

*Rewards.*

Prizes are given periodically to the cadets highest in each class, and in certain subjects of instruction, and for conduct.

Badges of honour and distinction are also worn on their uniform by cadets of the higher class, and to those in any class who distinguish themselves by obtaining prizes for either practical or theoretical subjects of instruction, certain privileges are extended to non-commissioned officers according to grade.

Four (4) commissions in the Imperial service are given annually, viz.:—One artillery, one engineer, one cavalry and one infantry, or two infantry if cavalry not desired.

The commandant considers it cannot be too earnestly urged that some definite future and occupation may be guaranteed for the cadets, and suggests that all commissions in the North-West Mounted Police, and also a certain number of appointments in the Department of Public Works, land or survey departments, be given to the cadets of the Royal Military College. The appointments to be in strict accordance with their qualifications and order of merit, as recommended in the college books.

*Interior Economy.*

Cadets are compelled to wear uniform at all times, except when on leave for periods over seven days. They are not permitted to leave the college grounds without a written pass, which privilege is accorded to all entitled to it by good conduct under certain conditions.

The cadets are dressed and fully equipped as regular infantry. They are organized as a battalion of four companies, and non-commissioned officers are appointed up to rank of battalion sergeant major, selected from among the three senior classes of cadets. The non-commissioned officers take the usual orderly duties, assist in maintaining discipline on parade, in class, and in quarters, and instructing in drills and military exercises.

Cadets parade for and are marched to all meals; they mess in squads of ten each under a non-commissioned officer, each company half company and section being kept together as much as possible. During meals they are under the supervision of an officer.

Cadets fall in by classes under non-commissioned officers for all study parades, are marched to respective class rooms by non-commissioned officers, and dismissed from class by professor in charge at expiration of study hour.

Cadets fall in by companies, or special drill squads, for military drills and exercises, officer in charge always present.

Cadets parade on Sunday morning for Divine Service of their several denominations, and are marched to and from church by an officer, or non-commissioned officer. They are encouraged to attend voluntary service in the afternoon or evening. An officer always proceeds to church with the main body, and remains with cadets during divine service.

*Certificates of Qualification.*

Cadets passing successfully through the Royal Military College on completion of their full course, are provided with 1st, 2nd or 3rd class certificates, according to their qualifications, and on the face of these certificates are specified the subjects of instruction they have studied; and also if they have obtained "honours" or "special mention" in any subject.

To pass successfully through the college, and be entitled to a certificate, a cadet must at the time of his completing his full term of four years, be in one of the three highest classes, and must also have proved his fitness for military command by being a non-commissioned officer at the time of his quitting the college.

*Sanitary Regulations.*

There is no building which can be specially used for hospital purposes, but a portion of the basement floor of the north building is set apart at present for this purpose.

The duties of medical officer are performed by the Surgeon of "A" Battery, who visits the college once every day at a certain specified hour, and more frequently if necessary.

The cadets receive medical attendance and medicine free. The commandant states that no provision has been made for an hospital sergeant, and that the drainage of the east building (cadets' quarters) is defective.

*Designation and Duties of Staff.*

## 1 Commandant.

Supreme charge of organization, discipline and education, theoretical and practical, of entire establishment; and responsibility for all stores, supply, accounts, payments, &c.

## 1 Captain of cadets.

This officer is at present called captain of cadets, but the commandant considers the proper title should be staff adjutant, and that he should be relieved from all orderly duty, and detail of company duty.

The duties of this officer at present are, *under the commandant*, charge of subordinate military and civil staff, the channel of routine communication with staff and cadets; charge of records, correspondence, &c., accounts and stores of every nature. Instructor in practical infantry drills, swimming, gymnastics, equitation, &c., &c. Orderly officer, so far as such duty can be performed by one man without relief.

1 Professor Mathematics and Artillery. Theory and practical drills and exercises.

1 Instructor Mathematics and Artillery. Theory and practical drills and exercises.

1 Professor Fortification, Military Engineering and Geometrical Drawing. Theory and practical drills and exercises.

1 Instructor Fortification, Military Engineering and Geometrical Drawing. Theory and practical drills and exercises.

1 Professor Military Topography, Reconnaissance and Civil Surveying.

1. Professor Military History, Strategy and Tactics, Military Administration and Law.

1 Professor Civil Engineering and Architecture.

1 Professor Chemistry, Physics and Natural Sciences.

1 Professor Freehand Drawing and Painting.

1 Professor, French.

1 Professor, German.

*Subordinate Staff.*

1 Sergeant Major, Instructor Artillery Drill. } Also instruct in Infantry Drill.

1 do do Military Engineering. }

1 do do Infantry and Gymnastics. }

1 do do Quartermaster } Charge of stores, accounts, correspondence.

1 Bugler. } Detailed by A. Battery, Canadian Artillery.

2 Gate Orderlies. }

10 Civil Servants, clean cadets' dormitories, mess establishment, &c.; clean cadets' boots, wait at mess, &c., &c., &c.



The commandant suggests that two of the instructional staff should be appointed, at small additional pay, to take orderly and company duty. This is not only a more economical arrangement than a *separate* purely military one as apart from a military instructional staff, but it has the advantage of bringing the instructional staff into more intimate and *practical* relations with the cadets, enabling the former to more easily assist the latter by advice, &c. adds to the respect of the cadets for the military professors; prevents the mind of one man only being impressed on the cadets; and also renders possible a knowledge of the character of each cadet and the influence of able and experienced men upon cadets individually, which never can be the case with only one officer in charge. This system has not only been advocated, but been found necessary, and actually adopted with great advantage at most kindred institutions. The commandant says money is already voted in the current year's estimates to carry out this system, and that he cannot too strongly urge its being commenced from 1st January, 1880.

The above arrangement is proposed to be effected by the employment of two from the present staff of professors, who will receive for this duty an additional pay of \$1.00 per diem each, and who will perform the duties of captains of companies, and be detailed on alternate weeks as orderly officers.

#### *System of Instruction—Theoretical.*

The full term of instruction, theoretical and practical, is four years.

There are eight classes of instruction, corresponding to the eight terms—seven classes being at present in existence.

There are four examinations in a year; one at the end of each term, and one about the middle of each term.

The position of the cadets in each subject, and final standing at termination of full course, is determined by the number of marks they count from day of joining to day of leaving.

A fixed number of marks is assigned as a maximum to each subject for each term. About one-eighth of these is allotted to the quarterly examination, one-eighth to recitation notes and drawings executed during term, and the remainder to the half-yearly examination.

Cadets are required to obtain one-half the total marks allotted, in order to qualify, or count for obligatory subjects, and one-third to count for voluntary subjects.

Certain subjects are commenced, and cease to be studied in different classes, according as the general education of the cadets of these classes enables them to undertake the subject, or a sufficiently high standard having been attained by these classes, it becomes unnecessary to prosecute the subject further in higher classes.

Certain subjects, and certain sections of those subjects, are obligatory in each class, and others are voluntary.

The subjects of instruction are as follows, *vide* Table A., Revised Regulations. The marks allotted to each subject and to the obligatory and voluntary portions, respectively, of these subjects in Table D.

The instruction is given by lectures, and also, as much as possible, to each cadet individually. After each examination the worked papers of the cadets are returned to the cadets, and the professors go through each question with them, pointing out the errors and their correction.

The professors attend throughout the whole of the study hours.

The time occupied respectively for theoretical and practical instruction, and for recreation, is as shown previously, under the head of "daily routine." There are also certain hours at which the professors are in attendance for study of voluntary subjects, on the afternoons of Mondays, Tuesdays, Thursdays, Fridays, and the evenings of Wednesdays and Saturdays.

The hours compulsory are six and a half hours daily on Mondays, Tuesdays, Thursdays and Fridays, with one and three-quarter hours' drill or military engineering, and three hours study and one hours drill on Wednesdays and Saturdays.

As the primary object of the college, the whole curriculum of study is so arranged as to make one subject of instruction prepare or assist another; to give such a high standard of military education as to place the cadets on an equality with the officers of any army, and at the same time to give a general, thorough and liberal education to each cadet, so as to fit him not only to take his place among cultivated gentlemen, but also so as to enable him, with the assistance of the technical training, to qualify himself for any particular profession.

The whole course is made as practical as possible. A syllabus of the instruction in each subject is given in the appendix. It should, however, be noted that these are drawn up to meet the present circumstances of the college, and that they assuredly will require revision from time to time, as improvements become possible.

#### *System of Instruction—Practical Subjects.*

The drills consist of artillery (including seige and field), and mounting and dismounting of ordnance.

*Engineer*—Field-works, bridges and pontoons, signalling, mining (land and sub-water), use of explosives, guard mounting.

*Infantry Drill and Military Exercises*.—Tent-pitching, sentry and outpost duty, gymnastics, swimming, fencing.

Each cadet undergoes instruction in the whole of the above, and also takes his turn of instructing others in the same.

Regular guard is taken by cadets twice a week for eight hours.

Each cadet goes through an annual course of artillery and rifle target practice, and judging distance.

#### *Equitation.*

Although equitation is authorized by the general regulations of the college, there are no means provided at present for instruction in this most important and indispensable qualification for the duties of a staff officer.

An increase of twenty horses to the present field battery establishment of "A" Battery, the erection of a suitable riding-school, and the appointment of a riding-master, would appear to be the most economical means of meeting the requirements of the case.

#### *System of Account and Pay.*

Payments are made through a paymaster whose general duty is the sub-charge of accounts, payments and estimates.

Pay of the superior staff of the college is issued by the paymaster monthly in arrear by cheque in favour of each person, according to certified pay lists submitted. The pay of the subordinate staff is issued in cash, and paid out by the captain of cadets, in accordance with special pay list.

All monthly accounts and claims from contractors and tradesmen for local purchases, are checked and certified by the officer commanding Royal Military College, and transmitted to paymaster by the fifth of each month.

