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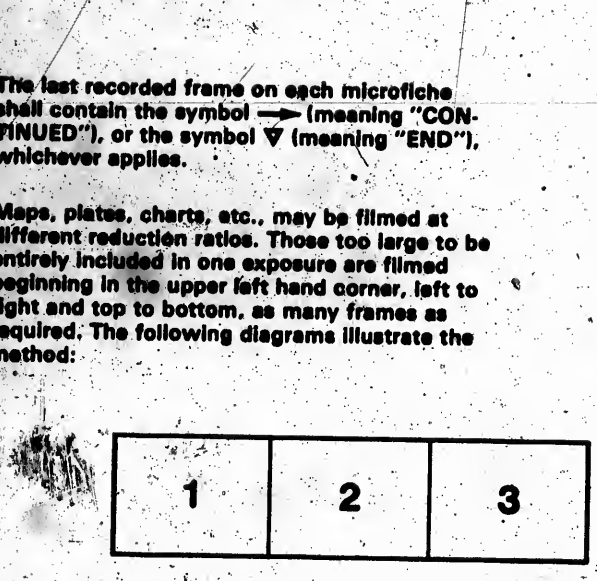

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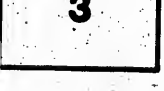

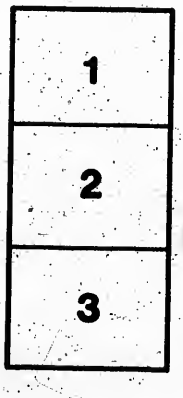

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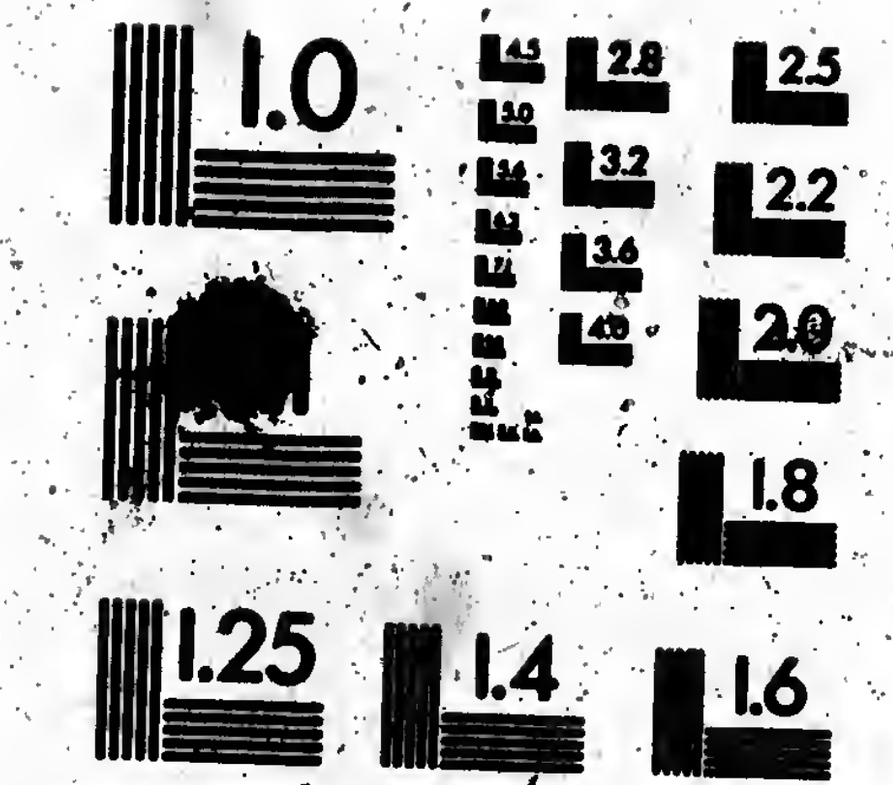

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BARRIE
Grammar School.

EXAMINATION PAPERS,

JUNE, 1861.

BARRIE

GRAMMAR SCHOOL,

EXAMINATION PAPERS, &c.

CONTENTS:

REPORT TO TRUSTEES.
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ANTIQUITIES.
FRENCH.
ENGLISH.
GEOGRAPHY.
HISTORY.
ARITHMETIC.
EUCLID.
ALGEBRA, No. 1.
" No. 2.
TRIGONOMETRY.
CHEMISTRY.
NATURAL HISTORY.

BARRIE:
PRINTED AT THE "NORTHERN ADVANCE" OFFICE.
1861.

TO THE BOARD OF TRUSTEES OF THE BARRIE GRAMMAR SCHOOL.

BARRIE GRAMMAR SCHOOL,
June 26th, 1861.

GENTLEMEN:

The time having again come round for my Annual Report, I am happy to be able to state that the School under my charge has continued to improve steadily in every respect.

The average daily attendance for the past twelve months has been 74. Of these 62 are Classical and 12 Commercial Pupils. The number learning Latin without French or Greek is 15; Latin, Greek and French, 47. The accompanying Examination Papers will give a tolerably correct idea of the present proficiency of our Senior Classes in each subject of study.

Since the date of my last Report eight pupils have matriculated at the University of Toronto. Of these, four obtained Scholarships, and First Class Honors were awarded to seven in more than one subject each. The eighth ranked in the second class. One pupil has also matriculated from this at Lennoxville, C. E.

Among those now with me, nine are preparing to enter the University during the present year. Two will matriculate at Trinity College, Toronto, and two at McGill College, Montreal, in the coming Fall.

I remain, Gentlemen,
Your obedient servant,

W. F. CHECKLEY,
Head Master.

TERMS AND VACATIONS.

"There shall be four Terms each year, to be designated the Winter, Spring, Summer and Autumn Terms. The Winter Term shall begin the 7th January, and end the Tuesday next before Easter, and close the last Friday in June; the Summer Term shall begin the second Monday in August, and end the Friday next before the 15th October; the Autumn Term shall begin the Monday following the close of the Summer Term, and shall end on the 22nd December."

[Extract from Rules for Grammar Schools, prescribed by Council of Public Instruction.]

