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TASMANIA.
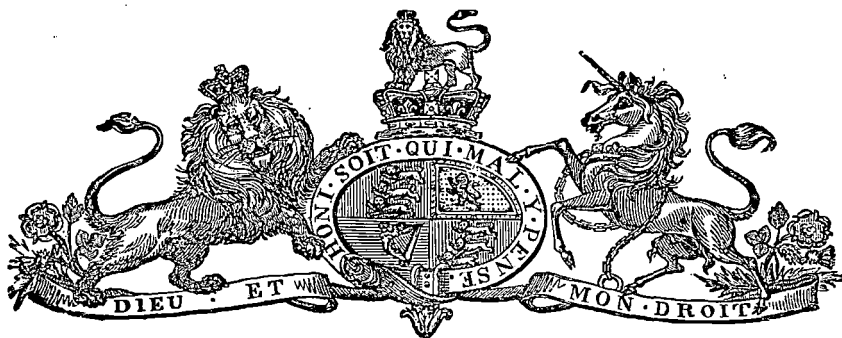
TASMANIAN SCHOLARSHIPS.

REPORT OF THE EXAMINERS.

Laid upon the Table by Mr. Innes, and ordered by the House to be printed,
7 January, 1862.

REPORT

EXAMINERS FOR THE TASMANIAN SCHOLARSHIPS.

MR. PRESIDENT AND GENTLEMEN.

We have the honor to report to you that we have completed our Examination of the Candidates for the Tasmanian Scholarships.

The Examination occupied six days, commencing on the morning of Monday, the 16th September, and closing on the morning of Saturday, the 21st September.

Before entering upon it, we found that the Council had not fixed any definite "standard of proficiency," by which the attainments of Candidates should be measured. Feeling it to be indispensably necessary that some standard should be fixed before the commencement of the Examination, our first act was to suggest to the Council the following outline :—

See Appendix, page 23.

> The three branches of the Examination,—(1) Classics, (2) Mathematics, (including Natural Philosophy), (3) Modern Languages and History,—being valued in the proportion of 10, 10, and 5, it shall be a condition of success that a Candidate gain at least three-fifths of full Marks, either in Classics or in Mathematics, and that he add to this an equivalent number of marks, gained from all sources.

The reasons upon which this suggestion was founded, need not be here repeated. It is sufficient to say that it was adopted by the Council, and became the rule for our guidance.

The standard thus fixed was not nearly attained by either of the two Candidates who presented themselves for examination, as will be seen from the subjoined table of Marks :—

	Full Marks.	"Excelsior."	"Fides."
Classics	1500*	577	647
Mathematics	1500†	417	132
Modern Languages and History	750	364	361
TOTALS.............	3750	1358	1140

We are, therefore, unable to recommend the Council to award a Scholarship to either of the Candidates ; and, even had the standard been considerably lower, the result must have been the same.

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* Or 1400, if the value of Verse Composition papers be deducted.

† Or 1050, if the value of papers in Differential and Integral Calculus, and Analytical Statics be deducted.

However much this is to be regretted, yet it must be borne in mind that a more lenient judgment would sooner or later have been followed by inevitable disappointment to the Candidates, to the Council, and to the Colony. The present Candidates, in their existing state of preparation, could not enter an English University on an equal footing with young men from the leading public Schools. Yet the chosen Tasmanian Scholar ought to be able to do this. It would be only a mortification for him to be sent home with the *eclat* of his Scholarship, and then to be left far behind in the Academic race. The conclusion at which we have arrived will at least avert this mortification ; and, so regarded, can hardly be considered a disappointment. All that it pronounces is, that more time must be given to the Candidates' preparation before their election can be safely made. The high honor designed for them is, we trust, only deferred for a time, not forfeited.

Signed on behalf of the Examiners,

F. H. COX, *B.A.*

23rd September, 1861.

THE experience of this Examination induces us to offer the following suggestions for the consideration of the Council.

1. As regards the list of Books and subjects prescribed for classical study, we would suggest, that, as the standard now adopted allows a Candidate to throw his main strength into this branch of the Examination, composition in verse should be no less an essential than composition in prose. It would be required of every boy at the head of a Public School in England, and should be required of the *Classical* scholar of Tasmania. The Mathematician would have his compensating advantage in his own line of study.

In the selection of Greek and Latin authors, we would recommend that the programme of every year include some, and some only, of the books of the previous year.

2. The list of Mathematical subjects we should desire to see considerably reduced. Differential and Integral Calculus, and Analytical Statics, are not ordinarily read by first-year men at Cambridge, and need not be included in the Council's List. This List, as it stands at present, rather tends to distract the attention of a Candidate, than to promote sound knowledge. Supposing it to be abridged in the manner suggested, the subjects that will remain will be amply sufficient to give scope to mathematical talent, at the same time that they will afford a solid ground-work for further study.

3. It is desirable that text-books be prescribed for Modern History, and for the study of the English Language. And for the latter, in addition to one or two Manuals in Philology, (such as Trench's "English Past and Present," and English Synonyms,") we would suggest that an *English Classic*, say for example a Book of the Paradise Lost, or a Play of Shakspeare, should be prescribed for *critical study*.

Signed on behalf of the Examiners,

F. H. COX, *B.A.*

DIRECTIONS TO CANDIDATES.

I. Look carefully at the annexed Time Table, in which the hours are fixed for the subjects of Examination on each day, and always *be at your seat in the Examination Room five minutes before the time.*

II. When the Questions are given you, read them over carefully, and *mark those which you think you can answer best; and do them first.* If, after that, you still have time to spare, try some of the others.

III. Before you begin to write your answers, insert in the blank spaces at the top of your paper,—

    1. The *motto* by which you are known in the Examination.

    2. The *subject* in which the questions are set which you are about to answer.

    3. The number of the question. Not more than one question is to be answered on each sheet.

IV. In writing your answers,—Write only on the ruled side of the paper.

V. As soon as notice is given, (which will be five minutes before the end of the time), finish your papers, and see that they are numbered rightly, and in their proper order.

VI. You are not to leave the Room until the Examination is closed, except by special permission of the Examiners.

N.B.—Candidates are strictly forbidden to communicate with one another during the Examination. Any Candidate taking an unfair advantage will be dismissed from the Examination.

[TIME TABLE—OVER.]

EXAMINATION *for the* Tasmanian Scholarships,—September, 1861.

TIME TABLE.

Monday, 16 September.	Tuesday, 17 September.	Wednesday, 18 September.	Thursday, 19 September.	Friday, 20 September.	Saturday, 21 September.
9 A.M. *to* NOON. LATIN. TRANSLATIONS.	9 A.M. *to* NOON. GREEK. TRANSLATIONS.	9 A.M. *to* NOON. ARITHMETIC AND ALGEBRA.	9 A.M. *to* NOON. ELEMENTARY MECHANICS.	9 A.M. *to* NOON. FRENCH.	2 P.M. *to* 5 P.M. LATIN COMPOSITION.
2 P.M. *to* 5 P.M. LATIN. QUESTIONS.	2 P.M. *to* 5 P.M. GREEK. QUESTIONS.	2 P.M. *to* 5 P.M. EUCLID AND TRIGONOMETRY.	2 P.M. *to* 5 P.M. HIGHER MECHANICS.	2 P.M. *to* 5 P.M. HIGHER MATHEMATICS.	1 P.M. *to* 4 P.M. GREEK COMPOSITION.
7 P.M. *to* 9 P.M. MODERN HISTORY.			7 P.M. *to* 9 P.M. ENGLISH LANGUAGE.		