The accounts for articles supplied from the Militia Department direct are similarly treated, but are forwarded to the Department at Ottawa.

The paymaster pays all such accounts when duly authorized from head quarters. Credits are issued by the Militia Department on requisition of paymaster, from time to time, against which cheques are drawn by the paymaster in favour of the claimants authorized to be paid.

Monthly accounts current are rendered by the paymaster to head quarters, accompanied by all necessary authorities and vouchers in support of payments.

The annual contributions from cadets are paid to the credit of the Receiver-General in Bank of Montreal, copy of deposit receipt being transmitted to the



commandant of the college, to be placed to the credit of the cadets, against which are charged all articles issued to him on repayment, viz.:—Clothing, including repairs to same, necessities, marking, instruments, personal washing, barrack damages, &c. These charges are posted monthly to the cadet's account in company ledger, which is duly signed by the cadet; all charges being previously supported by vouchers.

The commandant considers that the following regulations should be made, viz.:—That no cadet be permitted to join the college until his first annual contribution is paid.

That in case of non-payment of future annual contributions within thirty days from the date on which due, the commandant will be required to suspend the cadet, retaining all articles of regimental necessities and clothing, and instructional apparatus supplied to the cadet at the college, in order to secure the Government against loss.

#### *Clothing.*

Supplied through the Department of Militia and Defence in material, and issued to cadets on repayment at cost price. All clothing is made up by a tailor at contract rates.

#### *Regimental Necessaries, Mathematical Instruments, Drawing Materials and Text Books.*

Supplied through the Department of Militia and Defence from contractors and tradesmen, and issued to cadets on repayment at cost price.

The value of all issues on repayment are charged monthly in ledger account of each cadet.

The total number of each description of all articles issued are posted in the several store ledgers under their respective heads; receipts are posted from delivery vouchers or invoices, and the latter retained in support of the entry.

#### *Mess, Class, Office and Bedroom Furniture, and General Barrack Stores.*

These are supplied by Government free to cadets, &c. All receipts of such are scheduled and posted in store ledger of the college. Articles becoming unserviceable by fair wear are condemned periodically by a board of survey, and replaced by the Militia Department. Articles broken through neglect or lost are charged to individual responsible for such breakage or loss.

#### *Personal Washing of Cadets.*

Performed by the wives of the college servants, and paid for by cadets.

#### *Mess and Barrack Washing.*

Is also performed by the wives of the college servants, and paid for by Government under special arrangements.

#### *Fuel and Light.*

Supplied under contract with the Department of Militia and Defence, issued in accordance with a duly authorized scale, and accounted for monthly by returns forwarded to head quarters, Ottawa.

Receipts and issues are regularly posted in store ledger.

#### *Gymnastic Apparatus.*

Is kept in gymnasium. All receipts are regularly posted in store ledger, and issues are made to cadets for instructional purposes, and handed in as soon as parade is over.

#### *Military Engineering Stores.*

Receipts are posted in ledger and articles kept in store, and issued to cadets for instructional purposes; these are regularly returned when the parade is over.

#### *General Remarks.*

With reference to the foregoing information on the general subjects therein mentioned, the Board submit as follows, viz.:—

1. The general healthy condition and appearance of the cadets, and the absence of disease, point to the conclusion that the site selected is most salubrious, and taking into consideration the several hours as detailed for study, drill and recreation, the combination is such as to insure that the mental strain necessarily induced by close attention to studies is relieved by the physical exertion produced by drill and gymnastics.

2. The Royal Military College is very advantageously situated with regard to natural surroundings. The clear waters of Lake Ontario in the immediate vicinity, and the uninterrupted and extended view in every direction, are natural advantages which cannot be without their effect in influencing the temperament of those residing within the college grounds.

3. It is the opinion of the Board that the general tenor of the regulations and the arrangements for internal economy are of such a nature as to foster a gentlemanly tone of feeling among the cadets, and to encourage a sentiment of *esprit de corps*, and so far as the Board are capable of judging, these results have in a great measure been attained.

4. With reference to the recommendation made by the commandant as to the appointment of two military professors from the present staff to act as company officers, the Board are of opinion that this plan, if carried out, promises to be the means of obtaining a higher degree of discipline than can be attained by the present arrangements.

5. The Board observe that provision is now made for the residence within the college grounds of only two professors and the Staff Adjutant, the remainder of the superior staff having to provide themselves with accommodation in the city at distances varying from one to over two miles from the college.

As these professors receive a money compensation as lodging allowance, and as it would be very desirable for many reasons that they should be provided with accommodation within the college grounds, the Board recommend that for the sake of economy and convenience, suitable quarters should be erected near the college for the commandant and superior staff.

6. Cadets' quarters. With reference to this subject, the Board notice that several rooms in the cadet quarters are occupied by two individuals. In these instances the sizes of the rooms so occupied are not sufficient for the purpose, and on other grounds it is not desirable that more than one cadet should occupy each room.

In the north building, which was originally designed and constructed specially for educational purposes and as mess premises and offices, five rooms have been occupied as dormitories for 15 cadets; this is necessitated by the want of suitable accommodation elsewhere, and when the incoming class of cadets present themselves for admission in January next, the only lecture room available will have to be appropriated as a dormitory for those who may be then admitted.

In view of the foregoing circumstances, the Board cannot urge too strongly the necessity for the erection of the additional building contemplated as quarters for cadets and two officers on the west side of the college buildings.

7. The Board were pleased to observe the admirable condition in which the cadets' quarters are kept. They, however, notice that the floors are being rapidly worn away in consequence of the very poor material used in their construction.

8. Cupboards and shelves are much required in the several class rooms, and the outer gate house should be completed.



9. The Board consider the arrangements made for messing the cadets to be satisfactory.

10. The returns in connection with the whole of the articles used at the college are prepared periodically and transmitted to head quarters, and the system of account seems to be clear, intelligible and as concise as possible.

11. It would be desirable that a small annual grant be appropriated for the purpose of maintaining the cadets' library and the purchase of books.

12. There is no provision made for any religious instruction in the college, but the cadets are required to attend the public Divine Service of their denominations once every Sunday.

13. The ages at which cadets are admitted to the college are from 15 to 20, but the Board considers it would be preferable that the ages on the 1st January, preceding the examination for admission, should be from 15 to 18. There seems to be at present too great a disparity in the ages, more particularly as all who enter at the same date form a class. The younger ones are therefore at a disadvantage in respect to standing in the class in competition with those whose ages should assure greater capacity and breadth of thought.

The following subjects have been brought forward by the commandant of the college, as improvements and alterations in the existing system:—

(a.) Annual, instead of semi-annual examinations, for entrance and final. The members of the Board are of opinion that this change would prove beneficial.

(b.) That the law relating to the admission of two candidates from each military district should be amended, so as to provide for the admission of an equivalent number, on the following basis, viz.:—

Ontario .....	8
Quebec.....	6
Maritime Provinces (N.S., N.B. and P.E.I.).....	6
Manitoba and British Columbia.....	4
	<hr/> 24

(c.) Instead of the admission to the college being limited to a number annually, or semi-annually, the number admitted at each entrance examination should be regulated with reference to the maintenance of a fixed establishment of 118 cadets at the college, this being the aggregate of the number authorized by law to be admitted when the college opened, and during the four years' course. If the proportion as between the groups suggested in previous paragraph cannot be exactly carried out, the extra vacancies to be allotted to candidates highest on the list, as returned by the Examining Board. It appears in respect to this suggestion that no difficulty has yet arisen in carrying out the provisions of the regulations now existing.

In conclusion, the Board wish to observe that the Royal Military College has advanced at a rate of progress more than equal to the original hopes of its most sanguine supporters. Whilst desirous of placing upon record their appreciation of the commandant and superior staff, to whose individual exertions this most creditable result is mainly due, and of recording their opinion as to the zeal and *esprit de corps* everywhere manifested, the Board are more particularly anxious to have it understood that the requirements of this institution, based as they are upon the most recent improvements in technical education, as exemplified in other kindred establishments of a similar character, require for their proper development increased facilities, not only in the shape of scientific apparatus, models, &c., but also in increased accommodations, as required for laboratories, museum and model room.

The instruction already given seems to be complete of its kind, and there is nothing to prevent the prosecution of the higher branches of technical instruction from being carried on by every cadet, provided proper facilities, as indicated above, are placed within his reach.

The cadets being recruited from the different Provinces of this Dominion, the discrimination of the knowledge acquired by them cannot fail to be of the greatest use to

the country at large, and the Board are of opinion that every reasonable facility should be granted to make the educational course as complete as possible.

WALKER POWELL, Adjutant-General.  
President, Board of Visitors.

Members.	T. J. DUCHESNAY,
	Deputy-Adjutant General,
	Military District No. 7.
	D. T. IRWIN, Lieut.-Colonel,
	Inspector of Artillery.
	J. THORBURN, M.A.,
	Chairman, Board of Examiners.
	J. MACPHERSON, Lieut.-Colonel,
	Accountant, Department Militia and Defence.

## TABLE A.

SHewing Subjects of Instruction, Obligatory and Voluntary, for each Class.

### OBLIGATORY.

#### 8th Class.

Mathematics.	Infantry Drill.
Geometrical Drawing.	Discipline.
French or German.	Swimming.
Freehand Drawing.	

#### 7th Class.

Mathematics.	Freehand Drawing.
Geometrical Drawing.	Infantry Drill.
Fortification.	Artillery Drill.
Military Topography.	Discipline.
French or German.	Swimming.

#### 6th Class.

Mathematics.	Freehand Drawing.
Descriptive Geometry.	Infantry Drill.
Fortification.	Artillery Drill.
Artillery.	Gymnastics.
Military Administration.	Discipline.
Military Topography.	Swimming.
French or German.	

