEK COMPOSITION.—*Arnold's Greek Prose Composition.*
Roman Classical Literature (*Brown's*).*History of the Greeks* (*Donaldson's*).

FOURTH YEAR.

LATIN.—Tacitus, *Agricola ; Juvenal, Selected Satires ;* * Cicero, *Tusculan Questions, Book I.*
GREEK.—Demosthenes, *Philippics ; Plato, Crito.*†Plautus ; Latin Prose
Composition ; * Greek Prose Composition ; * Greek Classical Literature
(*Brown's*) ; * Comparative Philology ; Müller's Science of Language, and
Clarke's Elements of Comparative Philology.

MATHEMATICS.

Professor.... CHARLES MACDONALD, M. A.

ALGEBRA.—[*First Year.*]—To the end of Progressions.
GEOMETRY.—[*First Year.*]—Five books of Euclid, with deductions.
TRIGONOMETRY.—[*First Year.*]—Solution of Plane Triangles.
ALGEBRA.—[*Second Year.*]—Binomial Theorem, Investigation of Logarithms, Probabilities, Life Annuities, Properties of Numbers
GEOMETRY.—[*Second Year.*]—Eleventh Book of Euclid, it Propositions with deductions in Plane Geometry.
TRIGONOMETRY.—[*Second Year.*]—Analytical Plane Trigonometry.—[*Third Year.*]—(Optional)—Spherical Trigonometry, with application to Astronomy ; DeMoivre's Theorem and Angular Analysis ; Conic Sections ; Differential Calculus begun.
[*Fourth Year.*]—(Optional.)—Conic Sections ; Differential Calculus, Integral Calculus, with application to Mechanics.

BOOKS RECOMMENDED.

* Young's Elementary Course of Mathematics. Cassell's or Potts'
Euclid.
Todhunter's, Colenso's, or Wood's Algebra.
Todhunter's, Colenso's, Snowball's, or Hymer's Trigonometry.
Todhunter's, Hymer's, O'Brien's, Parkle's Conic Sections.

Todhunter's, Hall's, or Hind's Differential and Integral Calculus.
Galbraith and Haughton's Mechanics ; Earnshaw's Statics and Dynamics ; Potter's Mechanics ; Galbraith and Haughton's, Webster's, or Miller's
Hydrostatics.

The Books in Weale's Series on Trigonometry and Conic Sections.†

ETHICS AND POLITICAL ECONOMY.

Professor.... VERY REV. PRINCIPAL ROSS, D. D.

ETHICS—(*Fourth Year*)—*Text Books.* Stewart's Active and Moral
Powers of Man. (Wecell's Elements of Morality.
POLITICAL ECONOMY—(*Fourth Year.*)—*Text Books.* Mill's Political
Economy. Wayland's Political Economy

LOGIC, METAPHYSICS, AND ESTHETICS.

Professor.... REV. WILLIAM LYALL, LL. D.

LOGIC AND PSYCHOLOGY.—(*Second Year.*)—*Text Books.* Sir William
Hamilton's Lectures on Logic. Prof. Lyall's * Intellect, the Emotions,
and the Moral Nature.'
METAPHYSICS AND ESTHETICS.—(*Third Year.*)—*Text Books.* Sir
William Hamilton's Lecture's on Metaphysics. Mansel's Metaphysics.
Lewes' Biographical History of Philosophy. Cousin on The Beautiful.
Alison's Essay on the Nature and Principles of Taste.

CHEMISTRY.

Professor....GEORGE LAWSON, PH. D., LL.D.

JUNIOR CHEMISTRY.—(*Second Year.*)—*Text Books.* Chambers's Chemistry by Macadam.
SENIOR CHEMISTRY.—(*Third Year.*)—*Text Book.* Fownes's Chemistry, (or Gregory's).
PRACTICAL CHEMISTRY.—(*Third Year.*)—*Laboratory Book.* Frescnius's
Qualitative and Quantitative Analysis.

NATURAL PHILOSOPHY.

EXPERIMENTAL PHYSICS.

Professor.... VERY REV. PRINCIPAL ROSS, D. D.

(*Third Year.*)—*Text Book.* Lardner's Handbook.
(*Fourth Year.*)—*Text Book.* Lardner's Handbook

MATHEMATICAL PHYSICS.

Professor.... CHARLES MACDONALD, M. A.

(*Third Year.*)—*Text Books.* Galbraith and Haughton's Mechanics.
Galbraith and Haughton's Hydrostatics.

HISTORY AND RHETORIC.

Professor.... JAMES DEMILL, M.A.

RHETORIC.—*First Year*)—*Text Books.* Whately's Elements of Rhetoric. Campbell's Philosophy of Rhetoric. Latham's Handbook of the
English Language. Angus' English Language.
HISTORY.—(*Fourth Year.*)—*Text Books.* Gibbon's Decline and Fall of
the Roman Empire. Hume's History of England. History of France.

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*The subjects marked with an asterisk will be required only from those competing
for places in the first or second class.
† Suffice for the course, except Geometry.

† For Students of the First Year, the Mathematical Books used in the Schools are for
the most part sufficient.
The Books in Weale's Series are mentioned principally for their champions.

Hallam's Middle Ages. Sismondi's Italian Republics. Taylor's Manual of Modern History.

MODERN LANGUAGES.

Tutor..... JAMES LEECHTI, ESQ.

FRENCH—(*Third Year.*)—Pujol's Grammar (first part)—Pœchler's Racontes Familières.
GERMAN.—(*Third Year.*)—Ahn's Grammar, (Meissner.)—Adler's Reader.
FRENCH—(*Fourth Year.*)—Pujol's Grammar, (second part)—Pœchin's Caractère Parisiennes.
GERMAN.—(*Fourth Year.*)—Otto's Conversation Grammar.—Adler's Reader.—A Play of Schiller.

SUMMER SESSION.

CLASSICS

Professor .....JOHN JOHNSON, M. A.
LATIN—Horace, *Odes, Book IV.*
GREEK.—Homer, *Iliad, Book XVIII.*

MATHEMATICS.

Professor .... CHARLES MACDONALD, M. A.
ASTRONOMY —*Text Book.*—Loomis's Astronomy.

EXPERIMENTAL PHYSICS.

Professor.....VERY REV. PRINCIPAL ROSS, D. D.
PNEUMATICS.—*Text Book.*—Imllton's Handbook.

LOGIC.

Professor .....REV. WM. LYALL, LL. D.
Text Books.—Those used in the Winter Session.

ENGLISH LITERATURE.

Professor ...... JAMES TwMILL, M. A.
Text Books.—Chambers' Cyclopædia of English Literature—Craik's English Literature.

BOTANY.

Professor ...GEORGE LAWSON, PH. D., LL. D
Text Books.—Gray's " How Plants Grow." Balfour's Outlines.
Field Book—Gray's Manual of Botany of the Northern States.

MODERN LANGUAGES.

Tutor. .....JAMES LEECHTI, ESQ.
FRENCH AND GERMAN—*Text Books.* Those used in the Winter Session.

TIME TABLE. Winter Session, 1869-70.

	EVENG.	FIRST YEAR	SECOND YEAR	THIRD YEAR	FOURTH YEAR
9—10		Rhetoric—Daily.	Mathematics—Daily.	Classics—Daily.	History—Daily.
10—11		Mathematics—Daily.	Chemistry—Daily.	Classics—Mon., Tues.	German—Fri.
11—12		Classics, Wed., Th., Fri.; Greek and Roman Hist.—Monday.	Psychology—Tu., Wed., Th., Fri.; Greek and Roman Hist.—Monday.	Mathematical Physics—Mon., Wed., Fri.; Experimental Physics—Tuesday, Thursday.	Experimental Physics—Tuesday, Thursday.
1—2				Metaph—Mon., Wed., Fri.	Mathematics—Tuesday, Thursday.
8—9	Chemistry—Daily.				French—Monday, Thursday.
9—4	Metaph—Mon., Wed., Fri.; German—Tuesday.				French—Monday, Thursday.

Prizes and Certificates of Merit, 1869.

UNIVERSITY PRIZES.

FOURTH YEAR.
CLASSICS..............................Herbert A. Bayne.
ETHICS................................Herbert A. Bayne.
HISTORY...............................Ebenezer D. Millar.
MODERN LANGUAGES......................Herbert A. Bayne.