M. H. IRVING, *M.A.*,
F. H. COX, *B.A.*,
FR. HARTWELL HENSLOWE. } *Examiners.*

TASMANIAN COUNCIL OF EDUCATION.

EXAMINATION FOR THE TASMANIAN SCHOLARSHIPS.—SEPTEMBER, 1861.

Latin.—I.

MONDAY, 16TH SEPTEMBER, 1861.   9 A.M. *to* NOON.

1. Translate—

"Fumus ex incendiis villarum agrorumque in oculos atque ora venit; strepunt aures clamoribus plorantium sociorum, saepius nos quam deorum invocantium opem. Nos hic pecorum modo per aestivos saltus deviasque calles exercitum ducimus, conditi nubibus silvisque. Si hoc modo peragrando cacumina saltusque M. Furius recipere a Gallis urbem voluisset, quo hic novus Camillus, nobis dictator unicus in rebus affectis quaesitus, Italiam ab Hannibale recuperare parat, Gallorum Roma esset; quam vereor ne, sic cunctantibus nobis, Hannibali ac Poenis totiens servaverint majores nostri. Sed vir ac vere Romanus, quo die dictatorem eum ex auctoritate Patrum jussuque populi dictum Veios allatum est, cum esset satis altum Janiculum ubi sedens prospectaret hostem, descendit in aequum, atque illo ipso die media in urbe, qua nunc busta Gallica sunt, et postero die citra Gabios cecidit Gallorum legiones. Quid? post multos annos cum ad Furculas Caudinas ab Samnite hoste sub jugum missi sumus, utrum tandem L. Papirius Cursor juga Samnii perlustrando, an Luceriam premendo obsidendoque et lacessendo victorem hostem, depulsum ab Romanis cervicibus jugum superbo Samniti imposuit? Modo C. Lutatio quae alia res quam celeritas victoriam dedit? Quod postero die quam hostem vidit, classem gravem commeatibus, impeditam suomet ipsam instrumento atque apparatu, oppressit. Stultitia est sedendo aut votis debellari credere posse. Armari copias oportet deducendas in aequum, ut vir cum viro congrediaris. Audendo atque agendo res Romana crevit, non his segnibus consiliis, quae timidi cauta vocant."

2. Translate—

"Exponam enim vobis, Quirites, ex quibus generibus hominum istae copiae comparentur: deinde singulis medicinam consilii atque orationis meae, si quam potero, afferam. Unum genus est eorum, qui magno in aere alieno, majores etiam possessiones habent: quarum amore adducti, dissolvi nullo modo possunt. Horum hominum species est honestissima, (sunt enim locupletes); voluntas vero et causa impudentissima. Tu agris, tu aedificiis, tu argento, tu familia, tu rebus omnibus ornatus et copiosus sis : et dubites aliquid de possessione detrahere, ac fidem acquirere? Quid enim expectas? bellum? quid! ergo in vastatione omnium, tuas possessiones sacrosanctas futuras putas? an tabulas novas? errant, qui istas a Catilina expectant. Meo beneficio tabulae novae proferentur, verum auctionariae. Neque enim isti, qui possessiones habent, alia ratione ulla salvi esse possunt. Quod si maturius facere voluissent, neque (id quod stultissimum est) certare cum usuris fructibus praediorum ; et locupletioribus his et melioribus civibus uteremur. Sed hosce homines minime puto pertimescendos, quod aut deduci de sententia possunt; aut, si permanebunt, magis mihi videntur vota facturi contra rempublicam, quam arma laturi."

3. Decrevit senatus ut consul videret, ne quid respublica detrimenti caperet. What was the meaning and the effect of this step?

4. Translate—

Festino ad nostros, et regem transeo Ponti,
Et Croesum, quem vox justi facunda Solonis
Respicere ad longae jussit spatia ultima vitae.
Exsilium, et carcer, Minturnarumque paludes,
Et mendicatus victa Carthagine panis,
Hinc causas habuere. Quid illo cive tulisset
Natura in terris, quid Roma beatius unquam,
Si circumducto captivorum agmine et omni
Bellorum pompa, animam exhalasset opimam,
Quum de Teutonico vellet descendere curru?
Provida Pompeio dederat Campania febres
Optandas : sed multae urbes et publica vota
Vicerunt. Igitur Fortuna ipsius et Urbis
Servatum victo caput abstulit. Hoc cruciatu
Lentulus, hac poena caruit ceciditque Cethegus
Integer, et jacuit Catilina cadavere toto.

5. Explain briefly, with dates, the historical allusions in the above.

6. Translate—

> Miserarum est neque amori dare ludum neque dulci
> Mala vino lavere aut exanimari metuentes
>   Patruæ verbera linguæ.
> Tibi qualum Cythereæ puer ales, tibi telas
> Operosæque Minervæ studium aufert, Neobule,
>   Liparæi nitor Hebri,
> Simul unctos Tiberinis humeros lavit in undis,
> Eques ipso melior Bellerophonte, neque pugno
>   Neque segni pede victus ;
> Catus idem per apertum fugientes agitato
> Grege cervos jaculari et celer alto latitantem
>   Fruticeto excipere aprum.

7. Translate—

> Musis amicus tristitiam et metus
> Tradam protervis in mare Creticum
>   Portare ventis, queis sub Arcto
>   Rex gelidæ metuatur oræ,
> Quid Tiridatem terreat, unice
> Securus. O, quæ fontibus integris
>   Gaudes, apricos necte flores,
>   Necte meo Lamiæ coronam,
> Pimplea dulcis ! Nil sine te mei
> Prosunt honores : hunc fidibus novis,
>   Hunc Lesbio sacrare plectro
>   Teque tuasque decet sorores.

8. Explain the historical allusions in this Ode.

9. Translate—

> " O nate, ingentem luctum ne quære tuorum ;
> Ostendent terris hunc tantum fata, neque ultra
> Esse sinent. Nimium vobis Romana propago
> Visa potens, Superi, propria hæc si dona fuissent.
> Quantos ille virum magnam Mavortis ad urbem
> Campus aget gemitus ! vel quæ, Tiberine, videbis
> Funera, quum tumulum præterlabere recentem !
> Nec puer Iliaca quisquam de gente Latinos
> In tantum spe tollet avos ; nec Romula quondam
> Ullo se tantum tellus jactabit alumno.
> Heu pietas, heu prisca fides, invictaque bello
> Dextera ! non illi se quisquam impune tulisset
> Obvius armato, seu quum pedes iret in hostem,
> Seu spumantis equi foderet calcaribus armos.
> Heu miserande puer ! si qua fata aspera rumpas,
> Tu Marcellus eris. Manibus date lilia plenis :
> Purpureos spargam flores, animamque nepotis
> His saltem accumulem donis, et fungar inani
> Munere."

𝕷𝖆𝖙𝖎𝖓,—II.

MONDAY, 16TH SEPTEMBER, 1861. 2 *to* 5 P.M.

1. Give the derivation and the meanings of the following words, and notice anything peculiar in the form of any of them :— Stipendium, alumnus, antidea, alienigena, nudiustertius, decoctor, cœnacula, induperator, exilis, retrorsum, adorea, latebrosus, rostrum, ambages, acies, immanis.

2. Translate and write brief critical notes in illustration of the following :—(1.) Omnes velut dîs auctoribus in suam quisque spem acceptis, prœlium poscunt. (2.) Creditur olim velificatus Athos. (3.) Velox amœnum sæpe Lucretilem mutat Lycæo Faunus. (4.) Desine mollium tandem querelarum. (5.) Cœlo educere certant. (6.) Ævi maturus Acestes. (7.) Anguis septena volumina traxit. (8.) Obloquitur numeris septem discrimina vocum.