BARRIE GRAMMAR SCHOOL,

(BOARDERS.)

Pupils.	*Parents or Guardians.*	*Ent'd.*
Anderson, Alex.....	J. Anderson, Esq., Ch. Factor, H.H.B. Com., Quebec.....	1858
Anderson, James....	do. do.	"
Anderson, Allan....	do. do.	"
Anderson, James....	Rev. S. B. Ardagh, M.A., Barrie.....	1861
Angel, H. V.....	Morris Seligman, Esq., Mercht., Charleston, S.C...	"
Armour, James.....	James Armour, Esq., La Salle, Illinois, U.S.....	1859
Ardagh, J.....	J. Ardagh, Esq., M.D., Orillia ?.....	1861
Arnold, J.....	Abner Arnold, Esq., Richmond Hill.....	
Astley, ...	Mrs. Astley, Shanty Bay.....	
Auston, James.....	— Auston, Esq., M.D., Cobourg.....	
Boyer, John.....	Rev. R. Boyer, M.A., Hillier.....	
Checkley, F..... ...	Rev. W. F. Checkley, B.A., T.C.D., Barrie..... .	1859
Checkley, J. Y.....	R. Checkley, Esq., M.D., St. Vincent, W.I.....	1860
Eastwood, A.....	A. Eastwood, Esq., Lloydtown.....	"
Falconbridge, W. G.	J. K. Falconbridge, Esq., Richmond Hill.....	"
Fletcher, J.....	Rev. J. Fletcher, Bradford.....	"
Flood, W. H.....	Rev. Richard Flood, Delaware, C.W.....	1859
Flood, C. J.....	do. do.	1861
Ford, O. P.....	D. B. O. Ford, Esq., Brockville.....	1859
Forlong, H.....	Mrs. Forlong, Toronto.....	1860
Forlong, A.....	do. do.	"
Gaviller, E. A.....	Alexander Gaviller, Esq., Bond Head.....	"
Hinds, R.	G. H. Low, Esq., M.D., M.R.I.A., Bowmanville...	"
Jones, A.....	R. Jones, Esq., Port Hope.....	1859
Meredith, H.....	H. Meredith, Esq., Port Hope.....	1858
McManus, G. C.....	G. McManus, Esq., Mono.....	"
McManus, R.....	do. do.	1861
McEwan, W. P.....	J. McEwan, Esq., Sheriff County Essex.....	1860
Myers, junr., A. H...	E. Myers, Esq., Trenton.....	"
Myers, W. F.....	do. do	"
Morgan J. C.....	Rev. E. Morgan, Assistant Minister, Barrie.....	1857
McTavish, D. C.....	Mrs. McTavish, Grafton.....	1860
Osler, H.....	Rev. H. B. Osler, Lloydtown.....	1859
Park, E.....	J. R. Park, Esq., Colchester.....	"
Reid, L. C.....	Mrs. Reid, Bowmanville.....	"
Ridout, D. C.....	T. G. Ridout, Esq., Toronto.....	1860
Russell, L.....	.....	1860
Stewart, C.....	Captain A. Stewart, R.N.....	1859
Taylor H.....	P. Taylor, Esq., Whitby.....	1860
Thomson, C. A.....	John Thomson, Esq., Orillia.....	1859
Thompson, X. B....	Alfred Thompson, Esq., Penetanguishene.....	1859
Tyrwhitt, J.....	Septimus Tyrwhitt, Esq., Middleton.....	1858
Tyrwhitt, R.....	do. do.	1861
Verhoff, J. C.....	.....Detroit.....	1860
Warren, F.....	J. B. Warren, Esq., Oshawa.....	1859
Warren, A.....	Wm. Warren, Esq., Whitby.....	1861
Ware, C.....	Mrs. Ware, Peterborough.....	1860
Wilkes, F. T.....	Judge Wilkes, Owen Sound.....	1861

Pupils.	*Parents or Guardians.*	*Left.*	*Ent'd.*
Armstrong, Thos...	Arthur Armstrong, Esq., Lloydtown.....	1858	1858
" J.....	do. do.	"	"
Burnett, Alex.....	.....		1859
Campbell, J.....	Mrs. Campbell, Pickering.....	1858	1858
Campbell, E.....	Wm. Campbell, Esq., Toronto	1860	1860
Currie Hugh	Hugh Currie, Esq., Nottawasaga.....	1858	1858
Cook, G.....	Thomas Cook, Esq., Cookstown..... ...	1860	1860
Duggan, G. F.....	Geo. Duggan, Esq., Recorder, Toronto....	1859	1858
Foster, E.....	Hon. S. B. Harrison, C.J., Toronto.....	1858	1857
Farewell, E. J.....	A. Farewell, Esq., Oshawa.....	1860	1859
Gamble, W	A. Gamble, Esq., Simcoe.....	1858	1858
Gaviller, M.....	A. Gaviller, Esq., Bond Head.....	1859	1858
" G	do. do.	1860	1858
Gordon, G.....	W. Gordon, Esq., Whitby.....	1859	1858
Gore, W. S	Mrs. Gore, Rice Lake.....	1859	1857
Griffin, H W.....	W. H. Griffin, Esq., Dy. P. M. Gen., Quebec	1859	1857
Harman, S. B.....	S. B. Harman, Esq., Barrister, Toronto....	1860	1858
Harman, G.....	do. do	"	"
Harman, W.....	do. do	"	"
Hervey, Alex.....	R. Hervey, Esq., Chicago.....	1858	1858
Heward, F.....	F. Heward, Esq., Toronto.....	1858	1857
Heward, B.....	do. do.	"	"
Hamilton, J.....	Wm. Hamilton, Esq., Toronto.....		1860
Howell, R	R. Howell, Esq., Barrie.....	1857	1857
Hunter, C.....	Mrs. Hunter, Oakland, Barrie..... ...	1860	1859
Lally, E.....	E. Lally, Esq., County Treasurer, Barrie..	1859	1858
Magrath, J. F.....	Colonel Magrath, Toronto	1859	1857
Milne, W.....	G. Milne, Esq., Pickering.....		1860
McIlvaine, W.....	.....	1857	1857
McKenzie, G. ...	W. L. McKenzie, M.P.P., Toronto.....	1858	1857
McKenzie, K.....	Barrie	1859	1859
McEwan, P. A.....	J. McEwan, Esq., Sheriff County Essex...	1860	1858
McManus, R.....	G. McManus, Esq., Mono	1858	1861
McIntosh, T.....	W. McIntosh, Esq., Newcastle.....	1860	1858
Norse, W.....	W. Corrigal, Cobourg.....	1860	1859
Osler, E.....	Rev. F. L. Osler, Dundas.....	1858	1858
Park, H.....	J. R. Park, Esq., Colchester.....	1860	1857
Perry, M.....	M Perry, Esq., Lloydtown.....	1858	1857
Ralston, C.....	Jas. Ralston, Esq., New York, U.S.....	1860	1859
Rawson C.....	C. Rawson, Esq., Shanty Bay.....	1860	1860
Reid, J.....	Mrs. Reid, Bowmanville.....	1859	1857
Robarts, W. P.....	T. P. Robarts, Esq., Quebec.....	1860	1858
Robertson, H.....	.....	1858	1857
Thorpe, J. L.....	J. L. Linton, Esq., Pickering.....	1860	1858