THIRD YEAR.
CLASSICS..............................Hugh M. Scott.
METAPHYSICS...........................Hugh M. Scott.
NATURAL PHILOSOPHY....................Hugh M. Scott.
CHEMISTRY.............................Herbert A. Bayne.

SECOND YEAR.
CLASSICS..............................James G. McGregor.
MATHEMATICS...........................James G. McGregor.
LOGIC and PSYCHOLOGY..................James G. McGregor.

FIRST YEAR.
CLASSICS..............................William P. Archibald.
MATHEMATICS...........................Ephraim Scott.
RHETORIC..............................Ephraim Scott.

CERTIFICATES OF GENERAL MERIT.

FOURTH YEAR.—Class 1.—Herbert A. Bayne, Ebenezer D. Millar. Class 2.—John J. McKenzie.

THIRD YEAR.—Class 1.—Hugh M. Scott, Andrew W. Lindsay.—Class 2. None.

SECOND YEAR.—Class 1.—James G. McGregor, Wentworth E. Roscoe. Class 2.—Alexander G. Russell.

FIRST YEAR.—Class 1.—Wm. Bearisto, William P. Archibald, Ephraim Scott. Class 2.—Alexander Falfek, Hugh McKenzie.

GRANT PRIZE.

The Grant Prize of Five Pounds for the best Essay on "Origin, Development, and Comparative Merits of Modern Chemical Theories, with special reference to the Educational value of Chemistry as an unapplied Science," was awarded to Herbert A. Bayne.

YOUNG PRIZES.

The Young Prize of $40 was awarded by the Students of the Third and Fourth Years to John J. McKenzie.

The Young Prize of $10 was awarded by the Students of the First and Second Years to Hiram Logan.

ROY PRIZES FOR READING AND ELOCUTION.

The Reading Prize of $15, open for Competition to all Students, was awarded to Albert H. Quinn.

The Elocution Prize of $8, open to Students of the Rhetoric Class, was awarded to William M. Doull.

Examinations, 1868-9.

SCHOLARSHIP EXAMINATIONS, OCTOBER 1868.

The Scholarship offered for Competition to Students entering as Undergraduates, was gained by
Alexander W. Pollok.

The Scholarship offered for competition to Pupils from the Halifax Schools, was gained by
William P. Archibald.

UNIVERSITY EXAMINATIONS, 1868-9.

The following Undergraduates have passed the University Examinations in their several years:—

SUPPLEMENTARY EXAMINATIONS, NOV., 1868.
SECOND YEAR.—Walter M. Stewart.

SESSIONAL EXAMINATIONS, APRIL, 1869.
FINAL EXAMINATION FOR DEGREE OF B.A.—Joseph Annand, Herbert A. Bayne, Ebenezer D. Millar, John J. McKenzie, John M. Sutherland.

THIRD YEAR.—Andrew W. Lindsay, Hugh M. Scott, John Wallace.

SECOND YEAR.—James G. McGregor, Wentworth E. Roscoe, Alexander G. Russell, A. Parker Sexton.

FIRST YEAR.—Wm. P. Archibald, William Bearisto, Wm. T. Bruce, Charles W. Bryden, James Carmichael, Adam Giem, John Harter, Hugh McKenzie, Alex. W. Pollok, William Ross, Ephraim Scott, Hector Stamberg, Arthur I. Trueman.

STANDING OF THE STUDENTS IN THE SEVERAL SUBJECTS.

CLASSICS.
FOURTH YEAR.—(Examination for Degree of B.A.)—Class 1.—Herbert A. Bayne. Class 2.—Ebenezer D. Millar, John J. McKenzie. Class 3.—Joseph Annand, John M. Sutherland.

THIRD YEAR.—Class 2.—Hugh M. Scott. Class 3.—Andw. W. Lindsay. Class 3.—William H. Thorburn, John Wallace.

SECOND YEAR.—Class 1.—James G. McGregor. Class 2.—Wentworth E. Roscoe, Alexander G. Russell. Class 3.—A. Parker Sexton.

FIRST YEAR.—Class 1.—William P. Archibald, William Bearisto, Alex. W. Pollok. Class 2.—Ephraim Scott, Hugh McKenzie, John Harter. Class 3.—Charles W. Bryden, Adam Giem, Hector Stamberg, Wm. T. Bruce, Arthur I. Trueman, Wm. Cruikshank, William Ross, James Carmichael, Albert R. Quinn. Class 1, in Latin—James A. McKeon.

MATHEMATICS.
FOURTH YEAR.—Class 1.—James G. McGregor, Wentworth E. Roscoe. Class 2.—Alex. G. Russell. Class 3.—A. Parker Sexton.

FIRST YEAR.—Class 1.—Ephraim Scott, Arthur I. Thurman, Hugh McKenzie, William Drumm. Class 2.—Adam Gunn, William F. Archibald, Hector Stramberg, John Hunter, Alexander W. Pollok, William Ross, William Cruickshank. Class 3.—James J. McKeen, Charles W. Eveden, William T. Bruce, Albert R. Quinn, James Carmichael, Walter S. Doull, William M. Doull.

ETHICS AND POLITICAL ECONOMY.

Class 1.—Herbert A. Bayne, Ebenezer D. Millar, Joseph Annand, John M. Sutherland, John J. McKenzie.

METAPHYSICS AND ESTHETICS.

Class 1.—Hugh M. Scott, Andrew W. Lindsay. Class 2.—John Wallace, Walter M. Thorburn.

LOGIC AND PSYCHOLOGY.

Class 1.—James G. McGregor, Wentworth E. Roscoe, Alex. G. Russell. Class 2.—A. Parker Seeton.

CHEMISTRY.

SENIOR.—Class 1.—Herbert A. Bayne. Class 2.—Hugh M. Scott, Andw. W. Lindsay, John Wallace, Walter M. Thorburn.
JUNIOR.—Class 1.—James G. McGregor. Class 2.—George Abbknett, Wentworth E. Roscoe. Class 3.—Alex. G. Russell, A. Parker Seeton.

EXPERIMENTAL PHYSICS.

FOURTH YEAR.—Class 1.—Herbert A. Bayne, John M. Sutherland, E. D. Millar, Joseph Annand. Class 2.—John J. McKenzie.

MATHEMATICAL AND EXPERIMENTAL PHYSICS.

THIRD YEAR.—Class 1.—Hugh M. Scott, Andrew W. Lindsay. Class 2.—John Wallace.

HISTORY.

Class 1.—Ebenezer D. Millar Class 2.—Herbert A. Bayne. Class 3.—Joseph Annand, John J. McKenzie, John M. Sutherland.

RHETORIC.

Class 1.—Ephraim Scott, William F. Archibald, Charles W. Eveden, William Drumm. Class 2.—Adam Gunn, William F. Pollok, Hugh McKenzie. Class 3.—James J. McKeen, William Ross, William Cruickshank, Arthur I. Thurman, William M. Doull, John Hunter, James Carmichael, Adam Gunn, William T. Bruce, George Aitchison, Walter S. Doull.

FRENCH.

FOURTH YEAR.—Class 1.—Herbert A. Bayne, Ebenezer D. Millar.—Class 2.—John J. McKenzie, John M. Sutherland, Joseph Annand.
THIRD YEAR.—Class 1.—Andrew W. Lindsay, Hugh M. Scott.—Class 2.—John Wallace.—Class 3.—George Abbknett.

GERMAN.

FOURTH YEAR.—Class 1.—Ebenezer D. Millar.—Class 2.—Herbert A. Bayne, John J. McKenzie.
THIRD YEAR.—Class 1.—Andrew W. Lindsay.—Class 2.—Hugh M. Scott.—Class 3.—John Wallace.

Graduates and Undergraduates of the University, and General Students in Arts.

GRADUATES.

DEGREE OF M.A.

1869.
Chase, Henry Joseph . . . . Cornwallis.

DEGREE OF B.A.