#### 5th Class.

Mathematics.	Painting.
Descriptive Geometry.	Infantry Drill.
Fortification.	Artillery Drill.
Artillery.	Engineer Drill.
Military History and Administration.	Gymnastics.
Military Topography.	Discipline.
French or German.	Swimming.
Freehand Drawing.	



## 4th Class.

Mathematics.	Freehand Drawing.
Descriptive Geometry.	Painting.
Fortification.	Infantry Drill.
Artillery.	Artillery Drill.
Military History and Administration.	Engineer Drill.
Military Topography, Reconnaissance.	Equitation.
French or German.	Gymnastics.
Geology or Chemistry or Electricity.	Discipline.

## 3rd Class.

Mathematics.	Freehand Drawing.
Descriptive Geometry.	Painting.
Fortification.	Infantry Drill.
Artillery.	Artillery Drill.
Military History.	Engineer Drill.
Military Topography, Reconnaissance.	Equitation.
French or German.	Gymnastics.
Geology or Chemistry or Electricity.	Discipline.

## VOLUNTARY.

## 8th Class.

Mathematics.	German or French.
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## 7th Class.

Mathematics.	German or French.
Geometrical Drawing.	

## 6th Class.

Mathematics.	German or French.
Descriptive Geometry.	

## 5th Class.

Mathematics.	German or French.
Descriptive Geometry.	

## 4th Class.

Mathematics.	Civil Surveying.
Descriptive Geometry.	Nature, production and use of
Artillery.	materials for construction.
German or French.	
Any one or two of these subjects.	{ Geology.
	{ Chemistry.
	{ Electricity.

## 3rd Class.

Mathematics.	Nature, production and use of
Descriptive Geometry.	materials for construction.
Fortification.	Hydraulic Engineering, Mechan-
Artillery.	ism, &c., &c.
German or French.	Design and Execution of Struc-
Any one or two of these subjects.	tures.
	{ Geology.
	{ Chemistry.
	{ Electricity.
Civil Surveying.	Architecture.
	Estimating.

## 2nd Class.

Mathematics.	Civil Surveying.
Fortification.	Nature, production and use of
Military History (Essays).	materials for construction.
Reconnaissance.	Hydraulic Engineering, Mechan-
German or French.	ism, &c., &c.
Any one or two of these subjects.	Design and Execution of Struc-
	tures.
	{ Geology.
	{ Chemistry.
	{ Electricity.
Painting.	Architecture.
	Estimating.

## 1st Class.

Mathematics.	Painting.
Fortification.	Civil Surveying.
Military History (Essays).	Design and Execution of Struc-
Reconnaissance.	tures.
German or French.	Architecture.
Any one or two of these subjects.	Estimating.
	{ Geology.
	{ Chemistry.
	{ Electricity.



TABLE D.

SHOWING appropriation of Maximum Marks to the several subjects of the Course of Instruction, and to the Obligatory and Voluntary Sections, respectively, of such subjects.

Subjects.	Maximum Marks Allotted.	
	Obligatory Section.	Voluntary Section.
Mathematics (pure and applied) .....	6,000	6,000
Geometrical Drawing and Descriptive Geometry .....	2,000	1,000
Fortification .....	2,000	3,000
Artillery .....	2,000	2,000
Military History and Administration .....	2,500	1,000
Combined... { Strategy, Tactics .....	2,500	1,000
Administration .....	1,500	
Military Topography .....	2,000	1,000
Reconnaissance .....	1,000	1,000
Civil Surveying .....	1,000	2,000
Modern Languages .....	2,000	2,000
Alternative. { French .....	2,000	
German .....	2,000	
Experimental and Natural Sciences .....	1,000	2,000
Alternative. { Chemistry .....	1,000	
Electricity .....	1,000	
Geology .....	1,000	
Freehand Drawing and Painting .....	750	1,000
Combined... { Copies from Flat .....	750	
Copies from Object .....	750	
Painting .....	500	
Civil Engineering .....	2,250	8,500
Nature and production and uses of materials for construction .....	1,500	
Hydraulic Engineering .....	1,200	
Mechanism .....	1,950	
Design and Execution of Structures .....	900	
Architecture .....	700	
Estimating .....		
Drills and Exercises .....	300	
Infantry .....	250	
Artillery .....	300	
Engineer .....	200	
Equitation .....	100	
Gymnastics .....	50	
Swimming .....		
Conduct .....	1,600	
Discipline (N.C. Officers only eligible) .....		500

## APPENDIX No. 12.

## ROYAL MILITARY COLLEGE OF CANADA—ANNUAL REPORT.

From Commandant of Royal Military College, to Lieut.-General Sir E. Selby Smyth, K. C. M. G., President Royal Military College, and Commanding Militia, Dominion of Canada.

KINGSTON, ONT., 22nd December, 1879.

SIR,—I have the honour to submit the following report of the Royal Military College of Canada for the year 1879:—

*Appendices,—Subjects referred to.*

2. Detail information on various subjects is given in the appendices.

Appendix A is a list of the Cadets who have joined the college during 1879, and shows the establishment in which they were educated.

Appendix B is a list of Cadets to whom promotions, prizes, or honorary distinctions have been awarded during 1879.

Appendices C 1, C 2, C 3, C 4, C 5, C 6 give full information of the (June, 1879) semi-annual examination, and of the work and intermediate examinations of the spring term.

Appendix D shows the Cadets arranged according to their present classes, and their relative position in those classes.

Appendix E is a complete list of the cadets on the College Rolster at the present date, with detailed information relative to each.

Appendix F are the examination papers (German excepted) of the third (the then highest) class at the June semi-annual examination.

The cadets of this class had at that date two more terms before completing their full course of instruction.

Appendices G 1, G 2, &c., are the syllabus of the several courses of instruction.

It will be understood that these courses are adapted to the present circumstances of the college, and are not so complete as will be possible when the college is fully developed.

*Details of Terms and Classes.*

3. The Spring Term commenced with six classes, entitled 3rd, 4th, 5th, 6th, 7th, 8th, containing respectively 11, 8, 9, 11, 15 and 16 cadets; and the Autumn Term with seven classes respectively of 11, 8, 6, 12, 12, 17 and 13 cadets.

The next term will commence on 3rd February, 1880, with eight classes, the number of cadets in each of which will be determined by the result of the winter (January, 1880) semi-annual examination, added to the work and periodical examinations during the current term, and by the number of candidates who may be successful at the December entrance examination.



*Completion of Number of Classes.*

4. At the commencement of the ensuing term, the college will, for the first time, be complete in its number of classes.

*First batch of Graduates.*

5. At the termination of the next term, viz: 25th June, 1830, the first batch of students, viz: those who joined at the opening of the college in June, 1876, will have completed their full course (four years) of instruction at the college.

*Candidates for Admission to College.*

6. It is gratifying to be able to report that the number of candidates for admission to the college continues steadily to increase, and that the average standard of intellectual attainments of the cadets who have joined the college during 1879 has been higher than in any preceding year. This not only demonstrates that the standard of entrance examination is not too severe, but that the schools throughout the country are applying themselves to educate for the Royal Military College, and it affords grounds to hope that some, at least, of the elementary instruction which is now given at the college, and which should not be required, will, by degrees, become unnecessary.

The number of candidates from the Maritime Provinces shows how firm a hold the college has taken in this portion of the Dominion. The Province of Quebec always furnished its full quota of cadets, but I regret that among these there are not so many French speaking candidates as is desired and might be expected.

I have however, reason to anticipate that very shortly there will be no lack of representation of this important element of the Canadian nationality.

*Increased facilities for Instruction, theoretical and practical, afforded during the Year.*

7. The appointment during the year of professors of free-hand drawing, of civil engineering, and of chemistry, physics and geology, has enabled instruction in these highly important, indeed indispensable subjects to be commenced, and the full curriculum of study at the Royal Military College has now for the first time been entered upon.

The cadets have already shown by their interest and marked progress in these subjects a thorough appreciation of the high opportunity now afforded them of perfecting their education.

The appointment of a professor to instruct in military history, strategy, tactics, military administration and law, will enable the study of this branch of military education to assume its proper position, and to attain its full developement.

These appointments complete the separation of subjects of instruction; a separation equally essential to obtain competent instructors, to ensure adequate instruction, and to render possible the satisfactory progress of those under instruction.

The provision of an officer and a non-commissioned officer instructor to assist the professor of fortification has rendered possible the commencement of the practical course in the manifold and varied phases of military engineering; a branch of military science which is rapidly increased in importance.

*Instruction during Year—Theoretical Subjects.*

8. The subjects of theoretical instruction of the several classes have been as follows:—

Mathematics.  
Geometrical Drawing.

*8th Class.*

French and German.  
Freehand Drawing.

*7th Class.*

Mathematics.  
Geometrical Drawing.  
Freehand Drawing.

French and German.  
Military Topography.  
Fortification.

*6th Class.*

Mathematics.  
Descriptive Geometry.  
Freehand Drawing.  
Artillery (Theory and Construction of.)

French and German.  
Military Topography.  
Military Administration and Law.  
Fortification.

*5th Class.*

Mathematics.  
Descriptive Geometry.  
Freehand Drawing and Painting.  
Fortification.  
Artillery (Construction and Theory of.)

French and German.  
Military Topography.  
Military Administration and Law.  
Tactics and Strategy.

*4th Class.*

Mathematics.  
Descriptive Geometry.  
Freehand Drawing and Painting.  
Fortification.  
Artillery (Theory and Construction of.)  
Civil Engineering.  
Chemistry.

French and German.  
Military Topography.  
Reconnaissance.  
Military Administration and Law.  
Tactics and Strategy.

*3rd Class.*

Mathematics.  
Descriptive Geometry.  
Freehand Drawing and Painting.  
Fortification.  
Artillery (Theory and Construction of.)  
Civil Engineering.  
Chemistry.