3. Translate and explain,—(1.) Socium nominis Latini viginti millia. (2.) Lanium fuisse ferunt, ipsum institorem mercis. (3.) Qui eos magistratus gesserant unde in senatum legi deberent. (4.) Legum æra liquefacta. (5.) Se esse tertium illum Cornelium. (6.) Manicatæ et talares tunicæ. (7.) Turba certat tergeminis tollere honoribus. (8.) Inane lymphæ dolium fundo pereuntis imo.

4. What is the meaning of the following words or phrases? Quote, if you can, passages illustrative of them :—(1.) Capitis deminuti. (2.) Togatus. (3.) Domus veteres imitata Sabinos. (4.) Dædaleo ocior Icaro. (5.) Murex Afer. (6.) Clavi trabales. (7.) Elea palma. (8.) Platanus cœlebs.

5. What were the customs to which allusion is made in the following :—(1.) Genua incerare deorum. (2.) Fumum bibere instituta. (3.) Incisa notis marmora publicis. (4.) Tam dextro pede concipis.

6. Distinguish the meaning of the following words according to the quantity of the vowels : (1.) Nata. (2.) Avis. (3.) Levis. (4.) Comis. (5.) Mala. (6.) Nota.

7. Mention six Greek words employed by Horace or Juvenal, with their meanings and derivations.

8. Draw a map of Italy, marking the leading divisions, and the following towns, mountains, and rivers :—Cannæ, Rome, Tarentum, Capua, Ariminum, Bάiæ, Tibur, Garganus, Lucretilis, Janiculum, Vesuvius, Apennines, Aufidus, Eridanus, Ticinus, Liris, Tiber, Anio.

9. At what dates were the Orations against Catiline respectively delivered, and what was the object of each of them?

10. A.d. xii. Calendas Novembris. Explain the method of dating the days of the month adopted by the Romans.

11. Scan the following lines and say of what metrical system each forms a part, and give its technical name :—
Te deos oro Sybarin cur properas amando.
Funditus imprimeretque muris.
Marisque Baiis obstrepentis urges.
Miserarum est, neque amori dare ludum, neque dulci.

12. What are the principal senses of "qui" with the subjunctive in Latin.

13. Mention the more common methods of forming derivative adverbs.

14. When "an" introduces a single interrogation, what force has it? Quote examples to illustrate your answer.

15. "Iracundior" may be translated "too passionate" or "somewhat passionate." Explain how the comparative from its original meaning attains these two different senses.

Modern History.

MONDAY, 16TH SEPTEMBER, 1861. 7 *to* 9 P.M.

1. Give a brief outline sketch of the career of Napoleon Bonaparte from his appointment as General of the Army of Italy to his death.

2. Give some account, with dates, of the " Seven Years' War."

3. Give an account of the Revolution in America, from the passing of the Stamp Act to the peace made at Paris.

4. What are the principal provisions of the Bill of Rights? When was it passed, and by what Act subsequently supplemented?

5. Give a brief account, with dates, of the following :—

    1. The Massacre of Glencoe.
    2. The South Sea Bubble.
    3. The Introduction of the New Style into England.
    4. The Pragmatic Sanction.

6. Give some account, with dates, of the following publications :—

    1. The Drapier's Letters.
    2. Junius' Letters.
    3. The North Briton, No. 45.
    4. Sacheverell's Sermon.

7. When, by whom, and under what circumstances, were the following battles fought :—Plassy, Ramillies, Heights of Abraham, Peterwaradin, Pultowa, Bhurtpore.

8. Give some account, with dates, of the following persons :—Anson, Alberoni, Defoe, Hyder Ali, Johnson, Newton, Pope, Tillotson, Voltaire, Wellington.

Greek.—I.

TUESDAY, 17TH SEPTEMBER, 1861.   9 A.M. *to* NOON.

1. Translate—

> ἀλλ' ἡ τέκνων δῆτ' ὄψις ἦν ἐφίμερος,
> βλαστοῦσ' ὅπως ἔβλαστε, προσλεύσσειν ἐμοί.
> οὐ δῆτα τοῖς γ' ἐμοῖσιν ὀφθαλμοῖς ποτέ·
> οὐδ' ἄστυ γ', οὐδὲ πύργος, οὐδὲ δαιμόνων
> ἀγάλμαθ' ἱρά, τῶν ὁ παντλήμων ἐγώ
> κάλλιστ' ἀνὴρ εἷς ἔν γε ταῖς Θήβαις τραφεὶς
> ἀπεστέρησ' ἐμαυτόν, αὐτὸς ἐννέπων
> ὠθεῖν ἅπαντας, τὸν ἀσεβῆ, τὸν ἐκ θεῶν
> φανέντ' ἄναγνον καὶ γένους τοῦ Λαΐου.
> τοιάνδ' ἐγὼ κηλῖδα μηνύσας ἐμὴν
> ὀρθοῖς ἔμελλον ὄμμασιν τούτους ὁρᾶν;
> ἥκιστά γ'· ἀλλ' εἰ τῆς ἀκουούσης ἔτ' ἦν
> πηγῆς δι' ὤτων φραγμός, οὐκ ἂν ἐσχόμην
> τὸ μἀποκλῆσαι τοὐμὸν ἄθλιον δέμας,
> ἵν' ἦ τυφλός τε καὶ κλύων μηδέν· τὸ γὰρ
> τὴν φροντίδ' ἔξω τῶν κακῶν οἰκεῖν γλυκύ.
> ἰὼ Κιθαιρών, τί μ' ἐδέχου; τί μ' οὐ λαβὼν
> ἔκτεινας εὐθύς, ὡς ἔδειξα μήποτε
> ἐμαυτὸν ἀνθρώποισιν ἔνθεν ἦ γεγώς;
> ὦ Πόλυβε καὶ Κόρινθε καὶ τὰ πάτρια
> λόγῳ παλαιὰ δώμαθ', οἷον ἄρά με
> κάλλος κακῶν ὕπουλον ἐξεθρέψατε.

2. Translate—

> εἴ μοι ξυνείη φέροντι   στρ. ά.
> μοῖρα τὰν εὔσεπτον ἁγνείαν λόγων
> ἔργων τε πάντων, ὧν νόμοι πρόκεινται
> ὑψίποδες, οὐρανίαν
> δι' αἰθέρα τεκνωθέντες, ὧν Ὄλυμπος
> πατὴρ μόνος, οὐδέ νιν
> θνατὰ φύσις ἀνέρων
> ἔτικτεν, οὐδὲ μήν ποτε λάθα κατακοιμάσει·
> μέγας ἐν τούτοις θεός, οὐδὲ γηράσκει.
> ὕβρις φυτεύει τύραννον·   ἀντ. ά.
> ὕβρις, εἰ πολλῶν ὑπερπλησθῇ μάταν,
> ἃ μὴ 'πίκαιρα μηδὲ συμφέροντα,
> ἀκρότατον εἰσαναβᾶσ'
> * * ἀπότομον ὤρουσεν εἰς ἀνάγκαν,
> ἔνθ' οὐ ποδὶ χρησίμῳ
> χρῆται. τὸ καλῶς δ' ἔχον
> πόλει πάλαισμα μήποτε λῦσαι θεὸν αἰτοῦμαι.
> θεὸν οὐ λήξω ποτὲ προστάταν ἴσχων.