1866.
Chase, Henry J. . . . . Cornwallis
Shaw, Robert . . . . New Perth, P. E. Island.

1867.
Burgess, Joshua C. . . . . Cornwallis
Cameron, A. J. . . . . Georgetown, P. E. Island.
Lippincott, Antony . . . . New Glasgow.
McDonald, John H. . . . . Cornwallis.
McNaughton, Samuel . . . . East River Pictou.
Ross, Alexander . . . . Rogers Hill, Pictou
Sedgewick, Robert . . . . Middle Musquodoboit.
Smith, David H. . . . . Truro.
Smith, Edwin . . . . Truro.

1868.
Carr, Arthur F. . . . . St. Edward's, P. E. Island.
Christie, Thomas M. . . . . Yarmouth.
Creighton, James G. A. . . . . Halifax.
Forrest, James . . . . Halifax.
McKay, Kenneth . . . . Hardwood Hill, Pictou.
Simpson, Isaac S. . . . . Merigomish, Pictou

1869.
Annand, Joseph . . . . Gay's River.
Bayne, Herbert A. . . . . Pictou.
Millar, Ebenezer D. . . . . Roger's Hill, Pictou.
McKenzie, John J. . . . . Green Hill, Pictou
Sutherland, John M. . . . . West River, Pictou.

UNDERGRADUATES. 1868-9

FOURTH YEAR.

Annand, Joseph . . . . Gay's River, Pictou
Bayne, Herber A. . . . . Pictou.
Millar, Ebenezer D. . . . . Roger's Hill, Pictou.
McKenzie, John J. . . . . Green Hill, Pictou
Sutherland, John M. . . . . West River.

THIRD YEAR.

Lindsay, Andrew W. . . . . Halifax.
McKenzie, Alex. C. . . . . Roston, P. E. Island.
Scott, Hugh M. . . . . Stewiacke.
Thorburn, Walter M. . . . . Bermuda.

SECOND YEAR.

Fitzpatrick, James . . . . Rogers' Hill, Pictou.
McGregor, James G. . . . . Halifax.
Roscoe, Wentworth E. . . . . Cornwallis, King's Co.
Russell, Alex. G. . . . . Truro
Seeton, A. Parker . . . . Halifax.
Story, John D. . . . . Halifax.

FIRST YEAR.

GENERAL STUDENTS.

NAME.	RESIDENCE.	CLASSES ATTENDED.
Abбinac, George	Halifax.	Math., Rhetoric, Chem., French.
Baird, Isaac	Stewiacke.	Classics, Mathematics.
Beak, John A.	Halifax.	Classics, Math. Rhetoric.
Blackadar, Henry	Grafton Shoal	Classics, Mathematics.
Browns, Angus	Musquodoboit	Classics, Math. Rhetoric.
Cameron, William	Halifax.	Classics, Math. Rhetoric.
Campbell, Donald	East River, Pictou.	History, Ethics, French, Ex. Physics.
Duff, William	Lunenburg	Classics, Chemistry.
Duff, Kenneth	Lunenburg	Classics, Mathematics.
Geddie, John	Antigonish,	Classics, Math. Rhetoric.
Leishman, John	Richibucto, N. B.	Classics, Psych., Ethics.
Logan, Hiram	East Boston, U. S.,	Class., Psychology, Chem., French.
McKeen, James A.	Tatamagouche,	Classics, Math. Rhetoric.
McMillan, Dinky	Scotch Hill, Pictou.	Classics, Math. Rhetoric.
McGillicray, John	New Glasgow.	Class., Math., Psychology, Chem-atry.
McKay, Daniel		Class., Math., Chemistry, Psychology.
Meek, John C.	Rawdon,	Class., Sat. Phil., Meta., Ethics.
Morton, Charles	Halifax,	Mathematics.
Murray, George F.	Mabou, C. B.,	Math., Classics Rhetoric.
Murray, John	Scotsburn, Pictou,	Class., Ethics, Ex. Phys.
Nelson, Adam	Shubenacadie.	Classics, Math. Rhetoric.
Richard, John	West River, Pictou.	Class., Math, Psychology, Chemistry, Ethics.
Thomson, Alex.	Antigonish,	Classics, Ethics
Thomson, James	Halifax,	French.
Tremaine, Enius	Port Hood, C. B.,	Classics, Chem., History, French, Ethics.
Webster, Henry	Kentville,	Classics, Math., Rhetoric.

Faculty of Medicine.

THE PRINCIPAL, (ex officio.)	
President.	Dr. W. J. Almon.
Dean of the Faculty	Dr. Reid.
Lecturers	Dr. George Lawson.
	Dr. W. J. Almon.
	Dr. A. G. Hattie.
	Dr. A. P. Reid.
	Dr. Edw. Farrell.
	Dr. W. H. Woodill.
Demonstrator	Dr. Ross.
Assistant Demonstrator. . . .	Dr. T. Trenaman.
Prosector	Dr. T. R. Almon.

The Third Session of the Medical Faculty of Dalhousie College will commence on Monday, 2nd May, 1870, when an Inaugural Address will be delivered. The regular courses of Lectures and Demonstrations will be commenced on the following day, and continued daily throughout the session, which extends to the end of July.

COURSE OF INSTRUCTION IN THE FACULTY OF MEDICINE.

The Lectures will be delivered in the University Buildings, Grand Parade.

I.—CHEMISTRY.

Lecturer.....Prof. George Lawson, Ph. D., LL.D.

Lectures daily from 1 to 3, p.m., illustrated by diagrams, tables, apparatus, preparations, and demonstrations on the black board. Experiments daily.

Class Book.—Fownes' Manual.

Fee for the Course of Lectures, (three months,) $6.

II.—INSTITUTES OF MEDICINE.

Lecturer.... ALEX. P. REID, M.D., L.R.C.S., Edin., L.C.P. & S., Ca., Surgeon to City Dispensary.

Lectures daily from 3 p. m., to 4 p. m., illustrated by microscopical preparations, plates and vivisections.

Class Books.—Carpenter, Dalton, Todd & Bowman, Kirke & Paget.

Fee for the Course of Lectures, (three months,) $6.

The Lectures on Institutes of Medicine will embrace Histology, Physiology and General Pathology, the first two divisions of the subject receiving most attention. Towards the close of the course a general outline of Pathology will be given.

III.—ANATOMY.

Lecturer....EDW. FARRELL, M.D., Surgeon to City Dispensary.
Lectures daily from 10 to 11 a.m., illustrated by the fresh subject, dried preparations, including skeletons, life-size plates, &c.

Class Books.—Gray, Wilson, Sharpey & Quain.
Fee for the Course of Lectures, (three months,) $6.

Every facility will be offered to students to become practically acquainted with Anatomy, under the Lecturer, (Dr. Farrell,) and the Demonstrators (Drs. Ross and Trenaman).

PRACTICAL ANATOMY.
Assistant Demonstrator.... T. TRENAMAN, M.D.
Demonstrator ... JAMES D. Ross, M.D.

Rooms open from 4 to 6, and 8 to 10, p.m.
Fee for Practical Anatomy $4.

THOS. R. ALMON, M.D., Presenter to the Chair of Anatomy.
Dr. Avery has presented to the Medical School a large and valuable series of Anatomical Plates.

IV.—MATERIA MEDICA.

Lecturer.....ALFRED H. WOODILL, M.D., Physician to City Dispensary.
Lectures daily from 11 a.m., to 12 noon, illustrated by specimens of the various pharmacological substances, microscopical objects, plates, &c.

Class Books.—Pereira by Farre, Stille, Dispensatories.

V.—OBSTETRICS.

Lecturers.. WM. J. ALMON, M.D. Consulting Physician to City Hospital and Dispensary, and Physician to City Alms House, and ALEX. G. HATTIE, M.D., Physician to City Hospital and Dispensary.

Lectures daily by one of the Lecturers, from 3 to 10, a.m.
Class Books.—Bedford, Tyler Smith, Cazeaux, Churchill.
Fee for the Course, (three months,) $6.

The Lectures will be illustrated by plates, manakins, &c., and senior students will have opportunities of becoming practically acquainted with the modes of treatment, &c., under direction of the Medical Officers connected with the Alms House and Dispensary, where a large number of cases occur.

VI.—BOTANY.

A short course of Lectures on Botany is usually given during the summer by Professor LAWSON, in connection with which there are one or two examinations for field demonstration.

PUBLIC HOSPITALS, &c.