MASTERS.

HEAD MASTER:

Rev. W. F. Checkley, B.A., Trin. Coll., Dublin.

MATHEMATICAL MASTER:

Jas. Johnston, Esq.,

SECOND MATHEMATICAL MASTER:

John Magee, Esq., Scholar, University, Toronto.

ENGLISH MASTER:

Henry Reazin, Esq., Scholar, University, Toronto.

FRENCH MASTER:

Monsieur R. Cleri, late of the College of Avranches, France.

DRAWING AND WRITING MASTER:

J. C. Brathwaite, Esq.,

SPECIAL PRIZES

TO BE COMPETED FOR AT THE ANNUAL MIDSUMMER EXAMINATION.

CLASSICS.....Gold Medal

Subjects of Examination:

LATIN.	GREEK.
Sallust Catalina.	Xenophon's Anabasis, Book I.
Virgil Æneid, Books I, II.	Homer's Illiad, " I.
Horace Odes.	" Odyssey, " IX.
Latin Composition.	Greek Composition.

MODERN LANGUAGES.....Gold Medal.

Subjects of Examination:

ENGLISH.	FRENCH.
Fowler's English Grammar.	De Fivas' French Grammar.
Latham's Handbook of the English Language.	Montesquieu, Grandeur et Dècadence des Romains.
Trench's Study of Words.	Voltaire, Charles XII.
" English Past and Pres'nt	French Composition.
English Composition.	

Anderson's Geography.
White's English History.

MATHEMATICS.....Gold Medal.

Subjects of Examination:

Arithmetic.
Colenso's Algebra, Parts I. and II.
" Euclid, Book I.–VI. (with exercises.)
" Trigonometry, Part I.
Mechanics (Professor Cherriman's).

NATURAL SCIENCES.....An Achromatic Microscope.

Subjects of Examination:

Patterson's Zoology.
Agassiz and Gould's Comparative Physiology.
Gray's First Lessons in Botany.
Elements of Chemistry in Chambers' Educational Course.
Hitchcock's Elementary Geology.

SCHOLARSHIPS.

Names of those who Matriculated from this School, at the University of Toronto, during the year,

1858:

H. ROBERTSON obtained a Scholarship in Law.
T. KIRKLAND, " " in Mathematics.
F. H. C. BRATHWAITE, " " in Civil Engineering.

1859:

F. G. DUGGAN Matriculated in Law.
THOS. KIRKLAND passed first year's examination and obtained a Scholarship in Mathematics.
F. H. C. BRATHWAITE passed first year's examination in Civil Engineering, 1st class in Mathematics.
M. GAVILLER obtained a Scholarship in Engineering.
A. BURNETT, } Matriculated in Engineering, 1st Class in
W. S. GORE, } Mathematics.

Matriculated at M'Gill College at Montreal.

J. L. REID in Engineering.
F. H. C. BRATHWAITE in Medicine.

Names of those who passed the preliminary examination before the Board of Provincial Land Surveyors:

J. L. REID.....[Standing] First.
F. H. C. BRATHWAITE..... " First.

1859:

J. ARMSTRONG..... "

Matriculated in Medicine:

THOMAS ARMSTRONG.....Victoria College.

Passed the Entrance Examination before the Law Society:

H. ROBERTSON,.....E. LALLY,
G. LOUNT,.....E. J. FAREWELL.

Passed the Civil Service Examination:

H. W. GRIFFIN.

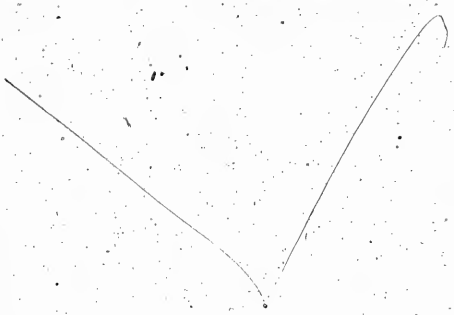
1860:

H. REAZIN passed first year's examination, and obtained a Scholarship in Agriculture.
J. MAGEE Matriculated in Arts, 1st Scholarship in Mathematics.
G. LOUNT, 2nd " "
B. IRWIN obtained a Scholarship in Engineering.
JNO. G. TIRRELL " Agriculture.
R. CLERI Matriculated in Arts, with First Class Honors in Modern Languages.
J. JOHNSTON " " " Mathematics.
W. MILNE " in Medicine.
PAT MCEWAN " in Arts, Second Class Honors.

BARRIE GRAMMAR SCHOOL.

EXAMINATION PAPERS,

JUNE, 1861.



GREEK.