3. Translate—

> "Οἰνοβαρές, κυνὸς ὄμματ' ἔχων, κραδίην δ' ἐλάφοιο,
> Οὔτε ποτ' ἐς πόλεμον ἅμα λαῷ θωρηχθῆναι
> Οὔτε λόχονδ' ἰέναι σὺν ἀριστήεσσιν Ἀχαιῶν
> Τέτληκας θυμῷ· τὸ δέ τοι κὴρ εἴδεται εἶναι.
> Ἦ πολὺ λώϊόν ἐστι κατὰ στρατὸν εὐρὺν Ἀχαιῶν
> Δῶρ' ἀποαιρεῖσθαι, ὅς τις σέθεν ἀντίον εἴπῃ.
> Δημοβόρος βασιλεύς, ἐπεὶ οὐτιδανοῖσιν ἀνάσσεις·
> Ἦ γὰρ ἄν, Ἀτρείδη, νῦν ὕστατα λωβήσαιο.
> Ἀλλ' ἔκ τοι ἐρέω, καὶ ἐπὶ μέγαν ὅρκον ὀμοῦμαι.
> Ναὶ μὰ τόδε σκῆπτρον, τὸ μὲν οὔ ποτε φύλλα καὶ ὄζους
> Φύσει, ἐπεὶ δὴ πρῶτα τομὴν ἐν ὄρεσσι λέλοιπεν,
> Οὐδ' ἀναθηλήσει· περὶ γάρ ῥά ἑ χαλκὸς ἔλεψεν
> Φύλλα τε καὶ φλοιόν· νῦν αὖτέ μιν υἷες Ἀχαιῶν
> Ἐν παλάμῃς φορέουσι δικασπόλοι, οἵ τε θέμιστας
> Πρὸς Διὸς εἰρύαται· ὁ δέ τοι μέγας ἔσσεται ὅρκος.
> Ἦ ποτ' Ἀχιλλῆος ποθὴ ἵξεται υἷας Ἀχαιῶν
> Σύμπαντας· τότε δ' οὔ τι δυνήσεαι ἀχνύμενός περ
> Χραισμεῖν, εὖτ' ἂν πολλοὶ ὑφ' Ἕκτορος ἀνδροφόνοιο
> Θνήσκοντες πίπτωσι· σὺ δ' ἔνδοθι θυμὸν ἀμύξεις
> Χωόμενος, ὅτ' ἄριστον Ἀχαιῶν οὐδὲν ἔτισας."

4. Translate—

Τὰ δὲ δὴ πλοῖά σφι, τοῖσι φορτηγέουσι, ἔστι ἐκ τῆς ἀκάνθης ποιεύμενα· τῆς ἡ μορφὴ μέν ἐστι ὁμοιοτάτη τῷ Κυρηναίῳ λωτῷ, τὸ δὲ δάκρυον κόμμι ἐστί. ἐκ ταύτης ὦν τῆς ἀκάνθης κοψάμενοι ξύλα ὅσον τε διπήχεα, πλινθηδὸν συντιθεῖσι, ναυπηγεύμενοι τρόπον τοιόνδε. περὶ γόμφους πυκνοὺς καὶ μακροὺς περιείρουσι τὰ διπήχεα ξύλα· ἐπεὰν δὲ τῷ τρόπῳ τούτῳ ναυπηγήσωνται, ζυγὰ ἐπιπολῆς τείνουσι αὐτῶν· νομεῦσι δὲ οὐδὲν χρέωνται, ἔσωθεν δὲ τὰς ἁρμονίας ἐν ὦν ἐπάκτωσαν τῇ βύβλῳ· πηδάλιον δὲ ἓν ποιεῦνται, καὶ τοῦτο διὰ τῆς τρόπιος διαβύνεται· ἱστῷ δὲ ἀκανθίνῳ χρέωνται, ἱστίοισι δὲ βυβλίνοισι. ταῦτα τὰ πλοῖα ἀνὰ μὲν τὸν ποταμὸν οὐ δύνανται πλέειν, ἢν μὴ λαμπρὸς ἄνεμος ἐπέχῃ, ἐκ γῆς δὲ παρέλκεται. κατὰ ῥόον δὲ κομίζεται ὧδε· ἔστι ἐκ μυρίκης πεποιημένη θύρη, κατερραμμένη ῥιπεῖ καλάμων, καὶ λίθος τετρημένος διτάλαντος μάλιστά κη σταθμόν· τούτων τὴν μὲν θύρην, δεδεμένην κάλῳ, ἔμπροσθε τοῦ πλοίου ἀπίει ἐπιφέρεσθαι. τὸν δὲ λίθον ἄλλῳ κάλῳ ὄπισθε· ἡ μὲν δὴ θύρη, τοῦ ῥόου ἐμπίπτοντος, χωρέει ταχέως, καὶ ἕλκει τὴν βάριν· (τοῦτό γὰρ δὴ οὔνομά ἐστι τοῖσι πλοίοισι·) ὁ δὲ λίθος ὄπισθε ἐπελκόμενος, καὶ ἐὼν ἐν βυσσῷ, κατιθύνει τὸν πλόον.

5. Translate—

τῆς τε πόλεως ὑμᾶς εἰκὸς τῷ τιμωμένῳ ἀπὸ τοῦ ἄρχειν, ᾧπερ ἅπαντες ἀγάλλεσθε, βοηθεῖν καὶ μὴ φεύγειν τοὺς πόνους ἢ μηδὲ τὰς τιμὰς διώκειν· μηδὲ νομίσαι περὶ ἑνὸς μόνου, δουλείας ἀντ' ἐλευθερίας, ἀγωνίζεσθαι, ἀλλὰ καὶ ἀρχῆς στερήσεως καὶ κινδύνου ὧν ἐν τῇ ἀρχῇ ἀπήχθεσθε. ἧς οὐδ' ἐκστῆναι ἔτι ὑμῖν ἔστιν, εἴ τις καὶ τόδε ἐν τῷ παρόντι δεδιὼς ἀπραγμοσύνῃ ἀνδραγαθίζεται· ὡς τυραννίδα γὰρ ἤδη ἔχετε αὐτήν, ἣν λαβεῖν μὲν ἄδικον δοκεῖ εἶναι, ἀφεῖναι δὲ ἐπικίνδυνον. τάχιστ' ἄν τε πόλιν οἱ τοιοῦτοι ἑτέρους τε πείσαντες ἀπολέσειαν καὶ εἴ που ἐπὶ σφῶν αὐτῶν αὐτόνομοι οἰκήσειαν· τὸ γὰρ ἄπραγμον οὐ σώζεται μὴ μετὰ τοῦ δραστηρίου τεταγμένον, οὐδὲ ἐν ἀρχούσῃ πόλει ξυμφέρει, ἀλλ' ἐν ὑπηκόῳ, ἀσφαλῶς δουλεύειν.

6. Translate—

ἐδόκει δὲ λαβόντα τῶν ναυτῶν ἕκαστον τὴν κώπην καὶ τὸ ὑπηρέσιον καὶ τὸν τροπωτῆρα πεζῇ ἰέναι ἐκ Κορίνθου ἐπὶ τὴν πρὸς Ἀθήνας θάλασσαν, καὶ ἀφικομένους κατὰ τάχος ἐς Μέγαρα καθελκύσαντας ἐκ Νισαίας τοῦ νεωρίου αὐτῶν τεσσαράκοντα ναῦς αἳ ἔτυχον αὐτόθι οὖσαι πλεῦσαι εὐθὺς ἐπὶ τὸν Πειραιᾶ· οὔτε γὰρ ναυτικὸν ἦν προφυλάσσον ἐν αὐτῷ οὐδὲν οὔτε προσδοκία οὐδεμία μὴ ἄν ποτε οἱ πολέμιοι ἐξαπιναίως οὕτως ἐπιπλεύσειαν, ἐπεὶ οὐδ' ἀπὸ τοῦ προφανοῦς τολμῆσαι ἂν καθ' ἡσυχίαν, οὐδὲ εἰ διενοοῦντο, μὴ οὐκ ἂν προαισθέσθαι.