The PROVINCIAL and CITY HOSPITAL, is visited daily at 12 M., by the Medical Officers, and may be attended by Students without payment of any fee. The CITY ALMS HOUSE, containing from 200 to 400 patients, half of whom are usually in the Hospital Wards, will likewise be available to Students, without fee. The best opportunities are here presented for clinical instruction, midwifery practice, and treatment of diseases; likewise for the observation of pathological appearances, which will be demonstrated by post mortem examinations.

CLINICAL LECTURES will be delivered at the Provincial and City Hospital and City Dispensary. Instruction will be given at the bed side, including physical diagnosis, and many opportunities afforded to Students to become familiar with the operations of minor surgery.

The HALIFAX DISPENSARY is carried on after the model of the DeMilt Dispensary, New York, being divided into three Departments, viz: (1.) *Surgical*, including the Eye and Ear ; (2.) *Medical*, including the Heart and Lungs ; and (3.) *Diseases of Women and Children.* At this Institution, from 50 to 50 cases are treated daily. Here the Student can have the advantage of becoming practically acquainted with Pharmacy and Midwifery under the Officers of the Institution.

Certificates of attendance on the Hospitals and Dispensary will be given to those Students who attend regularly.

EXTRACTS FROM THE REGULATIONS.

1. Students desirous of attending the Lectures shall, at the commencement of each Session, enter their names, age and residence, in the Register kept by the Dean, and each Student shall procure from him a ticket, for which he shall pay a fee of one dollar.

2. The Register shall be closed within one month after the commencement of each Session.

3. Each Lecturer shall deliver five lectures during the week, and each lecture shall be of one hour's duration.

4. Each Lecturer shall examine his class weekly on the subjects treated of in the preceding lectures, and such examination shall be considered a lecture.

5. A roll of names of the Students attending each class shall be called from time to time, in order that certificates of attendance may be given at the end of the Course.

6. The Matriculation examination is similar to that required by McGill University. Montreal, adopted under the Medical Act for Ontario, and recommenced by the "Council of Medical Education and Registration" of Great Britain. Students desirous of passing it may present themselves to the Principal of the College at any time during the Session. Students, not matriculating, may attend the classes without passing the examination.

Any additional information may be obtained on application to Dr. REED, the Dean of the Faculty,—Residence, 58 Argyle Street, opposite the Grand Parade.

MEDICAL STUDENTS, 1869.

Almy, Andrew N. ....Halifax.
DeWolf, George E. E. ....Dartmouth, N. S.
Eaton, P. Eugene ....Granville, Annapolis.
Fritz, Charles W. ....Bridgetown, Annapolis.
Ross, Lewis ....Dartmouth, N. S.
Macdonald, C. R. ....Pictou.
McIntosh, Daniel. ....East River.
McKenzie, Thomas ....Pictou.
McLean, John D. ....Rogers' Hill.
McMillan, Finlay............Scotch Hill.
McMillan, Peter H ....East River.
McMillan, William ....Pictou.
McPhee, Henry E. ....Inverness Co., C. B.
Moffat, William ....Richmond, C. B.
Moser, W. H ....Bridgetown, Annapolis.
Ross, J. G. ....Sydney, C. B.
Shepherd, Frank J. ....Montreal, Qu.
Sinclair, George L. ....Halifax.
Sutherland, Roderick ....River John.
Turner, J. W. M. ....Mergomish.
Wier, James. ....Douglas, Hants
Witt, George E. ....Bridgetown, Annapolis.

EXAMINATION PAPERS, 1869.

FIRST YEAR......LATIN.
GREEK.
HISTORY OF ROME.
MATHEMATICS.
RHETORIC.

SECOND YEAR...LATIN.
GREEK.
MATHEMATICS.
LOGIC AND PSYCHOLOGY.
CHEMISTRY.

THIRD YEAR.....LATIN.
GREEK.
MATHEMATICAL PHYSICS.
EXPERIMENTAL PHYSICS.
METAPHYSICS.
FRENCH.
GERMAN.

FOURTH YEAR...LATIN.
GREEK.
CHEMISTRY AND METEOROLOGY.
ENGLISH AND POLITICAL ECONOMY.
CHEMISTRY.
HISTORY.
FRENCH.
GERMAN.

SESSIONAL EXAMINATIONS, 1842.

MONDAY, APRIL 19 2 P. M.

MATHEMATICS.—FIRST YEAR.

ALGEBRA.

PROFESSOR C. MACDONALD, M. A. . . . . *Examiner.*

1. If an English sovereign is worth 4.84 of American coin; what sum in paper money can be obtained for 20 sovs., when gold is at 12½?

5. Divide .048 by .000016, and give the reason of the Rule you employ.

3. Find the sum of $\dfrac{x-y}{x+y} - 9 + \dfrac{x^2+y^2}{x^2-y^2}$.

4. Reduce to lowest terms the Fraction, $\dfrac{x^2 - 12\,x + 10}{2\,x^2 - 15\,x + 5}$.

5. Expand $(9 + 4)^{\frac{1}{2}}$ and $(9-4)^{\frac{1}{2}}$, and find their difference.

6. Find the square root of $4\,x^4 - 4\,x^3 + 13\,x^2 - 6\,x + 9$, and also that of $\dfrac{4}{a\,b} + \dfrac{9}{a} + \dfrac{b}{5} + 2\,a\,b^{\frac{1}{2}} + 2\,a^{\frac{1}{2}}\,b^{\frac{1}{2}} + x$.

7. Given $\frac{1}{2}\,x + \frac{1}{3}\,y = 6$, and $\frac{1}{3}\,x + \frac{1}{2}\,y = 5\frac{1}{2}$; to find x and y.

8. Having given a simultaneous equations of the first degree, independent of each other, involving n unknown quantities; describe the process of evaluating these quantities.

9. Solve the equations, $5\,x^2 - 11\,x = 9\,x = 0$, and $\dfrac{a-x}{a-x} = \dfrac{\sqrt{a} + \sqrt{a-x}}{\sqrt{a} - \sqrt{a-x}}$.

10. A student went by coach 6 miles into the country, and walked back at a rate 5 miles less per hour than that of the coach. He found that he was 50 minutes longer in returning than in going. Find the rate per hour of the coach.

11. Assuming the usual notation, find the last term and the sum of an Arithmetical series of a finite number of terms.

12. Shew that if a, b, c are in Harmonic Progression, their reciprocals are in Arithmetical Progression.

13. If m and n be the roots of the equation $x^2 + p\,x + q = 0$, prove $\dfrac{m}{n} + \dfrac{n}{m} = \dfrac{p^2}{q} - 2$.

14. If $s = 1 + r - r^2 + \&c$., and $s = 1 - r + r^2 - \&c$., each series continued to infinity; prove $s \times = 1 - r^2 + r^4 + \&c$., ad inf.

15. Find the sum of n terms and the limit of the series,

$$1 - \frac{3\,x}{2} + \frac{5\,x^2}{4} - \frac{7\,x^3}{8} + \&c.$$

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1869.

Monday, April 19, 9 A. M.

MATHEMATICS—FIRST YEAR.

GEOMETRY

PROFESSOR C. MACDONALD, M. A.............*Examiner.*

1. To draw a straight line perpendicular to a given straight line of unlimited length, from a given point without it.
  Why is the given line "of unlimited length"?

2. If from the ends of a side of a triangle there be drawn two straight lines to a point within the triangle, these shall be less than the other two sides of the triangle but shall contain a greater angle.

3. Equal triangles upon the same base and upon the same side of it, are between the same parallels.

4. If a straight line be divided into two equal and also into two unequal parts, the squares of the two unequal parts are together double of the square of half the line and of the square of the line between the points of section.

5. To find the centre of a given circle.
  Euclid's order of procedure in this Proposition is faulty.

6. The angle at the centre of a circle is double the angle at the circumference, standing upon the same part of the circumference.

7. In equal circles equal arcs are subtended by equal chords.
  Express the substance of the four Propositions of the Third Book of Euclid, 26th—29th inclusive, in a single Enunciation.

8. Prove, by the division of the straight line only, that, if a straight line be divided into two parts, the square of the whole line is equal to the squares of the two parts and twice the rectangle contained by the parts.