Translate the following passage:

Ἡμεῖς τοι Τροίηθεν ἀποπλαγχθέντες Ἀχαιοὶ
παντοίοις ἀνέμοισιν ὑπὲρ μέγα λαῖτμα θαλάσσης,
οἴκαδε ἱέμενοι, ἄλλην ὁδόν, ἄλλα κέλευθα,
ἤλθομεν· οὕτω που Ζεὺς ἤθελε μητίσασθαι.
λαοὶ δ' Ἀτρείδεω Ἀγαμέμνονος εὐχόμεθ' εἶναι,
τοῦ δὴ νῦν γε μέγιστον ὑπουράνιον κλέος ἐστίν·
τόσσην γὰρ διέπερσε πόλιν, καὶ ἀπώλεσε λαοὺς
πολλούς· ἡμεῖς δ' αὖτε πτῳανόμενοι τὰ σὰ γοῦνα
ἱκόμεθ', εἴ τι πόροις ξεινήϊον, ἠὲ καὶ ἄλλως
δυίης δωτίνην ἥτε ξείνων θέμις ἐστίν.
ἀλλ' αἰδεῖο, φέριστε, θεούς· ἱκέται δέ τοί εἰμεν·
Ζεὺς δ' ἐπιτιμήτωρ ἱκετάων τε ξείνων τε,
ξείνιος, ὃς ξείνοισιν ἅμ' αἰδοίοισιν ὀπηδεῖ.
Ὣς ἐφάμην· ὁ δέ μ' αὐτίκ' ἀμείβετο νηλεῖ θυμῷ·
νήπιος εἰς, ὦ ξεῖν', ἢ τηλόθεν εἰληλουθας,
ὅς με θεοὺς κέλεαι ἢ δείδιμεν ἢ ἀλέασθαι·
οὐ γὰρ Κύκλωπες Διὸς αἰγιόχου ἀλέγουσιν,
οὐδὲ θεῶν μακάρων· ἐπιὴ πολὺ φέρτεροι εἰμεν.
οὐδ' ἂν ἐγὼ Διὸς ἔχθος ἀλευάμενος πεφιδοίμην
οὔτε σεῦ, οὔθ' ἑτάρων, εἰ μὴ θυμός με κελεύει.
ἀλλά μοι εἶφ', ὅπη ἔσχες ἰὼν εὐεργέα νῆα.
ἦ που ἐπ' ἐσχατιῆς, ἦ καὶ σχεδόν, ὄφρα δαείω.

ODYSSEY IX, 259—280.

1. Parse *ἀποπλαγχθέντες, ἱέμενοι εἰληλουθας, δειδίμεν, πεφιδοίμην.*
2. Give the derivations of *νηλεῖ, νήπιος, μακάρων σχεδὸν, κύκλωψ αἰγιόχον.*
3. *Ἡμεῖς τοι τροίηθεν.* Explain the use of *τοι.*
4. *ἱκόμεθ' ἔτι τε πορους.* Supply the ellipsis.
5. *ξεινήϊον.* Explain.
6. Distinguish between *λαὸς* and *δῆμος.*
7. Give the ordinary forms of the dialectic varieties in the above passage.
8. What difference between the Cyclopes of Homer and those of Virgil?

LATIN.

Translate the following passage:

Post ea mirabar, cur non sine litibus esset
  Prima dies. Causam percipe, Janus ait.
Tempora commisi nascentia rebus agendis,
  Totus ab auspicio ne foret annus iners.
Quisque suas artes ob idem delibat agendo,
  Nec plus quam solitum testificatur opus.
Mox ego: Cur, quamvis aliorum numina placem,
  Jane, Tibi primum tura merumque fero?
Ut possis aditum per me, qui limina servo,
  Ad quoscumque voles, inquit, habere deos.
At cur lacta tuis dicuntur verba Kalendis,
  Et damus alternas accipimusque preces?
Tum deus incumbens baculo, quem dextra gerebat,
  Omina principiis, inquit, inesse solent.
Ad primam vocem timidas advertitis aures,
  Et visam primum consulit augur avem.
Templa patent auresque deum, nec lingua caducas
  Concipit ulla preces, dictaque pondus habent.

Ovid Fasti i. 165—182.

1. Give the derivations of *iners, delibat, tura, Kalendis, augur, Fasti, templa.*
2. Give some account of the Roman Calendar. Express in Latin, August 9th, March 2nd, June 21st.
3. Give a sketch of the life of Ovid.

Translate the following passage:

Eadem Galli fatentur; ac Lentulum dissimulantem coarguunt, præter litteras, sermonibus, quos ille habere solitus erat: "ex libris Sibyllinis, regnum Romæ tribus Corneliis portendi: Cinnam atque Sullam antea; se tertium, cui fatum foret urbis potiri: præterea ab incenso Capitolio illum esse vigesimum annum, quem sæpe ex prodigiis haruspices respondissent bello civili cruentum fore." Igitur, perlectis litteris, cum prius omnes signa sua cognovissent, senatus decernit, "uti abdicato magistratu Lentulus, item ceteri in liberis custodiis haberentur."

Interea plebes, conjuratione patefacta, quæ primo, cupida rerum novarum, nimis bello favebat, mutata mente, Catilinæ consilia exsecrari, Ciceronem ad cœlum tollere: veluti ex servitute erepta, gaudium atque lætitiam agitabant. Namque alia belli facinora prædæ magis, quam detrimento fore; incendium vero crudele, immoderatum, ac sibi maxime calamitosum putabat; quippe cui omnes copiæ in usu quotidiano et cultu corporis erant. Post eum diem, quidam L. Tarquinius ad senatum adductus erat, quem ad Catilinam proficiscentem ex itinere retractum aiebant.

1. *Galli.* What modern countries were comprehended under the term *Gallia?*
2. *Ex libris Sibyllinis.* State what you know about them.
3. *Tribus Corneliis.* Distinguish between *nomen, cognomen, agnomen.*
4. Give sketches of the lives of *Sylla* and *Cicero.*
5. Distinguish between *plebs* and *populus, interea* and *interim, gaudium* and *lætitia, scio* and *cognosco.*
6. Explain the use and signification of *hic, iste, ille, is, quis, qui.*
7. Give the derivation of *Auspex, haruspex, calamitosus.*
8. *Post eum diem.* Illustrate this idiom.
9. *Liberis custodiis.* Explain.