7. Give a concise account of the first year of the Peloponnesian War.

8. What is the ordinary meter of the dialogue in a Greek play styled, and why?

Greek.—II.

TUESDAY, 17th SEPTEMBER, 1861.—2 p.m. *to* 5 p.m.

1. Give the derivation and the meanings of the following words, and notice anything peculiar in the form of any of them:—οὐλοχύται, ὑποβλήδην, ἠέριος, νεφεληγερέτα, λιβανωτοφόρος, κλῆθρον, ποικίλῳδος, ἀθερίζω, ἀλεεινός, ὀργυία, παρώροφις, ἀκροτελεύτιον, ἀγρυπνία, ἀνδραγαθίζεσθαι, παράδειγμα, ὁμογνωμονεῖν.

2. Translate and write brief critical notes on the following:—

(1.) οὐδέ σ' ὀίω ἐνθάδε πλοῦτον ἀφύξειν. (2.) οἶμαι γὰρ οὔτ' ἂν Ἴστρον οὔτε Φᾶσιν ἂν νίψαι. (3.) τίνας ποθ' ἕδρας τάσδε μοι θοάζετε. (4.) λύοντας, ὡς τόδ' αἶμα χείμαζον πόλιν. (5.) εἴ τι νὺξ ἀφῇ. (6.) οὐ γὰρ οὕτω φρενοβλαβὴς Πρίαμος καὶ οἱ ἄλλοι ὥστε σώμασι κινδυνεύειν ἐβούλοντο. (7.) ἐμπείρους ἔχοντες τοὺς διώκοντας τοῦ μὴ ἐκφεύγειν. (8.) τὸ τιμώμενον τῆς πόλεως. (9.) οὐκ ἀντιτιθέντες τὴν Ἀθηναίων ἐκ πολλοῦ ἐμπειρίαν τῆς σφετέρας δι' ὀλίγου μελέτης.

3. Translate and explain,—διὰ τρίτου ἔτεος ἐμβόλιμον ἐπεμβάλλουσι. (2.) τὸ πλοῖον ὥςπερ βοῦν διαδήσαντας πορεύεσθαι. (3.) των ιστιων τους κρικους και καλους οι μεν αλλοι εξωθεν προσδεουσι, Αιγυπτιοι δε εσωθεν. (4.) και δοκους μεγαλας αρτησαντες αλυσεσι μακραις σιδηραις απο της τομης εκατερωθεν απο κεραιων δυο επικεκλιμενων και υπερτεινουσων, ανελκυσαντες εγκαρσιας αφιεσαν την δοκον χαλαραις ταις αλυσεσι.

4. What is the meaning of the following? Quote, if you can, illustrative passages:—

(1.) ἱκτηρίοις κλάδοισιν ἐξεστεμμένοι.
(2.) ἐξ ἦρος εἰς ἀρκτοῦρον ἐκμήνους χρόνους.
(3.) νώμησαν δ' ἄρα πᾶσιν ἐπαρξάμενοι δεπάεσσιν.
(4.) στυρακίῳ ἀκοντίου ἀντὶ βαλάνου χρησάμενος ἐς τὸν μοχλόν.
(5.) οὐδὲ ἀζημίους μὲν, λυπηρὰς δὲ τῇ ὄψει ἀχθηδόνας προστιθέμενοι.
(6.) ἐπὶ τεσσάρων ταξάμενοι τὰς ναῦς.

5. Construct a scheme of the various forms of conditional sentence in Greek.

6. Mention any peculiarities which strike you in Homer's syntax.

7. Scan and point out any peculiarities or faults in the following lines:—

ὡς ὑμᾶς ἴσα καὶ τὸ μηδὲν ζώσας ἐναριθμῶ.
ὄλβος δικαίως· νῦν δὲ ταύτῃ θἠμέρᾳ.
εἰς ὅσον κλύδωνα δεινῆς ξυμφορᾶς ἐλήλυθεν
οὐ γάρ πω τοίους ἴδον ἀνέρας οὐδὲ ἴδωμαι
χρυσέῳ ἀνὰ σκήπτρῳ καὶ ἐλίσσετο πάντας Ἀχαιούς
ἧσθαι ἐπεί νύ τοι αἶσα μίνυνθά περ, οὔ τι μάλα δήν.

8. What grammatical usages are exemplified in the following:—

ἀκράτησας — τὸ μὴ οὐ (at the end of an Iambic) — τέθνηκε θεῖον Ἰοκάστης κάρα — ἐλήλυθε.

9. Certain islands on the West coast of Greece Proper are mentioned both by Thucydides and Herodotus. Name them, state the peculiarity on account of which they are cited, and the legend belonging to them.

10. Draw a map of Egypt, showing the principal places mentioned by Herodotus.

11. What are the Greek accents? and what names are given to words according to their accent? Accentuate the unaccented passages in Question 3.

12. Πελασγοὶ δὲ οὗτοι. State what you know about the Pelasgians.

13. Τετρακόσια τάλαντα. How much would this be in English money? Construct a scheme of Greek money.

14. Who were the allies of Athens and Sparta at the commencement of the Peloponnesian War?

Pure Mathematics.—I.

1. A stone stair winds round a pillar 4 feet in diameter. The length of each step, from the pillar to the outer wall, is 6 feet. The height of the tower is 125 feet, and there are ten and a quarter turns in the stair. Find the total surface of stone in the steps, and the breadth of each step at the outer wall.

2. The solid content of a cylinder varies directly as its height and the square of its radius. Find the number of yards of iron wire, $\frac{1}{8}$ of an inch in diameter, that can be made out of a bar of iron 5 feet long and 8 inches in diameter.

3. State and prove the rules for the multiplication and division of decimals.

4. £4000 is invested in Tasmanian Debentures paying 6 per cent. at $101\frac{5}{8}$. Compare the income from this source with that which would have been derived from investing the same sum in Bank of England Stock averaging 8 per cent. dividend at $215\frac{1}{4}$.

5. Find all the roots of the equation $x^3 = a^3$, and verify the results by substitution.

6. If the odd numbers be arranged thus—

$$1$$
$$3, 5$$
$$7, 9, 11$$
$$13, 15, 17, 19$$
$$\dots\dots\dots\dots\dots$$

prove that the sum of any line is a perfect cube.

7. Assuming the Binomial Theorem for a positive integral index, prove it for any exponent.

8. Find, by the method of Indeterminate Coefficients, the sum of the squares 1, 4, 9, 16, &c.
Apply the formula to finding the number of balls in a square pile, one side of the base containing 7.

9. In a bag containing 12 balls there are 5 white, 4 black, and 3 yellow. What is the chance of a person's drawing first a yellow, then a black, and then a white ball?

10. One boat, A, rows a course against the tide running 4 miles an hour in 30 minutes, and with the tide running 2 miles an hour in 15 minutes. Assuming the pace of the boat through the water to be uniform, find the length of the course and the pace of the boat in still water. In a race in still water with a boat, B, which can row the distance $18m.$ $50s.$, which will win, and by how many yards?