9. From two given points without a given straight line, it is required to draw two straight lines meeting in that line, so that their sum may be the least possible.

10. If the two opposite angles of a quadrilateral figure be together equal to two right angles, the circle that passes through three of its angular points will also pass through its fourth.

11. There are two concentric circles, X and Y, and a chord AB of the greater cuts the less circle in C. Prove that the rectangle AC CB is constant.

12. From a given point A, straight lines AB, AC, AD, &c., are drawn meeting the straight line XY in B, C, D, &c., and upon these lines as diameters circles are described. Prove that the circles intersect XY in a common point, and find the locus of their centres.

13. A B C D E F is a regular Hexagon inscribed in a circle. Join A C, A E, F B. Prove that F B is bisected.

14. A B C D E F is a regular Hexagon inscribed in a circle. Join A C, A E, F B. Prove that F B is bisected.

SESSIONAL EXAMINATIONS, 1869.

MONDAY, APRIL 19, 3 P.M.

MATHEMATICS—SECOND YEAR.

TRIGONOMETRY AND ALGEBRA.

PROFESSOR C. MACDONALD, M.A. . . . . *Examiner.*

1. Trace the changes, in magnitude and sign, of sin A and cos A, from A = 0, up to 360°.

2. The Circular measures of an arc is *x*; find its Gradual measure.

3. Given the formulæ for sin $(A - B)$ and cos $(A - B)$; prove these for sin $(A - B)$ and cos $(A - B)$, by taking the angle B in the negative direction.

4. Given sin $x = \dfrac{b + \sqrt{a^2}}{a + b}$; find the other five circular functions.

5. Find sin 2A, cos 2A, tan 2A, in terms of A.

Prove also that sec $A = 1 + \tan A \cdot \tan \frac{1}{2} A$.

6. The sum of the sines of the angles of a triangle = 4 times the continued product of the cosines of their half-arcs.

7. If *a* be the circular measure of an angle, prove sin *a* less than *a*, but greater than $a - \frac{1}{6} a^3$. Show the value of this formula.

8. In any triangle, prove sin A : sin B :: *a* : *b*; and $a + b : a - b$ :: tan $\frac{1}{2} (A + B)$: tan $\frac{1}{2} (A - B)$.

9. Express in a *logarithmic* equation the area of a triangle in terms of its sides, and prove Log cos A = 2a — Log sec A.

10. Assuming the value of cos A in terms of the sides of the triangle A B C, find the values of cos $\dfrac{A}{2}$ and sin $\dfrac{A}{2}$.

11. If *a*, *r*, *r'*, *r''*, be the radii of the inscribed and the three escribed circles of a triangle, prove $\dfrac{1}{a} = \dfrac{1}{r} + \dfrac{1}{r'} + \dfrac{1}{r''}$.

12. A B C being in a level plain, and C D an inaccessible object, its height may be found by measuring its angle of elevation at each of the stations A and B, the horizontal angle C A B, and the distance A B.

13. Extract the nth root of 65 by the Binomial Theorem.

14. A sum of money, £M, is payable *p* years hence on the condition that either of two persons, A and B aged *m* and *n* years respectively, shall then be alive. Shew accurately the reason for finding the present value of M.

15. From the 6th power of any even number 1 be taken, the remainder is the product of three odd numbers, two of which are those adjacent to the even number.

16. Show how the series log $(1 + x)$ = $x - \frac{1}{2} x^2 + \frac{1}{3} x^3 - \&c.$, has to be manipulated in order to make it available for the calculation of natural logarithms, and thus shew how we pass from the Natural system to the Common system.

17. There is one bag containing 5 black balls and a white; and another containing 6 black and 8 white. A person thinks that, as the proportion of the white to the black is the same in both cases, the chances of drawing in a single trial two of a colour, *e.g.,* white, from each bag, are the same. Shew his mistake.

DALHOUSIE COLLEGE AND UNIVERSITY,
HALIFAX.

SESSIONAL EXAMINATIONS, 1865.

TUESDAY, APRIL 25, 9 A.M.—1 P.M.

LOGIC AND PSYCHOLOGY.

PROFESSOR LYALL, LL.D.... ......*Examiner.*

1. On what principle does Sir W. Hamilton retain the nomenclature of Faculties as applied to the Mind?

2. According to what other principle may the Mind be regarded, and what is the advantage of so regarding it?

3. Give Sir W. Hamilton's classification according to the one principle, and the distribution adopted in the class by the other.

4. To what higher or last authority of Mind may the Intuitions be carried up, or why are they designated Intuitions? How else are they denominated? What is the Empirical view of Mind?

5. What are the Laws of Mind in any psychological classification, and to what Faculty in Sir W. Hamilton's classification do they correspond?

6. Of which of the Laws, as given, is Logic only the scientific development?

7. What two prominent functions or processes of Mind are at once the logical antithesis, and yet reciprocally the complements, of each other? Show how this is.

8. As we determine how may we be said to *classify,* and as we *classify* how may we be said to determine, and what is the process, or in either case? What secondarily are Aristotle's Predicables?

9. What secondary results are obtained in the above process, or processes? What accordingly are Aristotle's Predicables?

10. What is Classification as distinguished from inductive or scientific generalization? Give examples of each.

11. What are the two quantities according to which Concepts may be regarded?—and what two forms of reasoning do they respectively represent?

12. Which of these forms of reasoning is the Analytic, and which the Synthetic, process?

13. How would you characterize true reasoning as distinguished from what is simply Analysis?

14. Why does a true act of reasoning express itself in the extensive, and not in the intensive, syllogism? What is Mill's view of the reasoning process? What exception does he take to Hamilton's account of that process according to the two quantities? What exception is taken to that account in the class?

15. Of which of the processes—analytic or synthetic—is the Sorites the argument or vehicle? Describe the Sorites.

16. What is the regressive intensive syllogism, or how does the intensive syllogism become an extensive, and *vice versa*? What accordingly is the regressive intensive Sorites, and wherein consists its awkwardness?

17. Give the rules or canons of the Categorical Syllogism. What is the nature, and what are the rules, of the Hypothetical, and what of the Disjunctive, Syllogism? What is the Dilemma?

18. What is the Mood, and what the Figure, of a Syllogism? Show the use of the mood and third figures respectively, and what an Argument may fall into these figures in preference to the first? Show why Generalization is an Argument in the third figure.

19. Give a view of the Fallacies.

20. What is the object of the doctrine of Method, and by what means is it accomplished? Give the rules of Definition and Division respectively.

SESSIONAL EXAMINATIONS, 1869.

WEDNESDAY, 21ST APRIL, 9 A. M. TO 1 P. M.

JUNIOR CHEMISTRY.

PROFESSOR GEORGE LAWSON, LL.D. . . . . *Examiner.*

1. What is meant by the Equivalent Number of an element. What is the difference of "equivalent," as distinguished from "atomic" weight. What are the equivalent numbers of H, N, C, Cl, S, P, K, Na, Mg, Fe, Hg, Cr, Au. Give the formula for the highest oxide of each of these elements.

2. Give a statement of the four laws of combination by weight.

3. Give a full account of the composition and chemical properties of Plaster of Paris, Limestone, Marble, Burnt Lime, Slacked Lime and mortar.

4. What kinds of "hard water" may be rendered "soft"; upon what does the hardness depend, and what are the means employed to remove it.

5. Describe fully the element Oxygen, give its history, preparation and properties, state the proportions of this gas, and of other materials (fully describing them) which form the Atmosphere.

6. Write correctly the chemical formula for the following compounds, viz.: Sulphate of Protoxide of Iron, Tartar Emetic, Epsom Salts, Saltpetre, Common Salt, Chlorate of Potash, Sulphate of Chromia, Phosphate of Soda.

7. Describe the manufacture of Carbonate of Soda from Common Salt.

8. Describe the process of manufacture of Phosphorus.

9. Describe the process for preparing Phosphuretted Hydrogen. What is the composition, and what are the properties of the gas.

10. What are the oxides of Manganese, and what salts or other compounds do they form?

11. Classify the Metals according to the action of Acids upon them; and classify the metallic oxides, with a view to passing successively through the different groups.

12. Silver in solution. How is it precipitated, and in what form. Give a calculation to show how you would estimate the amount of metallic silver.