French and German.  
Military Topography.  
Reconnaissance.  
Civil Surveying.  
Military Administration and Law.  
Tactics and Strategy.  
Physics.  
Geology.

*2nd Class.*

Mathematics.  
Freehand Drawing and Painting.  
Fortification.  
Civil Engineering.  
Chemistry.  
Physics.  
Geology.

French and German.  
Reconnaissance.  
Civil Surveying.  
Instruction in Tactics and Strategy temporarily suspended.

*Instruction during Year—Practical Subjects.*

9. The cadets of the 1st, 2nd, 3rd, 4th, 5th, 6th and 7th terms have been practised in all natures of infantry drills, both company and battalion, and in close and



extended order, also, in route marching, out post duty, tent pitching, &c., &c. Cadets of the 2nd, 3rd, 4th, 5th terms have been practised in siege and field artillery drills, and shifting of ordnance. A systematic course of rifle instruction with target practice, and also artillery practice with common and shrapnel shell, has been passed through, and in both practices the cadets made thoroughly good results.

Gymnastics and swimming have formed part of the regular instructions, with very marked beneficial effect on the physique of the cadets. Instruction has been afforded in tracing and throwing up batteries, redoubts and shelter trenches. Signalling, knotting and other engineering drills, &c., have also been commenced. Cadets have taken regular guards throughout the year.

#### *Progress of Cadets—Results of Class work and Examinations.*

10. The general results of the examinations during the year have been satisfactory, and in several individual cases exhibit very considerable ability.

Some of the ablest cadets still cling to the habit so marked in most of the cadets on joining the Royal Military College, of relying on memory rather than their power of thought.

The result is not infrequent, and occasionally ridiculous mistakes, and work otherwise excellent, rendered useless.

#### *Conduct of Cadets.*

11. The general conduct of the cadets throughout the year has been very satisfactory.

I regret that I have found it necessary to reduce some cadet non-commissioned officers, but the necessity has arisen not generally from personal mis-conduct, but from a want of appreciation of the necessity for the practice and enforcement of the strict duty which the position of a non-commissioned officer entails on those to whom that rank, with its honour and responsibility, has been entrusted. I do not anticipate the necessity for frequent recurrence to such punishment.

It is now understood that a cadet, who, at the termination of his full service of four years, does not possess sufficient stability and firmness of character to control his own actions, or those of others, and therefore not to merit the position of at least the junior grade of non-commissioned officer, is not fit for and cannot be permitted to attain to the rank of a commissioned officer.

I look to the system recommended in paragraph 19 of my annual report, 1877, and paragraph 31, annual report, 1878, to complete the disciplinary system, and trust that its early adoption will be facilitated.

#### *Casualties during Year.*

12. During 1879 one cadet has been withdrawn from the college, at the request of his parents, after payment of the regulated sum for the privilege of discharge.

One cadet has been withdrawn in consequence of failure to pass the requisite periodical examination.

#### *Sanitary Condition.*

13. The health of the cadets has been generally good, although slight cases of illness have been rather numerous.

The effects of defective water supply and drainage which exist have not been so much felt as in former years in consequence of the unusually cool season, but until remedied (which I understand will shortly be done) they present a constant and serious danger.

#### *Inspection—Incidents, &c., &c.*

14. On the 24th May, the gentlemen cadets proceeded to Montreal together with a large force of their comrades of the militia of Canada, for the celebration of Her Majesty's Birthday.

The cadets were incorporated with the division of troops which passed in review on that occasion, and took part in the extensive manœuvres which followed. The appearance and military bearing of the cadets elicited general commendation. On the 31st May, His Excellency the Governor General accompanied by Her Royal Highness the Princess Louise, honoured the Royal Military College with their inspection. His Excellency and Her Royal Highness made a minute and thorough inspection of the whole of the college and of the cadets, and graciously expressed their approbation with the arrangements, system adopted, and the result obtained during the brief period which has elapsed since the opening of the college, in June, 1876.

Her Royal Highness honoured the cadets who had been successful at the previous semi-annual examination by herself personally presenting to them the prizes which they had obtained on that occasion. The reception by these young soldiers of the proofs of success achieved, from the hands of the daughter of their Queen and the wife of His Excellency the Governor General of Canada will greatly enhance the value of their merited rewards. The cadets were afterwards brigaded with other troops of the district for review and field manœuvres.

The Honourable the Minister of Militia and Defence, accompanied by two other members of the Dominion Cabinet, visited the college on the 27th June, and carefully inspected it in all its details.

The Honourable the Minister of Militia and Defence presented the prizes won by the cadets at the summer semi-annual examination, and expressed thorough satisfaction with the working of the institution. Great benefit has already accrued from this inspection, and still further may be anticipated. The college has now been visited by five of the Ministry, who are therefore personally conversant with the nature and requirements of the institution.

#### *Commissions in the Imperial Regular Service for Cadets of Royal Military College.*

15. Her Majesty's Government has notified that four commissions in the Imperial regular service will be offered annually to the cadets of the Royal Military College of Canada.

The commissions to be assigned as follows:—

One in the Royal Artillery.

One in the Royal Engineers.

Two in the Cavalry or Infantry.

It is, of course, essential that the acquirements and ability of the cadets who obtain commissions in the Imperial service be defined and clearly established.

This will be guaranteed by the records of the college books and by the statement given in the certificates granted to cadets who have graduated.

Cadets who obtain first and second class certificates will be eligible for commissions in the Royal Artillery, Royal Engineers, Cavalry or Infantry; those who obtain third class certificates will be eligible for commissions in Cavalry or Infantry only. A commission will be offered first to the cadet who is eligible and who is highest on the list, and so on in succession.

The boon extended to Canada and the college by this grant can hardly be over estimated.

Every variety of employment offered to the cadets increases the number of candidates for admission, and these admissions being limited, and obtained only by competition, it necessarily ensures a higher standard of ability among those who are successful.

It also increases emulation and facilitates the instruction at the college, and thus the education of all those who finally graduate, whether they do or do not seek or obtain commissions, becomes proportionately higher.



The service in the regular army will thus train a certain number of officers of Canadian birth in the varied and practical experience which alone can be obtained by contact with large bodies of military under different conditions of service and circumstances; kept in constant readiness for, and not infrequently engaged in, the actuality of war.

It cannot be doubted but that for any local emergency or special employment, the benefit of the experience so gained by these officers will be available to Canada. The arrangement will also preserve and strengthen the tie of comradeship between the military forces of the British Empire by again increasing the number of Canadians serving in Her Majesty's regular service. The numbers so serving have somewhat lessened of late years, owing to the requirements and expense attached to the preparatory education in England for commissions.

The college curriculum embraces a broad and liberal education, alike fitted for military and civil pursuits, and thereby attracts men of very differently constituted tastes, minds and inclinations, and it does not necessarily follow that all the cadets who most highly distinguish themselves will invariably desire to enter the regular army.

#### *Presentation to the College.*

16. His Excellency the Governor-General has been pleased to present to the reading room of the gentlemen cadets portraits of himself and of Her Royal Highness the Princess Louise, and the latter has graciously presented a complete set of the works of Sir Walter Scott to the college library.

His Excellency has also expressed his intention of presenting a gold, a silver and a bronze medal to be competed for by the cadets of the Royal Military College.

These medals will, by the terms of presentation, be awarded to the cadets who, by the records of the college, are shown to be respectively first, second and third in proficiency in all subjects of instruction, theoretical and practical, and in conduct and discipline, from the date of their joining the college to that of their graduating therefrom; i. e., to the three most highly distinguished cadets of their period, in moral, mental and physical acquirements, extending throughout their whole course at the college.

#### *Requirements to Complete the Specified Course of Instruction—Theoretical.*

17. Models, specimens and apparatus of different nature, with which to illustrate instruction in mechanics, chemistry, electricity, geology, mineralogy, civil engineering and architecture, artillery and military engineering, &c., are still wanting.

The provision of a museum and laboratory is essential for carrying out instruction in the above subjects, for without them the full advantage of the instruction afforded cannot be readily obtained.

#### *Requirements to Complete Specified Course of Instruction—Practical.*

18. Certain instruments, such as signalling and electrical instruments, and stores and plant, cables, explosives, barrels, spars, planks, rope, various tools, &c., are required. Some of these have already been ordered; others have been applied for, and should be supplied, if practicable, before the spring.

It is a matter of great regret that no facility has yet been afforded for instruction in equitation, and I trust it will be found possible to afford it during the ensuing term, at the termination of which 17 cadets will leave the college, on completion of their course. On this point I beg to refer to paragraph 20 of annual report for 1878.

#### *Works and Buildings Required to Complete.*

19. On the subject of works which now have become absolutely indispensable, I beg to call attention to paragraphs 25, 26, 27, and 28 of my annual report, 1878, merely remarking that urgency increases as time goes on.

Among minor works, the completion of the water supply and provision of gas are essential; also of rooms for a museum or model room, and for a laboratory. The execution of some of these works will effect a very considerable economy in the annual expenses of the college.

#### *Military Party Attached to College.*

20. The commencement of practical military engineering at the college makes the absence of a small military detachment (always, indeed almost necessarily, Engineers), which is invariably attached to other military colleges, more apparent. It is hardly necessary to state that military perform the outdoor work required much more economically and satisfactorily than civilians, and that as few men as possible who are not under military discipline should be employed about a military college.

The military detachment, among other duties, perform some of the heavier portions of engineering work, especially of demolitions and bridging, which the cadets have not time for, and thus render possible more rapid instruction to the cadets, while the men composing the detachment are themselves under instruction.

#### *Future Organization.*

21. The following modifications (which the development of the college has now rendered possible) connected with the arrangements for admission to the college, will, if adopted, tend to economy, simplicity and improved working.

(a.) Approximation of maximum and minimum limits of age for admission to the college, the present limits being too wide.