ANTIQUITIES.

1. Give a brief sketch of the Spartan Constitution as esbtalished by Lycurgus.
2. Describe briefly the Spartan Army, as to its divisions, arms, &c., &c.
3. Explain the use of the *σκύταλη*.
4. Give an outline of the Athenian Constitution in the time of Solon.
5. What were the duties, and what the privileges of the *Μετοικοι* at Athens.
6. State what you know as to the objects of ostracism, the way in which it was carried out, and its effects.
7. Give some account of the division of the Romans by Servius Tullius into classes and centuries.
8. Explain fully the terms *coloniæ* and *municipia*.
9. What were the nature of the Agrarian Laws of Licinius and the Gracchi.
10. Explain the privileges *connubium* and *commercium*.
11. Give some account of the Roman Magistracy during the Republic.
12. Explain the terms *diminutio capitis, jus imaginum, vindicta prætoris*.

FRENCH.

I.

1. Explain the use of *avoir* and *être* as auxiliaries. Give examples of verbs which can be conjugated with both *avoir* and *être*, and explain their meaning when conjugated with each of these verbs.
2. Explain by examples the difference between *ployer* and *plier*, *vénimeux* and *vénéneux*, *consomner* and *consumer*, *à terre* and *par terre*, *repartir* and *répartir*, *à la campagne* and *en campagne*.
3. Translate the following sentences, and give rules for the use of *en*:
   (1) Ils en veulent à ma vie.
   (2) Il ne sait où il en est.
   (3) Nous nous sonimes promenés a n'en pouvoir plus.
   (4) Ils en sont venus aux mains.
4. How may *tel* be translated? How is it varied when it precedes a verb?
5. When do we use *dont*, and when *d'où*? Examples.
6. How does the past participle of a pronominal verb differ from any other? Construct sentences in which *se plaire*, *se nuire*, and *se suffire* will be used.
7. Is *que* always regime direct? If not, give examples in which it is indirect.
8. When are *si* and *aussi* to be used in expressing comparison? Name all the words by which a comparison may be made.
9. Correct the following sentences, if wrong, with reasons for such corrections:
   (1) La tassé de thé que j'ai pris m'a fait du bien.
   (2) Il faut réfléchir auparavant de parler.
   (3) L'homme d'un plomb mortel atteint cette aigle alfière.

II.

Translate into English:

Il n'attendait pour exécuter ses grands desseins que l'emploi de premier vizir, dont sa jeunesse l'ecartait encore. Dans cette idée, il avait plus besoin d'être l'allié que l'ennemi du czar, son intérêt ni sa volonté n'étaient pas de garder plus longtemps le roi de Suède, encore moins d'armer la Turquie en sa faveur.

Non seulement il voulait renvoyer ce prince, mais il disait ouvertment qu'il ne fallait plus souffrir désormais aucun ministre Chrétien à Constantinople, que tous ces ambassadeurs n'etaient que des espions honorables, qui corrompaient, ou qui trahissaient les vizirs, et donnaient depuis longtemps le mouvement aux intrigues de sérail; que les Francs, établis a Pera, et dans les échelles du Levant, sont des marchands qui n'ont besoin que d'un consul, et non d'un ambassadeur. Le grand vizir, qui devait son établissement, et sa vie même, au favori, et que de plus le craignait, se conformait à ses intentions d'autant plus aisément qu'il s'était vendu aux Muscovites, et qu'il espérait se venger du roi de Suède, qui avait voulait le perdre.—*Charles le Douze, page* 184.

1. How many meanings may be given to *ne que*, and how does each meaning affect the article?
2. *N'étaient pas de garder.* When may *pas* and *point* be suppressed, and when must they be suppressed? Explain the difference between "Cet enfant n'etudie pas," and "Cet enfant n'etude point."
3. *Aucun ministre.* When do *aucun* and *nul* take the mark of the plural, and when not?
4. *Ou.* Give examples of words which vary when they are accented.
5. *Qui devait.* In how many different ways may this verb be translated? Illustrate.

III.

Translate into English:

Ce n'est pas la fortune qui domine le monde; on peut le demander aux Romains, qui eurent une suite continuelle de prospérités quand ils se gouvernèrent sur un certain plan, et une suite non interrompue de revers lorsqu'ils se conduisirent sur un autre. Il y a des causes générals, soit morales, soit physiques, qui agissent dans chaque monarchie, l'élèvent, la maintiennent, ou la précipitent; tous les accidents sont soumis à ces causes; et si le hasard d'un battaille, cest-à-dire une cause particulière, a ruiné un Etat, il y avait un cause général qui faisait que cet Etat devait périr par une seule battaille. En un mot, l'allure principal entraîne avec elle tous les accidents particuliers.—*Montesquieu.*

1. *Le demander.* To what does *le* refer? Translate, Are you happy, madam? I am.
2. *Interrompue.* Why varied? Give the rules relating to past participles.
3. *Revers.* Form the plural of *genou, ail, havre-sac, sous-fermier.*
4. *Quils se conduisirent.* Give primitive tenses of *conduire, mourir, sourire, vivre, s'asseoir,* and *boire.*

5. When did Montesquieu write? and name other noted men who lived at the same time.

IV.

Translate into French—

It would be impossible to form a correct estimate of the power and resources of England, without taking into consideration her vast colonial empire, which forms her peculiar glory and distinguishes her from the other nations of modern Europe. What Greece was for the ancient world, England is to the modern. If we look back into antiquity, we shall find that it was the peculiar characteristic of the Greeks that they sought new settlements, not for the object of foreign conquest, but that they might transfer thither the laws and institutions of their native cities, and enjoy the blessings of freedom in a land less crowded than their own.

ENGLISH GRAMMAR.

1. Give the modifications of Nouns and Pronouns. Define each. How are they severally determined?

2. Classify Pronouns. What peculiarity in the formation of Compound Personal Pronouns? Distinguish between *my* and *mine*, *each* and *every*, *either* and *neither*, *each other* and *one another*, *who* and *whoever*.