SESSIONAL EXAMINATIONS, 1879.

MONDAY, APRIL 28, 9 A. M.

MATHEMATICAL PHYSICS.

PROFESSOR C. MACDONALD, M.A. .... *Examiner.*

1. Assuming that the theorem of the "Parallelogram of Forces" has been proved for the *direction* prove it for the *magnitude*, of the resultant.

2. If the forces P, Q, R, acting at a point, be in equilibrium, prove P : Q : R :: sin (Q, R) : sin (R, P) : sin (P, Q).

3. If P, P′, P″, &c., be any parallel forces in the same plane, and if from any point in this plane a straight line be drawn cutting the lines of their action, prove, according to the usual notation, that S (P) . X = S (Px) : and shew how the formula can be extended to "centre of gravity."

4. Find the centre of gravity of the slant surface or a cone.

5. Enunciate the principle of Virtual Velocities, and prove it for the Inclined Plane.

6. If two bodies resting on two opposite inclined planes, and connected by a cord passing over a pulley at their common summit, be in equilibrium, prove that the pressures on the planes are inversely as the tangents of their inclinations.

7. Define a Moment, and shew that in raising a heavy beam from the ground towards a vertical position by applying a force at one end, less force is required as it approaches the vertical position.

8. Find the greatest height a particle attains above a horizontal plane passing through the point of projection, and shew that, for a given range less than the greatest, there are two angles of projection connected by the formula $i - b'= 4 \cdot - e^{i}$.

9. Prove the formula $v^2 = V^2 \pm 2 f s$, &c. :—A body is projected vertically upwards with a velocity of 500 ft. per second. Find the greatest height it will reach.

10. Find the length of a seconds' pendulum at the surface of the planet Jupiter, he mass being 338 times that of the earth, and his radius 11½ the earth's radius (nearly).

11. A course of a Railway (radius, r), is to be constructed with a view to a given average velocity, (v), of trains running over it. Shew that a cross section of the road should be inclined to the horizon at an angle given

by the equation, $\tan a = \dfrac{v^2}{g \, r}$.

12. An elastic ball strikes a plane and rebounds. Find the relation between the angles of incidence and reflection, and shew that they are not equal for any known substances.

13. Prove that if two perfectly elastic balls impinge directly, the sum of the *vires vivæ* before and after impact are equal, i.e., m V²+ m′ V′²= m v²+ m′ v′²; and if they are also equal, they interchange velocities.

14. Give a sketch of a Bramah Press, and assume numerical dimensions to find its mechanical advantage.

15. Find the specific gravity of a solid by the Hydrostatic balance.

16. The height of the mercurial column of a Barometer into which some air has found its way is h′, while the reading on a true Barometer is h : shew how the quantity of air that has got into the tube may be calculated.

SESSIONAL EXAMINATIONS, 1869.

TUESDAY, APRIL 20, 9 A. M.—4 P. M.

EXPERIMENTAL PHYSICS.

VERY REV. PRINCIPAL ROSS, D. D.......... *Examiner.*

1. What is the principal difference between Mathematical and Physical science?

2. Describe the experiment by which the porosity of Gold was proved?

3. State the law or principle in Physical Science denoted by the term *Inertia.*

4. What is the only necessary condition of stable equilibrium in a solid body?

5. What are *pick lines* in what work? and how are they ascertained?

6. What effect is produced on the sensibility of a balance by diminishing the distance of the line joining the points of suspension from the centre of inertia?

7. Mention some of the most important applications of the pendulum.

8. Define the term "Force" as employed in the science of Mechanics.

9. In comparing the amount of different forces, what standard or unit of work has been adopted? In estimating large amounts of force what measure is usually employed? How many units of work are contained in this measure?

10. A drop of water from a cloud descends, for some time, with constantly increasing velocity. Before it reaches the earth its velocity has become nearly uniform. Assign the reason.

11. When a heavy body is projected from the earth, to the action of what separate and independent forces is it subject?

12. On what principle does the Hydrostatic press depend for its immense power? What advantage does it possess over most other machines?

13. What is the centre of pressure in a liquid mass?

14. How is the specific gravity of a body which floats in water ascertained?

15. Mention the principal phenomena produced by the *interference of waves.*

SESSIONAL EXAMINATIONS, 1869.

THURSDAY, APRIL 22, 9 A.M.—1 P.M.

METAPHYSICS AND ESTHETICS.

PROFESSOR WILLIAM LYALL, LL.D. .... *Examiner.*

1. About what period B. C., and in what part of the world, have we the earliest efforts at speculation ?

2. What direction did these efforts take ?

3. To what exertions, successively, did they propagate themselves, and what manifestations did they assume ?

4. Give some account of the rise of speculation in Greece.

5. Mention the schools of early Greek Philosophy.

6. To what extent did learning and philosophy converge latterly in Greece ?—and what schools flourished there ?

7. What influence did Socrates exert on philosophy ?

8. What did Plato's system accomplish in the history of philosophy ? How had it at once a retrospective and prospective regard and influence ?

9. What rival system divided with Plato's the influence on subsequent speculation ?

10. Show the historical place and influence of Scepticism, in its own rise, and renascence of effects.

11. What different schools, accordingly, arose out of the debris of previous systems ?

12. In what forms did faith struggle against Scepticism ?—and where did it take refuge in its own impotence to deal with acquired doubts ?

13. What modern phase of Speculation resembles the mysticism of the Alexandrian school—to Faith of Platinus ? And what doctrine of more recent times is instrumental to a demand for the same kind of faith ?

14. How may we assert a Faith which is neither the supernatural faith of Plotinus, nor the hap-hazard faith, or assumption, the which Hamilton and Mansel contend ?

15. What was the fate of Philosophy in Rome ? With whom did ancient Philosophy close ?

16. In what writings did Philosophy survive—and what names furnish the connecting link between ancient speculation and the scholastic ages ?

17. What was the character of Scholastic Philosophy ? With what subjects did it chiefly deal ?

18. In which class of Emotions have we the Esthetic, and what views have been formed on the subject of the Emotion, or the nature of the Beautiful ? Whereas does the Sublime differ from the Beautiful ? In what connexion, in a theory of the Beautiful, is Sir W. Hamilton's account of this state, or quality, deficient, which Cousin's supplies ? Give the circumstances, or conditions, in which, according to Burke, we have the Beautiful and the Sublime respectively.

19. In what order of precedence may the several Arts be stated ? What is the common element in Art, and how may Poetry and Painting be divided, or classified, as to their kinds, according to a common principle ?

20. Classify the Desires according to the Emotions. How does worth or value operate as a kind of balance power, or furnish a regulating principle, among these states ? What is the Will as distinguished from these states, and what view has been taken of this last principle of our nature ?

DALHOUSIE COLLEGE AND UNIVERSITY,

HALIFAX.

SESSIONAL EXAMINATIONS, 1869.

THURSDAY, APRIL 27, 3 P.M.

FRENCH.—THIRD YEAR.

JAMES LIECHTI, ESQ.......................*Examiner.*

Translate: (1) From Pascal's "Connaissance générale de l'homme:"
"La première chose qui s'offre à l'homme quand il se regarde, c'est son corps, c'est-à-dire une certaine portion de matière qui lui est propre. Mais pour comprendre ce qu'elle est, il faut qu'il la compare (1) avec ce qui est au-dessus de lui et tout ce qui est au-dessous, afin de reconnaître ses justes bornes. Qu'il ne s'arrête donc pas à regarder simplement les objets qui l'environnent ; qu'il contemple la nature entière dans sa haute et pleine majesté ; qu'il considère cette éclatante lumière, mise comme une lampe éternelle pour éclairer l'univers ; que la terre lui paraisse (3) comme un point auprès du vaste tour que cet astre décrit, et qu'il s'étonne de ce que ce vaste tour n'est lui-même qu'un point très délicat à l'égard de celui que les astres qui roulent dans le firmament embrassent."

2. In what mood are the two verbs *compare* and *paraisse*, and why? Translate : Will you study Homer with me? Have you commenced reading Shakspere ? He hurt himself (*s'est fait mal*) in falling. Account for the form of the verbs study, reading and falling.