(b.) Substitution of annual for semi-annual entrance examinations.

(c.) Enlargement of areas for competition for admission.

(d.) Annual number of cadetships to be regulated by the number of vacancies in a fixed establishment, instead of a definite number of vacancies per annum as at present. Detailed reports on these points have been submitted.

#### *Class of Officers of Militia.*

22. The position of the college as regards staff is now such as to admit of instruction being given during term time and hours, in the under named subjects to a limited number of officers of the militia:—

Fortification and Military Engineering.

Military Topography.

Reconnaissance.

Military History.

Tactics and Strategy.

Military Administration and Law.

German.

French.

Freehand Drawing.

Considerable difficulty must however occur in carrying it out until the new buildings are completed, in consequence of the want of room accommodation.

#### *Facilities for Instruction in Military Engineering to Militia generally.*

23. The material for military engineering already existing at the Royal Military College, together with that referred to generally in paragraphs 17 and 18 of this report,



will provide great facilities for the annual training of Engineer volunteer militia at Kingston, and with the personnel alluded to in paragraph 20 could be made to form in a very inexpensive way the nucleus of a school of military engineering, including sub-marine mining, for all ranks and branches of the service.

*Progress of College and appreciation in Great Britain.*

24. Since my last annual report I have visited most of the celebrated military and civil educational institutions, all the great military manufacturing establishments of ordnance, small arms, ammunition, etc., and many of the larger fortresses and camps of Great Britain.

I was also fortunate in opportunities of observing on several occasions large bodies of troops of all arms under the inspection by His Royal Highness the Commander-in-Chief.

I mention this because, after some years of rather close and unremitting attention to one object, there is often a tendency to become somewhat forgetful of changes and progress elsewhere, and a danger of the person so engaged becoming less qualified to form a correct and impartial opinion of his special work.

With the advantages of recent observations fresh in mind, I can unhesitatingly affirm that the college is working in the right direction, both in practical and theoretical military training, and in general education, and that Canada may be well satisfied with the progress the college has made during the four years since its opening with the comparison it can bear with old and universally honoured institutions.

It was also most gratifying to note the knowledge of and appreciating interest in the Royal Military College of Canada displayed in the mother country, not only by the military profession, but generally by persons of influence and education. I cannot close my report without expressing my hope that Canada will find suitable and certain employment for those of her sons who, possessing (as demonstrated without the possibility of question, by the college books) high qualities of ability, conduct and physique, will graduate in June next, and in succeeding years.

*Assistance by Staff.*

25. To the aid afforded me by an able and zealous staff, and to the soldierlike spirit, intelligence and conduct of the gentleman cadets, I am indebted for being able to claim the gratifying position to which the college has attained, and I desire to bring this fact to your notice.

I have the honour to be, Sir,

Your obedient servant,

E. O. HEWETT, Lieut.-Colonel, R. E.,

Commandant, Royal Military College.

APPENDIX A.—ROYAL MILITARY COLLEGE OF CANADA.

NOMINAL ROLL of Gentlemen Cadets who joined the College during 1879.

Names.	Age on joining.		Date of joining.	Marks obtained at Entrance Examination.	Where Educated.	Remarks.
	Yrs.	Mos.	1879.			
George Ewctse Wood....	18	3	Feb. 8...	9,636	Helmuth College, London, Ont.	
Frank Herbert Latimer...	18	6	do 8...	9,076	High School do	
Frederick St. Duthus Skinner .....	19	4	do 8...	8,132	Collegiate School, Galt.	
William Henry Robinson	15	6	do 8...	7,588	Collegiate School, Fredericton.	
George Robert Hooper...	16	6	do 8...	6,310	Bishop's College School, London, O.	
Henry Walker Osburn....	16	10	do 8...	5,204	Collegiate School, Fredericton.	
George Hunter Ogilvie...	18	9	do 8...	5,188	High School, Campbellford.	
Alfred Thomas Tomlinson .....	19	7	do 8...	4,809	Ottawa College.	
Zachary Taylor Wood....	18	3	do 8...	4,186	King's College, Windsor, N.S.	
Andrew Rainsford Wetmore .....	17	4	do 8...	4,048	Collegiate School, Fredericton.	
Alain C. de L. Joly.....	16	4	do 8...	3,922	Lennoxville, Quebec.	
Thomas Benson.....	18	9	do 8...	2,667	Upper Canada College.	
George Edward Laidlaw	18	3	do 8...	2,500	Collegiate School, Galt, Ont.	
Egerton E. A. Denison...	18	1	do 8...	2,463	Upper Canada College.	
Donald Colin Campbell..	17		Sept. 5...	7,471	Grammar School, Arnprior and England.	
Forbes Murray Kirby .....	17	5	do 5...	6,337	Public School, Petrolia.	
Arthur Thomas Kelly Evans .....	17	6	do 5...	6,107	Upper Canada College.	
Victor Rosenburg.....	16	9	do 5...	5,299	Strathroy High School.	
Robert Colborne Nanton.	16	2	do 5...	4,636	Upper Canada College.	
John Irvine Lang.....	20		do 5...	4,634	Public School, St. Mary's.	
James Arthur Hesketh...	15	9	do 5...	3,200	Ottawa Collegiate Institute.	
Kenneth Jeffrey K. Campbell .....	16	2	do 30...	2,793	High School, Quebec.	
Wallace Bruce M. Caruthers .....	17	1	do 5...	2,000	Collegiate Institute, Galt.	
Harry Bland Strange.....	15		do 5...	2,778	Lennoxville, Quebec.	
Mayo Williams Neyland..	18	3	Oct. 4...	2,108	Kingston Collegiate Institute.	

E. O. HEWETT, Lieut.-Colonel,

Commandant, Royal Military College.

KINGSTON, 22nd December, 1879.



## ROYAL MILITARY COLLEGE OF CANADA.

RETURN of Gentlemen Cadets who have been Promoted or have received Prizes and Honorary Distinction during the Year 1879.

Rank.	Names.	Term.	Date of Award.	Subject of Award.	Nature of Distinction.	Remarks.
Lance-Corporal.	Bridges, W.	5 5 Feb. 28...	1879	1st Mathematics. 1st Military Engineer- ing. 1st Theory and Construction of Artillery. 1st German. 1st French...	Promoted Lance-Corporal.	The Gold Medal is awarded to the Cadet who has obtained the greatest number of marks for intel- lectual and physical quali- ties and conduct from the date of his joining the Royal Military College to the date of award.
Corporal.	Campbell, H.	3 4 do 28...			Promoted Lance-Corporal. Class Prize. Badge (2 stars).	
Lance-Corporal.	Clark, G.	5 4 Aug. 5...			Promoted Corporal.	
Sergeant.	Cochrane, J.	6 3 do 2...			Promoted Lance-Corporal. Badge (cross-guns on both arms).	
Lance-Corporal.	Coryell, J.	5 4 Feb. 8...			Promoted Corporal. Badge (cross-rifles on one arm).	
do	Daniel, A.	6 3 June 23...			Promoted Sergeant. Badge (cross-rifles on one arm).	
Sergeant.	Davis, F.	5 5 Oct. 21...			Promoted Lance-Corporal. Badge (cross-guns on one arm).	
do	Davis, W.	6 5 Aug. 1...			Promoted Lance-Corporal. Badge (cross-guns on one arm).	
Co. Sergt.-Major	DesBrisay, C.	7 4 do 30...			Promoted Corporal. Badge (cross-guns on one arm).	
Lance-Corporal.	Dixon, F.	7 2 Aug. 3...			Promoted Sergeant.	
Corporal.	Doucet, A.	7 2 Oct. 30...			Promoted Sergeant-Major.	
Cadet	Duffus, G.	5 4 Feb. 8...			do do do	
Lance-Corporal.	Dunscomb, W.	6 3 Aug. 4...		1st Mathematics. 1st Military Engineer- ing. 1st Military Topography. 1st Geometrical Drawing. 1st German.	do do do	
do	Hogan, H.	2 7 June...			Class Prize. Badge (2 stars).	
		6 4 Dec. 9...			Promoted Lance-Corporal. Badge (cross-rifles on one arm).	
		3 6 June 23...			do do do	
		4 5 Oct. 21...			Promoted Lance-Corporal.	
		4 5 Dec. 11...				"Badges" of honorable distinction are awarded as follows, and are worn till the date of the next semi-annual examination:

do	Hubbell, E.	5 5 do 12...		1st Mathematics. 1st Military Engineer- ing. 1st Theory and Construction of Artillery. 1st Geometrical Drawing. 1st German	do do do	"Stars" to the Cadet in each class who, in any term, has obtained the greatest number of marks in his class, and also any Cadet in each class who is first in any three or more branches of study.
Corporal	Laurie, R.	4 3 Feb. 8...			Class Prize. Badge (2 stars).	
Lance-Corporal.	McElhinney, W.	5 4 June...			Promoted Corporal.	
do	Mackay, H.	6 3 Sept. 11...			do do	
Corporal	Perley, G.	4 5 Dec. 10...		1st Mathematics. 1st Military Engineer- ing. 1st Theory and Construction of Artillery. 1st Military Administration and Law.	Class Prize. Badge (2 stars).	
Co. Sergt.-Major	Perry, A.	6 3 June...			Promoted Lance-Corporal.	
Sergeant.	Reed, T.	4 5 Sept. 11...			do do	
do	Rivers, V.	6 6 April 3...			Prize for complete course. do	
Corporal	Ross, A.	7 6 Oct. 30...		Theory and Construction of Artillery. Geometrical Drawing and Descriptive Geometry. 1st Mathematics. 1st Mil- itary Engineering. 1st Military Ad- ministration and Law.	Class Prize. Badge (2 stars).	"Crossed Rifles and Crossed Guns" are award- ed to Cadets who are pre- eminent in their skill in rifle shooting and artillery practice, respectively, and are worn till the next annual competition.
Lance-Corporal.	Shanly, C.	7 4 Aug. 1...			Promoted Co'y. Sergeant-Major.	
Cadet	Shaw, G.	6 5 Feb. 28...			Promoted Corporal.	
do	Skinner, F.	7 4 Sept. 11...			do do	
Sergeant	Spelman, J.	6 4 June 23...		Best shot, Rifle (Martini-Henry).	Badge (cross-rifles on both arms).	
Cadet	Taylor, E.	7 3 Aug. 5...			Promoted Sergeant.	
Corporal.	Van Strauben- zee, A.	6 3 do 2...			do do	
Sergeant	Wise, H.	6 3 Oct. 21...		Marksmen, Artillery 9-pr. M.L.R.	Promoted Lance-Corporal.	
		5 4 Aug. 4...		do	do	
		5 4 Dec. 8...		1st Geometrical Drawing. 1st Freehand Drawing.	Class Prize. Badge (1 star).	
		7 2 Aug. 2...			Promoted Sergeant.	
		3 6 Oct. 21...		Marksmen, Artillery 9-pr. M.L.R.	Badge (cross-guns on one arm).	
		5 4 Feb. 8...			Promoted Lance-Corporal.	
		6 3 Aug. 3...			do do	
		7 2 do 1...			Sergeant.	