11. Two sums of money are lent, one at 7 per cent. simple interest, the other at 5 per cent. compound interest. In how many years will each double itself?

12. Solve the following Equations :—

(1.) $\dfrac{x + \sqrt{a-x}}{x - \sqrt{a-x}} = \dfrac{m+1}{m-1}$ (2.) $x^2 + \dfrac{1}{x^2} + x + \dfrac{1}{x} = 4$

(3.) $\dfrac{a - \sqrt{2ax - x^2}}{a + \sqrt{2ax - x^2}} = \dfrac{x}{(a-x)}$ (4.) $x - 3 = \dfrac{3 + 4\sqrt{x}}{x}$

Pure Mathematics.—II.

WEDNESDAY, 18TH SEPTEMBER, 1861. 2 P.M. *to* 5 P.M.

1. Two parallel chords in a circle are respectively six and eight inches in length and one inch apart: find the length of the diameter in inches.

2. Prove that if from any point without a circle two straight lines be drawn, one cutting and the other touching the circle, the rectangle contained by the whole cutting line and the part of it outside the circle is equal to the square of the line touching the circle.

3. Describe a rectilineal figure similar to one and equal to another given rectilineal figure.

4. A ladder is gradually raised up a wall. Show that the centre of it moves in the quadrant of a circle.

5. Prove that if a straight line be drawn joining the points of bisection of two sides of a triangle, it divides the triangle into two parts, which are to one another as 3 : 1.

6. Prove that equiangular parallelograms have to one another the ratio compounded of the ratios of their sides.

7. Find sin. 9°, and cos. 54°.

8. The angle of elevation of an object at a point of observation A is 22° 30'. At a point B, 400 yards nearer on level ground, it is 45°. Find the height of the object.

9. Taking the height of the cairn on Mount Wellington to be 4500 feet above the sea, at what distance at sea would it become visible from the deck of a ship approaching the land, taking the height of the deck above the water to be 20 feet, and the earth's radius 4000 miles ?

10. Explain clearly the " ambiguous case."

11. Find a series for cos. $n A$ in terms of cos. A.

12. R being the radius of the circle described about, and r that of the circle inscribed in a given triangle, d the distance between their centers: show that $d = \sqrt{R^2 - 2 R r}$.

English Language.

THURSDAY, 19TH SEPTEMBER, 1861. 7 P.M. *to* 9 P.M.

1. " The English is a composite language." Name its component elements, with the proportion which each contributes to the whole.

2. To what languages do the following words properly belong :—seraph, chess, sofa, almanac, calico, carnival, motto, schooner ? And to what classes of words the following :—jovial, chimerical, tantalize, volcanic, philippic, dunce, quixotic, lilliputian ?

3. What were the old meanings of the following :—pigmy, bran-new, currant, gossip, a painful preacher, kindly fruits, worship ?

4. Give the meaning of the Celtic and Anglo-Saxon roots—Ben, Car, Dun, Kill, Den, Burn, Shire, Ness ; with the names of places in which they occur.

5. Point out the difference between English and the Classical languages in the use of gender. Does the character of the English nation suggest any reason for this difference ?

6. Show by examples that when a language possesses two grammatical forms to express the same modification of meaning, one or the other will in time become obsolete.

7. What is the force of the prefixes a-, with-, over-, out- ; and of the affixes -dom, -ness, -cle, -tide ?

8. Give the etymology of mayor, alderman, endeavour, twilight, sneer, regale, dismay, farthing.

9. Give instances of words derived to us from Latin through French ; and mention some words that are now in process of naturalization from French, showing how they supply a want in our language.

10. " Only a quarter of a century has elapsed since the Greek was a slave, and his language a patois. Since then, the race has risen to political existence, and freedom of thought; and many a new idea has required a new word to express it." Assign the words of the foregoing passage to their original languages. Explain the construction, " many a new idea."

11. Show that it is the tendency of language in process of time to gain in *words*, but to lose both in *words* and in *powers*,

12. Distinguish between shall, will; to abandon, to desert, to forsake; right, expedient; faultless, blameless, innocent; authentic, genuine; self-conceit, pride, vanity, arrogance, ostentation.

13. Among the faults of a bad style of writing are verbosity, verbiage, bombast, pedantry, confusion of metaphor, bathos, claptrap. Explain these terms.

14. Distinguish between the uses of irony, sarcasm, and invective, in the language of oratory.

15. Name some of the greatest English writers of the last three centuries, pointing out the characteristic excellence of each.

Natural Philosophy,—I.

THURSDAY, 19TH SEPTEMBER, 1861. 9 A.M. to Noon.

1. Two equal forces act on a point at an angle $(180-a)$, and are afterwards applied at an angle $(180-2a)$. Let r_y and r_{ji} be the resultants. Find $\frac{r_y}{r_{ji}}$.

2. Find the Ratio of the Power to the Weight in the Third System of Pullies.

3. Find the center of gravity of a pyramid on a triangular base.

4. A force of 10 lbs. sustains a weight on an inclined plane rising 2 in 5 : the force acts in the direction of the plane. Required the weight.

5. A small cylinder 6 inches long and 1 inch diameter, is taken out of one end of a cylindrical ashen staff 4 feet long and 3 inches in diameter, and filled up with lead. Find the distance of the center of gravity from the center of figure, specific gravity of ash being 0·85, and that of lead 11·45.

6. A rocket ascends vertically with a velocity of 100 feet per second, and explodes at its highest point. If the difference between the times of hearing the explosion at the point whence it started and a point $\frac{1}{4}$ of a mile off be 1 second, find the velocity of sound.

7. A body falls for a certain number of seconds. The space described in the fifth second is to that described in the last but four as 1 to 6. Find the whole space described.

8. Place a circle in a vertical plane. Show that the time of descent down all chords is equal.

9. The elasticity of a body is $\frac{1}{4}$: it impinges on a perfectly hard plane, and the direction after impact is at right angles with that before impact. Find the angle of incidence.

10. A ball is projected with a velocity of 96·6 feet per second at an angle of 30° to the horizon : required the horizontal range and the time of flight.

11. If a Fahrenheit's Thermometer reads 60°, what will a Centigrade Thermometer read? Prove the formula you employ.

12. Prove that the whole fluid pressure on a surface immersed in a fluid is equal to the weight of a column of fluid having for base the area of the immersed surface and for height the depth of the center of gravity of the surface below the fluid.

13. If a given sphere be just immersed in a fluid, compare the pressure on the sphere with the weight of the displaced water.

Analytical Statics.

THURSDAY, 19TH SEPTEMBER, 1861. 2 P.M. to 5 P.M.

1. Give Poisson's proof of the parallelogram of forces.

2. Three forces act perpendicularly to the sides of a triangle at their middle points, and are proportional to the sides on which they act. Show that the triangle will remain at rest.

3. Three couples act in planes at right angles to one another. Find the magnitude and the position of the resultant couple.

4. A sphere weighing 10 lbs. rests between two planes inclined at angles of 30° and 60° respectively to the horizon. Find the normal pressure on each of them.

5. Along a rod n feet in length, each foot of which weighs $\frac{1}{2}$ a pound, $n + 1$ weights 1, 2, 3, 4, &c. pounds are placed at equal intervals. Find the point about which the whole will balance.

6. Find the conditions of equilibrium of a rigid body resting on a smooth plane.

7. An isosceles triangle of base b is inscribed in a circle of radius a. Find the center of gravity of the remaining area of the circle.