3. Illustrate by short examples how *sous* and *sur* are to be rendered in French (1) before a *noun, fois,* and plural noun ; (2) before an adj. of qual.; (3) before the direct object of a trans. verb accompanied by a negation.

4. Write the fem. of the following adj.: *blanc, épais, frais, faux, mollu, public, sec, doux, caf, cruel, aimable, heureux, premier, aquilin.* Compare : *bon, armel, bien, mauvais, peu, mauvais, mal.* Translate : An old man ; a foolish hope ; a new object ; a beautiful tree.

5. Correct the following sentences, and state what rules have been violated : Elles ds choses au sont impossibles que paroxype'es s'est accumtumé à avoir qu'elles les sont. Il est de ces mortels favorisé des cicls qui sont tout par eux-mêmes et rien par leurs clients.

6. What is the difference between : Il faut sa dire la vérité, and Il ne faut dire la vérité ? Explain the construction of the personal object.

7. *Combien,* filters by con. of what meanings this word is susceptible. What other word may be used elegantly instead of it ? Give an instance.

8. This merchant pays to England twice a (*par*) year and once to Paris. The physician went to his patients (*malades*). Explain the use of the prep. "to."

9. Name at least six of the leading points in which the French and English Languages differ.

10. Translate: " Encline to his son": My dear child—You may have (*avez pu*) seen by the letters I am writing to your mother, how much I am affected by (*touché de*) your malady, and the extreme pain it gives me (*je ressens*) not to be near (*auprès de*) you, in order to console you. I see you patiently accept (*passez*) the trial (*le mal*) which God has sent you, and that you are powerfully (*avec*) doing all you are told to do. It is greatly important for you not to become impatient.

SESSIONAL EXAMINATIONS, 1869.

FRIDAY, APRIL 23, 3 P.M.

GERMAN.—THIRD YEAR.

JAMES LIECHTI, Esq. .... *Examiner.*

Translate. 1. (a) From Schiller's "Parabeln und Räthsel," "The plowshare."

(b) From Hemle's "Scene und Moral."

". . . . Neidend stand das andere Licht und sah, dass es die Herrliche nicht zu überglänzen vermochte (1): "Wir sollen," sprach sie murrend bei sich selbst, "zwei Flecken auf einen Thron? Werum nennen ich, die Zweite und nicht die Erste sein (1)?"—Und plötzlich schwand, von innerm Grame verjagt, ihr schönes Licht hinweg. Hinweg von ihr floss es weit in die Luft und ward das Herr der Sterne. Wie eine Todte löschte, stand Luna da, (2) leuchtest vor allen Himmlischen, und weinte : " Erbarme dich Vater der Wesen, erbarme dich!"

2. Account for the position of the words *vermochte, ich, sein,* &c. In what cases does er exchange er versteen the subject and the verb take place? Translate: Yesterday I found a book in the street. When I was in London I saw the Queen.

3. Point out the place of Adverbs of time, and mention how the relative pronoun affects the verb. Give examples.

4. Decline in full the following words : *Der Löhne ; ein grosses Freude ; Lerd ; schönes Mädchen ; die freundlichen Staketbauern ; fliessende Brunnen (pl.) ; ein Fachmann.*

5. Out of the room. We go through the word. He goes into his room. Flowers are in the Garden. The dog lies under the table. What propos govern the Genitive ? Mention instances.

6. War ist deuer Mann ? *Welan* von ihrem Schwestern ? *Dieses* ist der sämtliche Mann. *Welche* sind Ihre Schwestern ? Account for the neuter form of *dieser* and *welche.*

7. Compare the following words : *hoch, alt, gut, viel, viele, gern hold.* Illustrate by cas., and explain the use of the two forms of the superlative.

8. Have two men adj. compared with one another ? Give the equivalent of *so–as, so as–as, so–sowie,* and *the–the.* Render into German : Augustus was more successful than brave. Alexander was as ambitious (*sieginig*) as Cæsar. The better (die) man (m., the happier they 2. are l. My brother is as old again as I.

9. Translate : I love my father and my mother. All men are alike (*gleich*) before God. We admire (*bewundern*) such men. He has lost (*verloren*) the whole of his fortune (*Vermögen*). No rose without thorns (*Dornen*). Every country has its pleasures. If I had not had so much misfortune. Do you believe him to have much knowledge? (*Kenntnisse*). You are right; but your friend is wrong. What has become of our Neighbour ? (*Nachbar*). Old people become wise.

DALHOUSIE COLLEGE AND UNIVERSITY, HALIFAX.

SESSIONAL EXAMINATIONS, 1869.

MONDAY, APRIL 19, 9 A. M.

MATHEMATICS.—SECOND YEAR.

GEOMETRY AND MENSURATION.

PROFESSOR C. MACDONALD..................*Examiner.*

1. If two triangles have one angle of the one equal to one angle of the other, and the sides about the equal angles proportionate, the triangles shall be equiangular, and shall have those angles equal that are opposite to the homologous sides.

2. To find a mean proportional between two given straight lines.

3. Similar triangles are to one another in the duplicate ratio of their homologous sides.

4. If two triangles that have two sides of the one proportional to two sides of the other, can be joined at one angle so as to have their homologous sides parallel, the remaining sides shall be in a straight line.

5. If two straight lines be at right angles to the same plane, they shall be parallel to one another.

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

7. In any triangle, if a perpendicular be let fall from the vertex on the base, the base : sum of sides : : difference of sides : difference of segments of base.

8. If three circles cut one another, their radical axes pass through the same point.

9. If X be a circle and Y Z a straight line, of which the pole with respect to the circle is P, every straight line passing through P is divided harmonically by the circle and the line Y Z.

10. Through a given point to draw a straight line cutting two straight lines that meet, so that its segments between the point and the lines may be in a given ratio to each other.

11. Two diagonals of a regular pentagon cut each other in extreme and mean ratio.

12. Express the area of a parallelogram in terms of its diagonals and their angle of intersection. Hence, find the parallelogram of greatest area when its two diagonals are given.

13. Find the area of the triangular field whose sides are 7, 8 and 9 chains, respectively.

14. A hollow cylindrical vessel of cast iron, is to be made, open at one end, and 2 inches thick throughout. The outside measurements are, diameter of base = 16 inches, height = 20 inches: find it cubic inches the quantity of iron necessary.

SESSIONAL EXAMINATIONS, 1869.

FRIDAY, APRIL 23, 9 A.M.—1 P.M.

ETHICS AND POLITICAL ECONOMY.

VERY REV. PRINCIPAL ROSS, D. D. .... *Examiner.*

1. Write out a brief synopsis of the subjects discussed in the Ethic class.

2. Why is the study of man's Active nature appropriately preceded by the study of his Intellectual nature?

3. When mental act contends the Intellectual process with the external action? Explain as nature.

4. What important consequences result from " the right employment of our entire power"; and what, from its "abuse and perversion"?

5. Illustrate the importance of the study of motives.

6. Cite some examples to shew the strength of the desire of Society.

7. What are the principal differences between the principles of action in man and in the inferior animals?

8. Explain the difference between duties and virtues.

9. In whose writings do we discover the first germ of the correct theory respecting the nature of virtue? What subsequent writers unfolded and perfected this theory?

10. Mention some of the virtues which have been termed *heroic.* Give examples.

11. To what should the laws of all nations conform?

12. In what way do the laws of a nation prove moral education of its people.

13. In the history of civilization were the Arts or the Sciences first studied? Assign the reason. Explain the influence which they have exerted on each other.

14. To what principles in human nature are we chiefly to ascribe the origin and improvement of Architecture?

1. What is the fundamental problem which Political Economy attempts to solve?

2. Explain the "Mercantile System"; and point out its radical error

3. What is the difference between *Value* and *Price?*

4. What are the essential requisites of production?

5. Describe the condition of the laborer without capital; and has importance, considered in what, by means of capital, he has supplied himself with suitable tools.

6. What value does the merchant add to the commodities which he imports or collects into one place?

7. In what way do railroads benefit those who never travel on them?

8. Mention the principal circumstances which affect the rate of wages.

9. By whom is the whole amount expended in the production an importation of an article, it ordinary circumstances, ultimately paid?