E. O. HEWETT, Lieut.-Colonel,  
Commandant, Royal Military College.

KINGSTON, 22nd December, 1879.



## ROYAL MILITARY COLLEGE OF CANADA.—Examination Return, Third Class—COMBINED SUBJECTS—From January to June, 1879.

NOTE.—All marks obtained, whether allowed to count or not, are entered.

Term.	Class.	Order in Class before Examination, Aggregate from date of joining.	Names in Alphabetical Order, and Rank.	Mathematics.			Military Engineering.			Theory and Construc- tion of Artillery.			Military History.			Military Topography and Civil Survey- ing.			Geometrical Drawing and Descriptive Geometry.			French.
				Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	
			Maximum marks allotted...	1,300	1,000	2,300	500	150	650	800	1,000	1,800	900	950	400	1,150	300	300	300	300	300	7
			Minimum marks allowed to count.....	650			250	50		400			450	475			250	100	100	100	100	
6th Term.			11 Cochrane, J., Corporal. { a	711		711	319		319	554	240	794	575		610	617	209	174		174	174	
			8 Davis, W., Corporal. .... { b	820		820	273	38	357	578	270	848	830		616	340	340	278		278	278	
			7 Desbrisay, C., Sergeant. .... { a	774		774	333		333	604		604	840		577	379	68	259		259	259	
			10 Fairbank, C., Corporal. .... { a	885		885	331		331	600	325	925	710		538	455		153		153	153	
			9 Freer, H., Co. Sgt.-Mjr. .... { b	706		706	283		283	548		548	695		553	364	60	277		277	277	
			6 Keefer, H., do ... { a	736		736	272		272	496		497	760		568	357		274		274	274	
			2 McPherson, D., Sergeant. .... { b	1,067	472	1,539	336	105	491	625	739	1,364	887		715	535	113	152		152	152	
			1 Perry, A., Sergeant. .... { b	1,106	852	1,958	409	128	537	701	926	1,626	895		737	632	316	270		270	270	
3rd Class.			3 Spelman, J., Corporal. .... { a	1,185	523	1,708	324	50	371	558	727	1,285	835		761	602	259	280		280	280	
			5 Wise, H., Corporal. .... { b	817		817	359		359	562		562	845		616	471	71	261		261	261	
			4 Warteke, A., Sergeant. .... { b	807		807	303		303	446		446	752		700	560	198	268		268	268	
																					270	

Allowed to count. b Not allowed to count.

a Allowed to count. b Not allowed to count.

## APPENDIX—C. (1).—Royal Military College of Canada—Examination Return, Third Class, &amp;c.—Continued.

Term.	Class.	Order in Class before Examination, Aggregate from date of joining.	Names in Alphabetical Order, and Rank.	German.	Freehand Drawing and Painting.	Drills and Exercises.	Conduct and Discipline.	Remarks.
				Obligatory.	Voluntary.	Obligatory.	Voluntary.	
				Total.	Total.	Total.	Total.	
			Maximum marks allotted.....	300	300	300	300	
			Minimum marks allowed to count.....	100	100	100	100	
3rd Term.			11 Cochran, J., Corporal. { a	.....	.....	.....	.....	} 1st French.
			8 Davis, W., Corporal. { a	197	168	168	168	
			7 Desbrisay, C., Sergeant. { a	34	34	34	34	
			10 Fairbank, C., Corporal. { a	.....	.....	.....	.....	
6th Term.			9 Freer, H., Co. Sgt.-Mjr. { a	.....	.....	.....	.....	} 2nd French.
			6 Keefer, H., do { a	231	190	190	190	
			2 McPherson, D., Sergeant. { a	.....	.....	.....	.....	
			1 Perry, A., Sergeant. { a	209	244	244	244	
			3 Spelman, J., Corporal. { a	.....	.....	.....	.....	} 2nd Fortification, 2nd Artillery, 2nd Strategy and Tactics. { 1st Mathematics, 1st Fortification, 1st Artillery, 1st Strategy and Tactics, 1st Descriptive Geometry, 2nd Military Topography and Surveying, 2nd German, 2nd Freehand Drawing. { 2nd Mathematics, 1st Military Topography, 2nd Descriptive Geometry. { 1st Freehand Drawing.
			5 Wise, H., Corporal. { a	20	20	20	20	
			4 Warteke, A., Sergeant. { a	1	1	1	1	

a Allowed to count. b Not allowed to count. (Columns Nos. 9 Chemistry, 10 Electricity, 11 Geology, 12, 13, 15 Civil Engineering, 16 Architecture, 17 and 18, being in blank, are omitted.)



ROYAL MILITARY COLLEGE OF CANADA.—Examination Return, **Fourth Class—Combined Subjects**—From January to June, 1879.

NOTE.—All marks obtained, whether allowed to count or not, are entered.

Term.	(Class.)	Order in Class before Examination, Aggregate from date of joining.	Names in Alphabetical Order, and Rank.	Mathematics.		Fortification and Military Engineering.		Theory and Construction of Artillery.		Military History.		Military Topography and Civil Survey- ing.		Geometrical Drawing and Descriptive Geometry.		French.	
				Voluntary.	Total.	Voluntary.	Total.	Voluntary.	Total.	Strategy and Tactics.	Military Ad- ministration and Law.	4	5	6	7		
				Obligatory.		Obligatory.		Obligatory.				Obligatory.	Voluntary.	Obligatory.	Voluntary.	Obligatory.	Voluntary.
5	4	6	Clark, G., Cadet.....	645	283	472	950	1,422	794	550	1,344	542	542	542	247	190	190
6	4	7	Dixon, F., do.....	638	302	21	323	349	685	429	1,133	532	532	532	226	112	112
5	4	8	Doucet, A., Lance Corporal. a	604	312	45	357	328	697	468	1,165	499	499	499	283	238	238
5	4	4	Gibson, J., Cadet.....	763	326	83	409	337	781	427	1,173	583	583	289	289	165	165
5	4	1	Laurie, R., Lance Corporal.. a	978	337	104	456	539	915	535	1,144	676	676	347	61	408	159
6	4	5	Rivers, V., Corporal.....	648	347	96	443	493	865	547	1,344	719	719	312	312	160	160
5	4	3	Ross, A., Lance Corporal.... a	797	364	57	421	479	885	529	1,273	714	714	376	376	143	143
5	4	2	Van Straubenzee, A., { a	890	355	30	312	379	565	548	1,336	649	649	296	10	366	170
5	4		Lance Corporal.....	1,275	282	30	312	379	565	944	782	.....	.....	.....	.....	170	170
			Maximum marks allotted.....	1,200	800	2,000	600	1,600	900	600	1,500	900	900	900	200	250	250
			Minimum marks allowed to count.....	600	.....	.....	300	.....	450	300	750	450	450	500	.....	83	.....
				645	283	472	950	1,422	794	550	1,344	542	542	542	247	190	190
				638	302	21	323	349	685	429	1,133	532	532	532	226	112	112
				604	312	45	357	328	697	468	1,165	499	499	499	283	238	238
				763	326	83	409	337	781	427	1,173	583	583	289	289	165	165
				978	337	104	456	539	915	535	1,144	676	676	347	61	408	159
				648	347	96	443	493	865	547	1,344	719	719	312	312	160	160
				797	364	57	421	479	885	529	1,273	714	714	376	376	143	143
				890	355	30	312	379	565	548	1,336	649	649	296	10	366	170

*a* Allowed to count. *b* Not allowed to count.

APPENDIX—C. (2).—Royal Military College of Canada—Examination Return, Fourth Class, &c.—Continued.