8. Find the co-ordinates of the center of gravity of any solid.

9. Find the center of gravity of a semicircle.

10. Find the conditions of equilibrium of a particle constrained to remain on a curve, (1.) If the curve be smooth, (2.) If it be rough.

11. Find the equation to the common catenary.

12. If an elastic string has a weight attached to one end, and hangs vertically from a point of suspension; find the extension, taking into account the weight of the string.

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FRIDAY, 20th SEPTEMBER, 1861. 9 a.m. *to* Noon.

1. Explain and exemplify the use and the effect of the three accents, noting particularly the origin of the circumflex.

2. What is the derivation of the following words :—*Queue, Bras, Accès, Fête, Réseau, Frère, Noces, Guerre, Archévêque, Fruit, Goût, Froid, Guêpe, Réticence, Avoir;* and account for the irregularity in the past tenses of the last verb—*eus, eusse.*

3. Translate into English—

"Ces paroles firent pâlir mon maître, qui me dit avec un souris forcé : Monsieur Gil Blas, cette pièce n'est donc pas de votre goût? Je ne dis pas cela, monseigneur, interrompis-je tout déconcerté ; je la trouve excellente, quoique un peu au-dessous de vos autres ouvrages. Je vous entends, répliqua-t-il. Je vous parais baisser, n'est-ce pas? Tranchez le mot. Vous croyez qu'il est temps que je songe à la retraite? Je n'aurais pas été assez hardi, lui dis-je, pour vous parler si librement, si votre grandeur ne me l'eût ordonné. Je ne fais donc que lui obéir, et je la supplie très-humblement de ne me point savoir mauvais gré de ma hardiesse. A Dieu ne plaise, interrompit-il avec précipitation, à Dieu ne plaise que je vous la reproche ! Il faudrait que je fusse bien injuste. Je ne trouve point du tout mauvais que vous me disiez votre sentiment ; c'est votre sentiment seul que je trouve mauvais. J'ai été furieusement la dupe de votre intelligence bornée.

" Quoique démonté, je voulus chercher quelque modification pour rajuster les choses ; mais le moyen d'apaiser un auteur irrité, et de plus un auteur accoutumé à s'entendre louer? N'en parlons plus, dit-il, mon enfant. Vous êtes encore trop jeune pour démêler le vrai du faux. Apprenez que je n'ai jamais composé de meilleure homélie que celle qui a le malheur de n'avoir pas votre approbation. Mon esprit, grâce au ciel, n'a rien encore perdu de sa vigueur. Désormais je choisirai mieux mes confidents ; j'en veux de plus capables que vous de décider. Allez, poursuivit-il en me poussant par les épaules hors de son cabinet, allez dire à mon trésorier qu'il vous compte cent ducats, et que le ciel vous conduise avec cette somme ! Adieu, monsieur Gil Blas ; je vous souhaite toutes sortes de prospérités, avec un peu plus de goût."—[*Lesage.*]

What other signification attaches to the word *Souris ?* How is the one distinguished from the other ?

4.
Je ne suis *pas* très riche.
Il n'est *point* de noblesse, où manque la vertu.
Je n'ai trouvé *personne.*
Je n'y vois *goutte.*
Il n'en veut *mie.*
Il n'y en a *brin.*

What is the origin of the words—*pas, point, &c.*—used to complete the negation, and to what part of Speech do they belong ?

What is the difference between *pas* and *point,* and why would it be incorrect to say, Je ne suis *point* très riche ?

5. Translate into French—

" William thought it necessary that the Minister who was to represent him at the French Court should be a man of the first consideration, and one on whom entire reliance could be reposed; Portland was chosen for this important and delicate mission ; and the choice was eminently judicious. He had, in the negotiations of the preceding year, shown more ability than was to be found in the whole crowd of formalists who had been exchanging notes and drawing up protocols at Ryswick. Things which had been kept secret from the plenipotentiaries who had signed the treaty were well known to him. His fidelity and diligence were beyond all praise. These were strong recommendations. Yet it seemed strange to many that William should have been willing to part, for a considerable time, from a companion with whom he had during a quarter of a century lived on terms of entire confidence and affection."—[*Macaulay.*]

What is the origin and the signification of *y, on, néanmoins, nonobstant ?*

6. With regard to French words derived from such Greek and Latin roots as βουλομαι, caput, what modification of the labial sounds takes place? Give examples.

7. Translate into English—

> Prends un siège, Cinna, prends; et sur toute chose
> Observe exactement la loi que je t'impose:

CINNA.

Je vous obéirai, Seigneur.

AUGUSTE.

> Tu vois le jour, Cinna; mais ceux dont tu le tiens
> Furent les ennemis de mon père, et les miens:
> Tu fus mon ennemi même avant que de naître,
> Et tu le fus encor quand tu me pus connoître.
> Je te fis prisonnier pour te combler de biens;
> Ma cour fut ta prison, mes faveurs tes liens.
> Je te restituai d'abord ton patrimoine;
> Je t'enrichis après des dépouilles d'Antoine
> Et tu sais que depuis, à chaqe occasion,
> Je suis tombé pour toi dans la profusion.
> Toutes les dignités que tu m'as demandées
> Je te les ai sur l'heure et sans peine accordées.
> Aujourd'hui même encor, mon âme irrésolue
> Me pressant de quitter ma puissance absolue,
> De Maxime et de toi j'ai pris les seuls avis;
> Et ce sont, malgré lui, les tiens que j'ai suivis.
> Bien plus, ce même jour je te donne Emilie,
> Le digne objet des vœux de toute l'Italie,
> Et qu'ont mise si haut mon amour et mes soins,
> Qu'en te couronnant roi je t'aurois donné moins.
> Tu t'en souviens, Cinna; tant d'heur et tant de gloire
> Ne peuvent pas sitôt sortir de ta mémoire;
> Mais, ce qu'on ne pourroit jamais s'imaginer,
> Cinna, tu t'en souviens, et veux m'assassiner.

CINNA.

> Moi, seigneur! moi, que j'eusse une âme si traîtresse:
> Qu'un si lâche dessein..

AUGUSTE.

> Tu tiens mal ta promesse:
> Sieds-toi, je n'ai pas dit encor ce que je veux;
> Tu te justifieras après, si tu le peux.
> Écoute cependant; et tiens mieux ta parole:
> Tu veux m'assassiner demain au Capitole,
> Pendant le sacrifice; et ta main pour signal
> Me doit au lieu d'encens donner le coup fatal;
> La moitié de tes gens doit occuper la porte,
> L'autre moitié te suivre, et te prêter main-forte.

In this passage, point out any words that are not used in modern French; and explain the origin of *naître, connoître, âme, traîtresse.* Why is the circumflex accent used in each of them? Explain the expressions *bongré, malgré, savoir gré, à mon gré.*

8. What is the difference between *quand* and *quant,—près de, prêt de, prêt à?*

"*If I were you*" can be expressed in four different ways: state them, and explain the construction.

Pure Mathematics.—III.

FRIDAY, 20th SEPTEMBER, 1861. 2 p.m. *to* 5 p.m.

1. Given the equations to two parallel straight lines; find the distance between them.

2. Find the area included between the three lines $y = mx$, $y = m_{,}x$, $y = m_{,,}x + a$.

3. What relations must exist among the coefficients in order that the equation,
$$Ax^2 + Cy^2 + Dx + Ey + F = 0.$$
may represent a circle.