3. The modifications of Verbs. Give examples of personal endings. In how many ways may a verb be conjugated? Conjugate the Verb *Do* in the future tense, explaining the use of shall and will.

4. PARSE:—Be sincere in all your words, and obliging in all your actions.

   What we know is nothing, but what we are ignorant of is immense.

5. CORRECT, WITH REASONS:—The Examination [illegible]ing, at which I will be sure of a prize, and so shall my brother; then comes the holidays and vacation, and when I am safely arrived at home, I intend doing my best to prevent letting any kind of amusement escape me.

HISTORY.

I.

1. The circumstances which give rise to each of the dynasties of England.
2. State what you known of the wars of the Roses.
3. Mention the principal wars and battles of England, since the Conquest, with dates. How did they affect the acquisition or loss of territory?

II.

4. The origin of the plebs. Sketch fully their struggles for equality, with dates and leading characters.
5. State what you know of the Punic wars.
6. Who and for what noted were (1) Pyrrhus, (2) Mithridates, (3) J. Cæsar, (4) Octavianus.

III.

7. Give a brief description of the geography of ancient Greece.
8. Give a brief outline of the Peloponesian war.
9. Mention the principal invasions of Greece by Persia, and of Persia by Greece, with the more important events commenced with each.

GEOGRAPHY.

1. Define the terms latitude, longitude, strait, roadside, zones, meridians, tropics.
2. Give the principal islands of (1) Asia, (2) Australasia, (3) Scotland, (4) Ireland.
3. Trace three of the principal rivers in each of the Continents, and in England, Ireland and Scotland.
4. Give the boundary of (1) Prussia, (2) Afghanistan, (3) Egypt, (4) Lincolnshire, (5) Sutherland, (6) Virginia, (7) Victoria, C. W.
5. The principal towns of Denmark with their positions.
6. The Counties of Connaught, and those of Scotland in the basin of the Forth, with their positions.
7. The Counties and County Towns of Canada West.
8. Give some account of the natural distribution of plants and animals.
9. Give the position of (1) Baltimore, (2) Harpers. Ferry, (3) Galveston, (4) Montgomery, (5) Birmingham, (6) Merthyr Tydvil, (7) Paisley, (8) Drogheda, (9) Frederickshal, (10) Gottenburg, (11) Helsingfor, (12) Dantzig, (13) Hamburg; (14) Toulouse, (15) Marseilles, (16) Stutgard, (17) Hainan; (18) Trinidad, (19) Society islands, (20) Charlotte Town.

ARITHMETIC.

1. How is our common decimal system of notation extended to fraction? In whole numbers, for every cypher added to the extreme right of the number its magnitude is increased ten-fold. Why is this not the case in Decimal Fractions? What change in the decimal increases its value tenfold?

2. Explain the Roman method of Notation. Express the numbers MMMDCCCLXXIV, and CCCIↃↃↃ in words.

3. Prove that

(1) $\dfrac{3.25+2\frac{1}{4}}{3\frac{1}{4}-2.25}=5\frac{1}{2}$ (2) $\dfrac{73.8\times 8\text{-}19 \text{ of } .0009747}{.0018}=6.3099$

4. Explain the methods by which (1) rectangular areas, (2) rectangular solids are measured. Illustrate with figures. If 1-12 inch be the unit of linear measurement how many square units are there in a square foot, and what number will represent the solid content of a piece of wood $\frac{5}{6}$ feet long, 2 in. wide, 3-5 in. thick.

5. Explain the meaning of the terms Ratio and Proportion. Show that if a proportion exists among four numbers taken in a certain order, it will also exist among the numbers taken in the contrary order.

6. A person takes 55 min. to walk from the Grammar School to the Station, and 29 min. 40 sec. to return by the boat, rowing twice as fast as he walks. The distance by the road is 3 miles; what is it by the Lake.

7. State clearly the distinction between Simple and Compound Interest. State and explain the Rule for Simple Interest. When the interest has to be calculated from a certain day to another day, how are the days reckoned?

(1) Find the Simple Interest and amount of $896.25 for 5 years, 9 months, and 18 days, at 7 per cent per annum.

(2) What sum of money at 6 per cent, Simple Interest, in $1\frac{1}{4}$ years, will amount to $455.55.

8. What is meant by Discount? Upon what principle ought ti to be calculated? Shew that the customary discount on

paying a bill some time before it is due, is greater than the true discount by the interest on this latter sum for that time. What are the true and customary discounts on a bill of £257 8s. 8¼d., paid 210 days before it is due, at 6 per cent. Give the result in dollars and cents.

9. Explain the following quotation from the London *Times*:—"Consols which left off on Saturday at 91¼ to ⅛, have ranged between 91 1-8 and 91⅛; the closing quotation is again 91¼ to ⅜. Bank Stock left off at 207½ to 209; Reduced 91 to ¼; new three per cents 91¼ to ⅜."

10. The population of three towns in Canada in the year 1850 were 2035, 4220, 5009, and in the year 1861 they had increased respectively 9, 10, and 12 per cent; find the average population of the three towns in 1861.

11. A boy must get ⅓ marks to pass this examination, he answers ¼ the questions, but to 5-6 of his answers gets on an average only 2-5 of the marks, and thus gets 25 marks, too few to pass. How many does he get altogether?

12. If the train did not stop on its way, it would come from Toronto to Barrie (62 miles) in 3 hours. If it stops at 5 Stations and loses 4 minutes at each; if also it only goes at half speed for the first 2 minutes after each start (not including the first) how long is it performing the distance.

ALGEBRA.

I.

1. Divide $1-x^n$ by $1-x$.

Expand $(1+x)\ (1+x^2)\ (1+x^4)\ (1+x^8)---(1+x^{2^r})$ in ascending powers of x.

2. Show how to find the least whole number which is accurately divisible by each of two given whole numbers.

Find the least number of ounces of standard gold that can be coined into an exact number of half sovereigns; standard gold being coined at the rate of £3 17s. 10½d., to an ounce.

3. Define a fraction, and from your definition prove a rule for adding together two fractions with different denominators.