Term.	Class.	Order in Class before Examination, aggregate from date of joining.	Names in Alphabetical Order, and Rank.	German.			Freehand Drawing and Painting.			Drills and Exercises.			Conduct and Discipline.			Grand Total of Columns 1 to 20.	Order in Class after Examination.	REMARKS.	
				Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Drills.	Equitation.	Exercises.	Conduct.	N.O. Officers.	Discipline.	Total.			
			Maximum marks allotted .....	.....	250	250	300	.....	300	100	30	130	200	125	75	325	8,555		
			Minimum marks allowed to count .....	.....	83	100	65	.....	.....	65	.....	.....	66	.....	.....	.....	1,308		
5	4	6	Clark, G., Cadet.....	a	.....	.....	223	.....	223	88	25	113	171	.....	.....	171	5,180	5	2nd Artillery, 1st (e.g.) Military History, 2nd French.
6	4	7	Dixon, F., do .....	a	.....	.....	188	.....	188	63	.....	63	195	.....	.....	195	4,444	7	1st French, 2nd Freehand Drawing.
5	4	8	Doucet, A., Lance Corp'l. a .....	a	101	101	238	.....	238	100	30	130	200	62	262	262	4,205	8	
5	4	4	Gibson, J., Cadet ..... { a .....	{ a	.....	7	178	.....	178	100	23	123	200	.....	.....	200	5,001	6	
5	4	1	Laurie, R., Lance Corp'l. a .....	a	176	176	352	.....	352	100	13	113	172	62	234	234	6,306	1	{ 1st in Class. 1st Mathematics, 1st Artillery, 1st Descriptive Geometry, 1st German.
6	4	5	Rivers, V., Corporal.....	.....	.....	.....	233	.....	233	100	.....	100	198	38	236	236	5,583	4	2nd Fortification, 1st (e.g.) Military History, 1st Military Topography.
5	4	3	Ross, A., Lance Corporal.....	.....	.....	.....	255	.....	255	100	30	130	200	38	238	238	5,711	3	2nd Military Topography, 2nd Descriptive Geometry, 1st Freehand Drawing.
5	4	2	Van Straubenzie, A., { a .....	{ a	167	167	334	.....	334	100	30	130	200	62	262	262	5,719	2	{ 2nd Mathematics, 2nd Military History, 2nd German.

*a* Allowed to count. *b* Not allowed to count.  
17 and 18, being in blank, are omitted.)

(Columns Nos. 9 Chemistry, 10 Electricity, 11 Geology, 12, 13, 15 Civil Engineering, 16 Architecture,



ROYAL MILITARY COLLEGE OF CANADA.—Examination Return, **Fifth Class**—COMBINED SUBJECTS—From January to June, 1879.

NOTE.—All marks obtained, whether allowed to count or not, are entered.

Term.	Class.	Order in Class before Examination, aggregate from date of joining.	Names in Alphabetical Order, and Rank.	Mathematics.		Military Engineering.		Theory and Construction of Artillery.		Military History.		Military Topography and Civil Surveying.		Geometrical Drawing and Descriptive Geometry.		French.	
				Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.
			Maximum marks allotted .....	1,100	600	1,700	400	100	500	400	400	700	350	300	500	200	200
			Minimum marks allowed to count .....	550	...	...	200	...	...	200	...	350	175	100	...	66	...
5	5	4	Bridges, W., Lance Corp'l. { <sup>a</sup>	...	...	...	...	15	15	...	...	...	...	...	...	...	...
4	5	1	Campbell, H., do { <sup>a</sup>	901	435	1,336	322	57	379	318	40	155	15	86	86	12	12
5	5	2	Coryell, J., Cadet. { <sup>b</sup>	769	228	997	266	20	286	303	303	616	182	232	356	160	160
6	5	8	Davis, F., Lance Corporal. { <sup>a</sup>	669	234	1,003	...	68	330	305	305	495	281	168	202	122	122
5	5	7	Duncombe, W., Cadet. { <sup>a</sup>	...	...	550	...	200	200	200	200	495	217	50	217	144	144
6	5	5	Irving, L., Batt. Sergt.-Mjr. { <sup>a</sup>	...	...	...	...	40	40	...	...	...	175	...	150	...	66
6	5	3	Reed, T., Corporal. { <sup>a</sup>	458	...	458	292	53	345	...	200	454	...	...	146	113	113
4	5	9	Shanly, C., Lance Corporal { <sup>a</sup>	449	...	550	...	18	26	253	253	560	...	...	150	...	66
4	5	6	Shaw, G., Cadet. { <sup>a</sup>	589	...	589	219	...	219	295	295	516	...	...	167	149	149

<sup>a</sup> Allowed to count. <sup>b</sup> Not allowed to count.APPENDIX—C. (3).—Royal Military College of Canada—Examination Return, **Fifth Class**, &c.—Continued.

Term.	Class.	Order in Class before Examination, aggregate from date of joining.	Names in Alphabetical Order, and Rank.	German.			Freehand Drawing and Painting.			Drills and Exercises.			Conduct and Discipline.			Grand Total of Columns 1 to 20.	Order in Class after Examination. Result of Examination only.	REMARKS.		
				Obligatory.	Voluntary.	Total.	Obligatory.	Voluntary.	Total.	Drills.	Equitation.	Exercises.	Total.	Conduct.	N.-O. Officers.	20 Total.				
			Maximum marks allotted.....	200	200	200	300	.....	300	100	...	30	130	200	66	125 or 75 or 50	325 or 275 or 250	5,805		
			Minimum marks allowed to count .....	66	.....	.....	109	.....	.....	65	.....	.....	.....	.....	.....	.....	.....	1,791		
5	5	4	Bridges, W., Lance Corp'l { <sup>a</sup> <sup>b</sup>	.....	.....	.....	33	.....	.....	50	20	70	185	62	247	62	247	332	9	{ Not qualified Mathematics, Fortification, Military History, Military Topography, Descriptive Geometry, Freehand Drawing, French, Artillery. Discharged at own request and that of parent, 27th June, 1879. 1st in Class.
4	5	1	Campbell, H., do { <sup>a</sup>	.....	135	135	163	.....	163	100	30	130	200	62	262	62	262	4,127	1	
5	5	2	Coryell, J., Cadet..... { <sup>a</sup> <sup>b</sup>	.....	115	115	110	.....	110	76	20	96	195	.....	195	.....	195	3,613	2	{ 1st Mathematics, 1st Fortification, 1st Art'y, 1st D. Geometry, 1st French, 2nd German. 1st Mil. History, 1st Mil. Topography, 2nd Mathematics, 2nd Artillery.
6	5	8	Davis, F., Lance Corporal. { <sup>a</sup> <sup>b</sup>	.....	.....	.....	170	.....	170	88	.....	88	198	25	223	25	223	3,233	3	
5	5	7	Duncombe, W., Cadet..... { <sup>a</sup> <sup>b</sup>	.....	.....	.....	.....	.....	.....	127	.....	.....	106	.....	192	.....	192	2,366	6	{ 2nd Military History, 2nd Mil. Topography, 2nd Descriptive Geometry. Absent during Exam'n on leave. Min. marks allotted in accordance with regulations.
6	5	5	Irving, L., Batt. Sgt.-Mjr. { <sup>a</sup> <sup>b</sup>	.....	.....	.....	152	.....	152	103	.....	.....	100	200	50	250	503	8		
6	5	3	Reed, T., Corporal..... { <sup>a</sup> <sup>b</sup>	.....	.....	.....	.....	.....	.....	127	.....	.....	76	.....	.....	.....	234	2,378	5	{ Not qualified Mathematics. Absent during Exam'n on leave. Min. marks allotted in accordance with regulations.
4	5	9	Shanly, C., Lance Corp'l { <sup>a</sup> <sup>b</sup>	.....	23	23	240	.....	240	100	30	130	200	62	262	62	262	410	7	
4	5	6	Shaw, G., Cadet..... { <sup>a</sup> <sup>b</sup>	.....	1	1	182	.....	182	88	20	108	190	.....	190	.....	190	2,776	4	{ Not qualified Mathematics. Absent during Exam'n on leave. Min. marks allotted in accordance with regulations.
				.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,790	.....	

<sup>a</sup> Allowed to count. <sup>b</sup> Not allowed to count. (Columns Nos. 9 Chemistry, 10 Electricity, 11 Geology, 12, 13, 15 Civil Engineering, 16 Architecture, 17 and 18, being in blank, are omitted.)



## ROYAL MILITARY COLLEGE OF CANADA.—Examination Return, Sixth Class—COMBINED SUBJECTS—From January to June, 1879.

NOTE.—All marks obtained, whether allowed to count or not, are entered.

Term.	Class.	Order in Class before Examination, aggregate from date of joining.	Names in Alphabetical Order, and Rank.	Mathematics.		Military Engineering.		Theory and Construction of Artillery.		Military History.		Geometrical Drawing and Descriptive Geometry.		French.	
				Obligatory.	Voluntary.	Obligatory.	Voluntary.	Obligatory.	Voluntary.	Obligatory.	Voluntary.	Obligatory.	Voluntary.	Obligatory.	Voluntary.
			Maximum marks allotted .....	300	400	1,300	450	200	100	400	250	200	100	300	150
			Minimum marks allowed to count.....	450	.....	.....	175	100	.....	200	125	66	.....	50	.....
3	6	11	Cartwright, R., Cadet.....	597	.....	597	223	117	.....	224	129	99	.....	74	.....
4	6	2	Daniel, A., do .....	571	.....	571	255	118	.....	256	132	170	.....	73	.....
4	6	4	Ford, E., do .....	686	46	732	207	129	.....	317	158	158	97	108	.....
4	6	7	Greig, W., do .....	561	.....	561	6187	107	.....	295	159	159	91	107	.....
3	6	10	Hogan, H., do .....	593	.....	593	252	125	.....	303	179	123	.....	107	.....
4	6	9	Hubbell, E., do .....	564	.....	564	189	125	.....	207	144	144	97	106	.....
3	6	1	Mackay, H., do .....	868	340	1,208	312	168	.....	387	239	182	76	127	.....
3	6	3	McElhinney, W., do .....	719	.....	719	209	141	.....	311	185	128	.....	117	.....
6	6	6	Perley, G., Lance Corporal.....	.....	.....	.....	30	.....	.....	.....	.....	.....	.....	.....	.....
3	6	8	Sears, J., Cadet.....	334	.....	334	193	119	.....	222	158	158	111	77	.....
3	6	5	Yates, B., do .....	450	.....	450	246	135	.....	317	168	168	125	79	.....
3	6	5	Yates, B., do .....	645	34	679	212	125	.....	298	176	176	124	111	.....

a Allowed to count. b Not allowed to count.