4. P is any point in a parabola, A the vertex, T the point of intersection of the tangent at P, with the axis of X, M the foot of the perpendicular from P on that axis. Prove geometrically that $TM = 2AM$. Prove the same property analytically.

5. An ellipse is defined to be the locus of a point which moves so that its distance from a fixed point bears a constant ratio to its distance from a fixed straight line, this ratio being less than unity. From this definition find the equation to the ellipse, the fixed line and that perpendicular to it from the fixed point being taken as axes. The origin being (1.) Their point of intersection (2.) The fixed point (3.) The center of the ellipse.

6. Prove geometrically that parallelograms circumscribed about an ellipse, having their sides parallel to conjugate diameters, have equal areas.

7. Determine fully the nature and the position of the curves represented by:
$$y^2 - 2xy + x^2 - 6y - 6x + 9 = 0.$$
$$y^2 - 2xy - x^2 + 2 = 0$$
$$4y^2 + 4x^2 + 16y - 8x + 19 = 0.$$

8. Prove that as x increases indefinitely the expression $\left(1 + \frac{1}{x}\right)^x$ approaches a limit lying between 2 and 3.

9. Find $\frac{dy}{dx}$ from each of the following :—

(1.) $\quad y = \dfrac{2x^2 - a^2}{x\sqrt{a^2 + x^2}}$

(2.) $\quad y = \dfrac{x^m - a^m}{x^m + a^m}$

(3.) $\quad y = e^x \sqrt{x^2 + 1}$

(4.) $\quad y = \tan. x$

(5.) $\quad y = \sin.^{-1}x$

(6.) $\quad y = \operatorname{cosec}. \dfrac{x}{a}$

10. State and prove Leibnitz' Theorem.

11. Transform the expression $\dfrac{x\dfrac{dy}{dx} - y}{\sqrt{1 + \left(\dfrac{dy}{dx}\right)^2}}$ to another in which θ shall be the independent variable, having given $x = r \cos. \theta$, $y = r \sin. \theta$.

12. At what angle does the curve $y^2 = 2ax$ cut the curve $x^3 - 3axy + y^3 = 0$.

Latin Composition.

Translate into Latin Prose—

" The tranquillity of the East was soon disturbed by rebellion ; and the throne of Valens was threatened by the daring attempts of a rival, whose affinity to the emperor Julian was his sole merit, and had been his only crime.   Procopius had been hastily promoted from the obscure station of a tribune and a notary, to the joint command of the army of Mesopotamia ; the public opinion already named him as the successor of a prince who was destitute of natural heirs ; and a vain rumour was propagated by his friends, or his enemies, that Julian, before the altar of the Moon at Carrhæ, had privately invested Procopius with the Imperial purple.   He endeavoured, by his dutiful and submissive behaviour, to disarm the jealousy of Jovian ; resigned, without a contest, his military command ; and retired, with his wife and family, to cultivate the ample patrimony which he possessed in the province of Capadocia. These useful and innocent occupations were interrupted by the appearance of an officer, with a band of soldiers, who, in the name of his new sovereigns, Valentinian and Valens, was despatched to conduct the unfortunate Procopius either to a perpetual prison, or an igno- minious death."

Translate into Latin Hexameters—

" As when the moon, refulgent lamp of night !
O'er heaven's clear azure spreads her sacred light,
When not a breath disturbs the deep serene,
And not a cloud o'ercasts the solemn scene ;
Around her throne the vivid planets roll,
And stars unnumber'd gild the glowing pole,
O'er the dark trees a yellow verdure shed,
And tip with silver every mountain's head ;
Then shine the vales, the rocks in prospect rise,
A flood of glory bursts from all the skies :
The conscious swains, rejoicing in the sight,
Eye the blue vault, and bless the useful light."

Or into Latin Elegiacs—

" When Sappho struck the quivering wire,
Her throbbing breast was all on fire ;
And when she raised the vocal lay,
Her captive soul was charmed away.
But had the nymph possessed with these
Thy softer, chaster power to please,
Thy beauteous air of sprightly youth,
Thy native smile of artless truth,
The worm of grief had never preyed
On the forsaken, love-sick maid,
Nor had she mourned a hapless flame,
Nor dashed on rocks her tender frame."

Greek Composition.

Translate into Greek Prose,—

The instructions to the generals were conceived with energy and precision: to hasten their march in close and compact columns, which, according to the disposition of the ground, might readily be changed into any order of battle; to secure themselves against the surprises of the night by strong posts and vigilant guards; to prevent resistance by their unexpected arrival; to elude examination by their sudden departure; to spread the opinion of their strength, and the terror of his name; and to join their sovereign under the walls of Sirmium. For himself, Julian had reserved a more difficult and extraordinary part. He selected three thousand brave and active volunteers, resolved, like their leader, to cast behind them every hope of a retreat: at the head of this faithful band, he fearlessly plunged into the recesses of the Marcian, or Black Forest, which conceals the sources of the Danube; and, for many days, the fate of Julian was unknown to the world.

Translate into Greek Iambics,—

The old order changeth, giving place to new,
And God fulfils Himself in many ways,
Lest one good custom should corrupt the world.
Comfort thyself; what comfort is in me?
I have lived my life, and that which I have done
May He within Himself make pure! But thou,
If never thou shouldst see my face again,
Pray for my soul. More things are wrought by prayer
Than the world dreams of. Therefore let thy voice
Rise like a fountain for me night and day.
For what are men better than sheep and goats
That nourish a blind life within the brain,
If knowing God they lift not holy hands
Both for themselves and those that call them friend.

APPENDIX.

10th September, 1861.

Sir,

The Examiners appointed by the Council to conduct the Examination for the Tasmanian Scholarships will feel obliged by your laying this letter before the Council of Education at the earliest opportunity with a view to their receiving the instructions of the Council on certain points.

In conferring together for the purpose of determining what weight should be attached to the various Subjects of Examination, and what amount of proficiency on the whole should be deemed necessary for obtaining a Scholarship ; they found that the decision of these points did not rest with them but with the Council under the 13th and the 23rd Sections of the *Tasmanian Council of Education and Scholarship Act.*

They have the honor, therefore, to request from the Council instructions on these two points, but venture at the same time to make the following suggestions :—

A. Relative value of subjects :—
I. Classics—Greek .... 60 }
           Latin .... 60 } 120

II. Mathematics .... 70 }
III. Natural Philosophy.......... ... 50 } 120

IV. Modern History............ .... 20 }
V. Modern Languages—English . 20 } 60
              French .. 20 }

                                               300

In making this suggestion the Examiners have been influenced by the consideration of the relative value which the subjects of examination occupy during the earlier years of an undergraduates career at Oxford or Cambridge. The same consideration leads them to offer another suggestion :—

B. Standard of proficiency to be attained by a Candidate to warrant the award of a Scholarship to him :—

3-5th's of the total marks in Classics, *or* 3-5ths of } the total marks in Mathematics and Natural } 72
Philosophy .... }

An equal number of marks obtained from any other } 72
subject or subjects......................... }

            Total 144

Any Candidate who fulfils the former condition will be likely to do well in either Classics or Mathematics at the University of his choice ; and any one who fulfils *both* conditions must have applied himself diligently to the studies prescribed by the Council.

The Examiners will be glad to receive the directions of the Council as soon as may be convenient, as the Examination will commence on Monday, 16th September.

M. H. IRVING, *M.A.*
F. H. COX, *B.A.*
FR. HARTWELL HENSLOWE.

The Secretary Tasmanian Council of Education.

Laid before the Council and approved, } M. BURGESS, *Secretary.*
    10th September, 1861. }