Add together the fractions—

$$\frac{a^2-bc}{(a+b)\,(a+c)} \qquad \frac{b^2-ac}{(b+c)\,(b+a)} \qquad \frac{c_2-ab}{(c+a)\,(c+b)}$$

4. Prove a rule for extracting the square root of a compound Algebraical quantity.

Show that if—

$$x_4+ax_3+bx_2+cx+d$$

be a complete square, the coefficients satisfy the Equation

$$c^2-a^2d=0.$$

Is it necessary that the coefficients satisfy any other Equation?

5. Eliminate x, y, z, between the Equations

$$\frac{y}{z}+\frac{z}{y}=a, \qquad \frac{z}{x}+\frac{x}{z}=b, \qquad \frac{x}{y}+\frac{y}{x}=c.$$

6. Shew that a quadratic equation cannot have more than two roots, and solve the following equations:

(1) $\quad \frac{1}{2}\left(x-\frac{a}{3}\right)-\frac{1}{3}\left(x-\frac{a}{4}\right)+\frac{1}{4}\left(x-\frac{a}{5}\right)=0$

(2) $(x-1)(x-2)(x-3) - (6-1)(6-2)(6-3) = 0$

(3) $$\frac{x^2-a^2}{x^2+a^2} + \frac{x^2+a^2}{x^2-a^2} = \frac{34}{15}$$

(4 $$y+z = \frac{1}{x},\ z+x = \frac{1}{y},\ x+y = \frac{1}{z}$$

7. Find the sum of a series of quantities in geometrical progression.

Apply the result to find a common fraction equivalent to a recurring decimal fraction.

If a be the first and b the last of a series of n quantities in geometrical progression, prove that the continued product of the terms of the series is $(ab)^{\frac{n}{2}}$.

8. If $a, b, c,$ be a series of quantities, and x be a quantity depending on them in such a manner that x varies as a when the rest are constant, and that x varies as b when the rest are constant, and so on; shew that when they all vary, x varies as their product.

Apply this principle to the following case:—Assuming that the quantity of work done at a sitting varies as the cube root of the number of agents, when the time is the same, and varies as the square root of the time when the number of agents is the same; find how long three men would take to do one-fifth of the work which twenty-four men can do in twenty-five hours.

9. I leave the Barrie Station at 8.30 o'clock, p.m., and 10 min. after I meet the omnibus, which, after stopping 15 min. at the Sation, passes me again opposite Judge Gowan's, $2\frac{1}{2}$ miles from the Station, at 9.20 o'clock. Find the rate at which the omnibus travelled.

10. In the late boat race, when the boats turned at Fisherman's Point, I was $\frac{1}{4}$ of a mile on this side of it, and rowing in the direction of Barrie at the rate of 6 miles an hour. I observed one boat 30 yds. ahead of another, and on passing me the distance between them was diminished to 20 yds. The first boat is overtaken by the second opposite the teacher's boat house, a mile from the point. How long were they rowing from fisherman's point?

ALGEBRA.

II.

1. Find the number of permutations of n things taken r together.

There are n points in space, of which p are in one plane, and there is no other plane which contains more than three of them; how many planes are there, each of which contains three of the points?

2. Prove the Binomial Theorem for a positive integral value of the index.

Find an approximate value of $\sqrt[7]{108}$

3. Find an expression for the amount of a given sum of money, which has accumulated during a given number of years, at a given rate of compound interest.

If a sum of money, at a given rate of compound interest, accumulated to p-fold its original value in n years, and to p^1-fold in n^1 years, prove that

$$n^1 = n \log_p p^1.$$

4. A certain member of the Ministry receives $5000 per annum from the Government. His chance of being returned to Parliament at the coming election is as 6 to 9; his chance of remaining in office for four years is as 5 to 6; what is the value of his expectation?

5. A mortgage is drawn for ten years, bearing interest at 6 per cent., the person receiving the mortgage wishes to make 10 per cent; how much must be taken off the mortgage?

6. Shew that if

$$A+Bx+Cx^2+\text{---} = a+bx+Cx^2+\text{---}$$

for all values of x, and if the coefficients do not increase without limit,

$$A = a,\ B = b,\ C = c,\ \&c.$$

Find the sum of the series

$$1^2 \times 2^2 + 3^2 + \text{---} + n^2$$

7. Prove that the sum of the product of the first n natural numbers, taken two and two together, is

$$\frac{(n-1)\,n\,(n+1)\,(3n+2)}{24}$$

8. Shew that the sum of all the harmonic means, which can be inserted between all the pairs of numbers, the sum of which is n, is

$$\tfrac{1}{4}(n^2-1)$$

9. Define the terms convergent and divergent, when applied to a series of quantities real or imaginary.

Investigate a rule which is ordinarily sufficient to ascertain whether a series is or is not convergent.

Are the following series convergent?

(1) $$\frac{3}{2}x-\frac{5}{5}x^2+\frac{7}{10}x^3+\frac{9}{17}x^4+\cdots\frac{2n+1}{n^2+1}x^n\cdots$$

where x is real.

$$1+\frac{n}{\lfloor 1}x+\frac{n(n-1)}{\lfloor 2}x^2+\cdots\cdots+\frac{n(n-1)\cdots(n-x+1)}{\lfloor x}x^x+\cdots$$

when x is less than 1.

EUCLID.

1. What objections have been urged against the doctrine of parallel straight lines, as it is laid down by Euclid? Where does the difficulty originate, and what has been suggested to remove it?

2. State the 12th Axiom. In some treatises on Geometry it is laid down as an axion more evident than Euclid's 12th, that two straight lines which cut one another cannot both be parallel to the same straight line. Show that is only a disguise of Euclid's Axiom.

3. The opposite sides and angles of parallelograms are equal to one another; and the diameter bisects them.

   If the opposite sides or the opposite angles of any quadrilateral figure be equal, or if its diagonals bisect one another, the quadrilateral is a parallelogram.

4. The complements of parallelograms which are about the diameter of any parallelogram, are equal to one another.

   If K be the common angular point of three parallelograms, and BD the other diameter, the difference of the parallelograms is equal to twice the triangle BKD.