10. Mention the principal parties among whom the last price of a pound of tea is to be distributed?

11. In what circumstances is it more profitable to import than to produce a commodity which we want.

12. What class of persons should be exempted from the payment of taxes; and why?

13. What is the fundamental principle on which all taxation should be based?

SESSIONAL EXAMINATIONS, 1869.

WEDNESDAY, APRIL 21, 9 A. M.—1 P. M.

SENIOR CHEMISTRY.

PROFESSOR GEORGE LAWSON, LL. D. .... *Examiner.*

1. What is Hydrogenium, what are its physical characters, in what form is it known, and by what means has our knowledge of it been obtained? Explain in precise terms the relation which it bears to Hydrogen, and wherein the two differ.

2. CO_2 and HO exist in the air; show in detail the methods by which the plant may form out of them such compounds as Starch, Sugar, Gum, Woody Matter, organic acids, neutral ethers, volatile and fixed Oils and Fats, colouring matters, &c.

3. What is the chemical constitution of Gun Cotton: how do you explain its explosive property, and what is the process of manufacture?

4. Calculate how much metallic lead is 340 tons of pure Galena; how have much metallic iron in 1395 tons of pure magnetic oxide; how much Sulphur in 1240 tons of pure Iron Pyrites.

5. Describe Cyanogen with reference to its history, composition, chemical characters, and the compounds which it forms.

6. Explain fully the process of Fermentation; what substances, vegetable and animal, are subject to this process, what is the chemical nature of the change which they undergo, what are the products, in what proportions, and how may they be separated from each other.

7. Describe the compound radical Methyl, what is the evidence of its existence, what are the principal compounds which is forms, describe its derived radicals (if any), and their principal compounds. What is Trimethylium, how is it obtained, and what are its properties.

8. What are the principal forms of albuminoid substance in the plant and animal. Show the changes which albuminoid and carbonaceous foods undergo in the processes of digestion, assimilation and secretion in the animal, and the forms in which the waste carbon and nitrogen of animal tissues are finally eliminated.

9. Compare the general character of the chemical changes carried on in the tissues of the plant, and those that take place in the animal, and explain the reason why plants give off oxygen and animals carbonic acid.

10. Give an account of some of the principal Natural Alkaloids, with special regard to their typical constitution, and the views held by different chemists on this point.

11. What is Acetyl, how is it produced, and what are its chief compounds.

12. Explain in detail the chemical changes involved in the conversion of organic matter into Coal.

SESSIONAL EXAMINATIONS. 1869.

THURSDAY, APRIL 22, 3 P. M.

FRENCH.—FOURTH YEAR.

JAMES LIECHTI, Esq. ....*Examiner.*

Traduions : 1. (a.) " Conversion de Salm." Pages 13, 14.
(b.) " Extrait de Massillon : *De l'existence de Dieu.*"

"Les peuples les plus grossiers et les plus barbares entendent la langage des rois. Dieu ne a établie sur nos têtes comme des lettres célestes, qui ne cessent d'annoncer à tout l'univers sa grandeur ; leur silence majestueux parle la langue de tous les humains et de toutes les nations ; c'est une voix entendue partout où la terre nourrit des habitants. Qu'on parcoure jusqu'aux extrémités les plus reculées de la terre, et les plus déserts ; nul lieu dans l'univers quelque caré qu'il soit au reste des humains, ne peut se dérober à l'éclat de cette puissance qui brille au-dessus de nous dans les pures lumières qui décorent le firmament."

2. Donnez le corrigé des phrases suivantes et isolez mention des règles qu'on a violées : " La nature s'est montrée une mère bienfaisante ; elle a prodiguée à sa culture de précieux biens, dont ils ont abusée. Ne reprenez-vous jamais des services que vous avez rendu à un ami, il voudrait mieux de ne lui en avoir pas rendus."

3. Rendez raison de la différence de construction dans les phrases : *L'auteur dont j'ai lu les ouvrages est mort* ; and *l'auteur dont les ouvrages ont été publiés est mort.* Écrivez trois autres exs. sur l'emploi du mot *whom.*

4. Expliquez la construction de l'objet du verbe, de *l'adj.* et de la prép. Traduisez : He attacked and took possession of the city. I am sensible of (à) and content with the proofs of friendship you have given me. He spoke at the same time against and in favour of his friend !

5. Indiquez les préps. qui se placent devant *l'infinitif,* le Part. prés., et devant les auxiliaires *avoir* et *être.* Citez des exemples.

6. Quel est l'accord du Part. prés. [forme verbale en *ant*], et du Part. passé suivi d'un infinitif ? Écrivez en Français : More than half the earth is stocked (*peupler*) with animals, living and dying without knowing it. The lawyers whom I have heard pleading. Here is the letter which you told me to write.

1. De se non adressés à moi. Ils se sont adressés des lettres. Elles se sont vues. Elles se sont parlées. Expliquez l'accord de ces part. passés, et corrigez ce qui en est incorrect.

8. Traduisez en Français. The literary glory of Italy and Spain had set (*s'éteindre*) ; that of Germany had not yet dawned (*se lever*). The genius, therefore, of the eminent men who adorned Paris shone forth (*briller*) with a splendour which was at all to full advantage (*rehausser*) by contrast. France, indeed, had at that time an empire over mankind, such as even the Roman Republic never attained. For when Rome was politically dominant, she was in arts and letters the humble pupil of Greece. France had on the commanding [environments] countries at once the ascendancy which Rome had over Greece, and the ascendancy which Greece had over Rome. French was becoming the universal language ; the language of fashionable society (*haute société*), the language of Diplomacy.   MACAULAY.

SESSIONAL EXAMINATIONS, 1862.

FRIDAY, APRIL 25, 3 P. M.

GERMAN.—FOURTH YEAR.

JAMES LIECHTI, Esq. ....*Examiner.*

Translate:—1. a. From Schiller's " Wilhelm Tell," Act I., Scene II.
b. From Goethe's " Sprüche in Prosa."

"Die Weisheit ist nur Faust, aber eine ungeheure; dasnenge anschau wie als aus blindend an dasne verbel as homers, as Fauth:s wage was as verbronen. Literatur ist das Fragment des Fragmente; das Wenigste dessen, was geschah und gesprochen wurden, ward geschrieben; vom Geschriebenen ist das Wenigste übrig geblieben."

2. Was jedesmal hast und aus deinem Conjunctions on the construction? Name those conjunctions which cause no alteration, and mention inversion. Write in German: Scarcely had he spoken the word when Tell's arrow struck (*herford*) him. Not only has he given him good advice (*Rath, m.*) but he also offered (*bot . . . an*) him money. When the crown of France vanished (*verschwinden*) from her eyes, Mary Stuart exclaimed in nervous fält(és?): Farewell happy France, I shall never see thee more (*wieder*).

3. With what five German words does the English Only, when correspond? How do you express in and since denoting reason? Give a few examples.

4. *Mein Freund* hat *widere einen leiten Brief* von seinem *Vater erhalten*. Write the different constructions of which this sentence is susceptible, and state when they are to be used.

5. Correct the following phrases, and account for mistakes: *Alles men Geld*. *Ich habe nicht Geld mehr*. *Wie haben wir6 hrennred geschen*. *Es tund aus, als ob es regren word*. *Seren Sie das deus er schreiben well*. *Mein Stelm werd English an'men*. *Heben Sie Lest noch Hause gehen*.

6. How is the English Infinitive, used with an Accusative after the verbs to hear, to desire, to wish, etc., expressed in German? Translate: I know this your was to be honest and industrious. I wish you to read the history of England. Our tutor desires us to study the literature of Germany.

7. State in what form the Present part. must appear in German, when (1) used as a Substantive; (2) if it replaces a relative pronoun; (3) when depending upon another verb or noun; (4) when it expresses *cause* and *time*, &c. The reading of good books is necessary for young people. (*Laute*). A man doing good to everybody. You must continue studying German. Whining is no vice, I went to his house. Having smelled so long he was examined, *krutshigt*).

8. Translate into German: When Cortez returned to Spain, he was coolly (*kalt*) received by the emperor Charles V. One day he suddenly presented himself to the monarch. "Who are you," said the emperor haughtily, (*stolz*). "The man," said Cortez so haughtily, "who has given you more provinces, than your ancestors (*Vorfahren*) left you cities."