5. In any right angled triangle, the square described upon the side subtending the right angle is equal to the squares described on the sides which contain the right angle.

   If ABC be a triangle whose angle A is a right angle, and BE, CF be drawn, bisecting the opposite sides respectively, shew that four times the sum of the squares of BE and CF is equal to five times the square of BC.

6. Divide a straight line into two parts, so that the rectangle contained by the whole and one of the parts shall be equal to the square of the other part.

   Shew that in Euclid's figure four other lines, beside the given ones, are divided in the required manner.

   Also produce a given straight line to a point such that the rectangle contained by the whole line and one of the parts, shall be equal the square of the given straight line.

7. Describe a square which shall be equal to a given rectangle.
   Given, a square, and one side of a rectangle which is equal to the square; find the other side.

8. The opposite angles of any quadrilateral figure inscribed in a circle are together equal to two right angles.

Prove also that the sum of the angles in the four segments of the circle exterior to the quadrilateral is equal to six right angles.

9. Cut off a segment from a given circle which shall contain an angle equal to a given rectilineal angle.

Divide a circle into two segments, such that the angle in one of them shall be five times the angle in the other.

10. Describe an isosceles triangle having each of the angles at the base double of the third angle.

If A be the vertex, and BD the base of the constructed triangle, D being one of the points of intersection of the two circles employed in the construction, and E the other, and AE be drawn, meeting BD produced in F, prove that EAB is another isosceles triangle of the same kind.

11. The sides about the equal angles of equiangular triangles are proportionals, and those sides which are opposite to the equal angles are homologous.

Apply this proposition to prove that the rectangle contained by the segments of any chord passing through a given point within a circle is constant.

TRIGONOMETRY.

1. Define accurately the units employed when angles are expressed in degrees, and in circular measure. If A and θ represent the same angle, expressed in terms of these units: find an equation connecting A and θ.

2. Define the terms "sine," "cosine," "tangent," and "secant," and trace the changes in sign and magnitude, as the angle increases from 135° to 405°.

Construct the angle whose tangent is $3-\sqrt{2}$

3. Prove that $\sin(A+B) = \sin A \cos B + \cos A \sin B$, and deduce a similar expression for $\cos(A+B)$.

If $a \tan A + b \tan B = (a+b) \tan \frac{A+B}{2}$, shew that $\frac{a}{b} = \frac{\cos A}{\cos B}$

4. If $A+B+C = 180°$, prove that

$$\tan A + \tan B + \tan C = \tan A \tan B \tan C$$

If α, β, γ, denote the distances from the angular points of a triangle to the points of contact of the inscribed circle, shew that the radius of the inscribed circle

$$= \left(\frac{\alpha\beta\gamma}{\alpha+\beta+\gamma}\right)^{\frac{1}{2}}$$

5. Prove that the sines of the the angles of a triangle are proportional to the opposite sides.

Hence deduce the expression for the cosine of an angle in terms of its sides.

6. If a, b, and B be given, shew under what circumstances there will be two triangles satisfying the condition of the problem.

Prove that the circles circumscribing both triangles are equal in magnitude, and that the distance between the centres is

$$\sqrt{(b^2 \cos^2 B - a^2}$$

7. Two sides and the included angle of a triangle being given; shew how to find the remaining angles.

The ratio of two sides of a triangle is 9 : 7, and the included angle is 47° 25′, find the other angles.

Given, log 2 = .3010300

L tan 66° 17′ 30″ = 10.3523942

L tan 15° 53′ = 9.4541489

diff. 1^1 = 4797

8. Standing at the Head Master's residence, the height of which is 92 feet above the Lake I observe the angular elevation of a cloud to be 75°, and the angular depression of its reflection in the Lake to be 30°; find the height of the cloud.

PRACTICAL SURVEYING AND USE OF INSTRUMENTS.

1. Describe the Theodolite and Gunter's Chain.
2. Find by the Theodolite and Chain, the distance of the Station from the Head Master's boat house; also the distance of the Station from Tollendal.
3. From the gate leading into the Head Master's grounds observe the angle of elevation of the flagstaff on the summit of the hill; go 60 feet nearer, and again observe the angle of elevation. Given the height of the flagstaff to be 60 feet, find the inclination of the hill to the horizon.
4. Find the area of the School grounds.

CHEMISTRY.

1. What is meant by a chemical element? Classify the elements as solids, liquids and gases.

2. What is the nature of chemical affinity? Give an example of double decomposition.

3. Explain the terms, protoxide, peroxide, binoxide and dentonide, with examples.

4. The properties of an acid, a base and a salt. Distinguish between oxacids and hydracids, oxysalts and true salts.

5. Give the composition of the atmosphere by weight and by measure. Mention some of its properties and uses.

6. How is the specific gravity of solids, liquids and gases ascertained? A metal weighs oz. 64.5 in air, and oz. 61.5 in water, required its specific gravity. What is the metal?

7. Give the preparation and properties of oxygen, chlorine, phosphorous.

8. Give the composition of marble, clay, alum, starch acelic, acid, chloroform, gunpowder and olifiant gas.

9. What are:—ClO^{7}, CaF, AsO^{3}, Hs, $CaOHO^{'}$

10 The chemical changes that occur in the processes of bread and soap making and the slaking of lime.

NATURAL HISTORY.

1. State generally the uses of the different parts of a plant.
2. The use and position of the Albumen. The variety and position of buds.
3. Name some of the different forms under which stems and branches occur.
4. Give the parts of a flower. What are double flowers? The morphology of the receptacle.
5. The different methods of propagating plants, and the principles involved in them.
6. Give a brief outline of botanical classification.
7. The Nature of the animal tissues.
8. Compare the nervous systems of the different sub-kingdoms.
9. Give the structure of simple and compound eyes.
10. Give some examples of metamorphoses, and of alternate generation.
11. The varieties in the structure of the molar teeth.
12. In what class and order would you place the following:—Sloth, horse, ground-hog, whale, salmon, flamingo, whip-poor-will, mosquito, oyster, tape-worm.

TORY.

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