## APPENDIX—C. (4).—Royal Military College of Canada—Examination Return, Sixth Class, &amp;c.—Continued.

Term.	Class.	(Order in Class before Examination, aggregate from date of joining.	Names in Alphabetical Order, and Rank.	German.		Freehand Drawing and Painting.		Drills and Exercises.			Conduct and Discipline.		Grand Total of Columns 1 to 20.	Order in Class after Examination.	REMARKS.	
				Obligatory.	Voluntary.	Obligatory.	Voluntary.	Drills.	Equitation.	Exercises.	Conduct.	N.-C. Officers.	Total.			
			Maximum marks allotted.....	...	150	150	300	100	...	30	200	50	250	3,880		
			Minimum marks allowed to count.....	...	50	...	100	65	...	...	66	...	...	1,125		
3	6	11	Cartwright, R., Cadet .....	...	...	13	133	50	20	70	187	...	187	1,853	9	2nd Fortification, 2nd Descriptive Geometry. 2nd Mathematics, 2nd Military History.
4	6	2	Daniel, A., do .....	a	...	...	178	100	30	130	197	...	...	1,866	6	
4	6	4	Ford, E., do .....	a	...	...	150	100	20	120	194	...	194	2,221	4	
4	6	7	Greig, W., do .....	a	...	8	137	88	20	108	188	...	188	2,229	...	
4	6	9	Hogan, H., do .....	a	...	...	170	88	20	108	196	...	196	1,753	10	Not qualified Fortification. 2nd Artillery.
3	6	10	Hubbell, E., do .....	a	...	...	165	100	30	130	141	...	141	1,940	...	
4	6	9	Hubbell, E., do .....	b	11	11	165	100	30	130	141	...	141	1,868	5	{ 1st in Class. 1st in Mathematics, Fortification, Artillery, Military History, Military Topography, Descriptive Geometry, French, Freehand Drawing. 2nd Military Topography, French, German. Not qualified Mathematics.
3	6	1	Mackay, H., do .....	a	...	...	196	88	20	108	187	...	187	1,879	8	
3	6	3	McElhinney, W., do .....	a	...	42	165	88	20	108	198	...	198	3,255	1	{ 1st German, 2nd Freehand Drawing.
3	6	6	Perley, G., Lance Corporal {	a	...	...	145	100	20	100	200	25	225	2,362	2	
6	6	6	Sears, J., Cadet..... {	b	...	...	177	100	20	120	192	...	192	355	11	
3	6	8	Yates, B., do .....	b	12	12	190	88	25	113	196	...	196	1,714	...	
3	6	5	Yates, B., do .....	b	60	60	190	88	25	113	196	...	196	2,021	7	{ 1st German, 2nd Freehand Drawing.
3	6	5	Yates, B., do .....	b	60	60	190	88	25	113	196	...	196	2,281	3	
3	6	5	Yates, B., do .....	b	60	60	190	88	25	113	196	...	196	2,294	...	

a Allowed to count. b Not allowed to count. 17 and 18, being in blank, are omitted.)

(Columns Nos. 9 Chemistry, 10 Electricity, 11 Geology, 12, 13, 15 Civil Engineering, 16 Architecture,



## ROYAL MILITARY COLLEGE of Canada.—Examination Return, Seventh

NOTE.—All marks obtained, whether

Term.	Class.	Order in Class before Examination, aggregate from date of joining.	Names in Alphabetical Order, and Rank.	Mathematics.			Military Engineering.			Military Topography and Civil Surveying.			Geometrical Drawing and Descriptive Geometry.			French.		
				Obligatory.	Voluntary.	1	Obligatory.	Voluntary.	2	Obligatory.	Voluntary.	5	Obligatory.	Voluntary.	6	Obligatory.	Voluntary.	7
			Max. marks allotted .....	800	200	1,000	300	...	300	150	...	150	150	100	250	100	...	100
			Min. marks allowed to count. ....	400	...	...	150	...	...	75	...	...	50	...	...	33	...	...
2		10	Anderson, F., Cadet. a	556	41	597	185	...	185	102	...	102	71	...	71	59	...	59
2		14	Avery, R., do .. a	438	...	438	191	...	191	104	...	104	94	...	94	51	...	51
2		15	Clark, H., do .. a	413	...	413	177	...	177	92	...	92	92	...	92	48	...	48
4		1	Drury, E., do { a	450	...	450	195	...	195	123	...	123	91	40	131	69	...	69
2		5	Duff, G., do .. a	688	42	730	187	...	187	122	...	122	91	...	91	66	...	66
2		3	Duffus, G., do .. a	749	145	894	258	...	258	144	...	144	127	76	203	73	...	73
2		12	Gordon, S., do { a	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4		6	Graham, W., do { b	358	...	358	151	...	151	91	...	91	60	...	60	52	...	52
2		11	Greenwood, H., do { a	318	...	318	198	...	198	136	...	136	91	61	152	53	...	53
2		7	Hodgins, A., do { a	566	...	566	209	...	209	110	...	110	98	...	98	45	...	45
4		2	Kent, R., do { b	462	...	462	224	...	224	121	...	121	105	...	105	51	...	51
2		8	Kirkpatrick, A., do { a	...	...	...	...	...	...	...	...	...	10	115	...	...	...	...
2		9	Powell, F., do .. a	344	...	344	152	...	152	119	...	119	96	58	154	65	...	65
2		4	Taylor, E., do .. a	560	...	560	238	...	238	141	...	141	127	27	154	58	...	58
2		13	Wurtele, E., do { a	400	...	400	...	...	150	...	...	75	...	50	...	...	...	33
2		13	Wurtele, E., do { b	...	...	...	...	...	...	...	...	...	25	25	...	...	...	77
2		13	Wurtele, E., do { b	283	...	283	181	...	181	61	...	61	90	43	133	77	...	77

a Allowed to count. b Not allowed to count. (Columns Nos. 3 Theory and Construction of and 18, being in blank, are omitted.)

## DIX—C. (5).

Class—COMBINED SUBJECTS—From January to June, 1879.

allowed to count or not, are entered.

German.			Freehand Drawing and Painting.			Drills and Exercises.				Conduct and Discipline.			Grand Total of Columns 1 to 20.	Order in Class after Examination. Result of Examination only.	REMARKS.
Obligatory.	Voluntary.	8 Total.	Obligatory.	Voluntary.	14 Total.	Drills.	Equitation.	Exercises.	19 Total.	Conduct.	N.-C. Officers. Discipline.	20 Total.			
100	100	100	200	...	200	100	...	30	130	200	.....	200	2,430		
33	33	.....	66	...	.....	65			65	66	.....	66	272		
.....	39	39	112	...	112	100	...	25	125	200	.....	200	1,490	5	If not qualified, Subject to be specified.  If 1st or 2nd in the Class in any Subject, the same to be specified.
.....	.....	.....	115	...	115	100	...	20	120	185	.....	185	1,298	9	
.....	.....	.....	120	...	120	88	...	15	103	151	.....	151	1,196	10	
.....	.....	.....	110	...	110	88	...	20	108	200	.....	200	1,386	} 8	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,398		
.....	47	47	107	...	107	100	...	25	125	194	.....	194	1,669	3	
.....	86	86	145	...	145	100	...	25	125	199	.....	199	2,127	1	
.....	.....	.....	.....	.....	.....	100	...	20	120	200	.....	200	320	14	
.....	.....	.....	115	...	115	.....	.....	.....	.....	.....	.....	.....	1,147	.....	
.....	.....	.....	.....	.....	.....	88	...	20	108	196	.....	196	365	12	
.....	.....	.....	125	...	125	.....	.....	.....	.....	.....	.....	.....	1,286	.....	
.....	.....	.....	110	...	110	100	...	25	125	198	.....	198	1,461	7	
.....	41	41	145	...	145	100	...	20	120	194	.....	194	1,463	6	
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,473	.....	
.....	.....	.....	.....	.....	.....	75	...	20	95	200	.....	200	335	13	
.....	.....	.....	130	...	130	.....	.....	.....	.....	.....	.....	.....	1,259	.....	
.....	.....	.....	135	...	135	100	...	30	130	200	.....	200	1,616	4	
.....	.....	.....	.....	...	71	.....	.....	.....	91	.....	.....	200	1,070	11	
.....	80	80	125	...	125	100	...	30	130	199	.....	199	1,974	2	
.....	.....	.....	.....	...	120	88	...	25	113	148	.....	148	286	15	
.....	.....	.....	120	...	.....	.....	.....	.....	.....	.....	.....	.....	1,116	.....	

Artillery, 4 Military History, 9 Chemistry, 10 Electricity, 11 Geology, 12, 13, 15 Civil Engineering, 17



## APPEN

## ROYAL MILITARY COLLEGE of Canada.—Examination Return, Eighth

NOTE.—All marks obtained, whether

Term.	Class.	Order in Class before Examination, aggregate from date of joining.	Names in Alphabetical Order, and Rank.	Mathematics.			Geometrical Drawing and Descriptive Geometry.			French.			German.		
				Obligatory.	Voluntary.	1	Obligatory.	Voluntary.	6	Obligatory.	Voluntary.	7	Obligatory.	Voluntary.	8
			Maximum marks allotted.....	700	100	800	100	.....	100	100	...	100	100	100	100
			Minimum marks allowed to count....	350	.....	.....	33	.....	.....	33	.....	.....	33	33	.....
1	8th Class.	14	Benson, T., Cadet.....	a	307	307	44	44	47	47	.....	33	33	33	33
1		16	Denison, E., do .....	a	415	415	52	52	41	41	.....	.....	.....	.....	.....
1		7	Hooper, G., do .....	a	446	446	36	36	55	55	.....	35	35	35	35
1		3	Joly, A., do .....	a	233	233	47	47	59	59	.....	8	8	8	8
2		2	Jones, W., do .....	a	98	98	63	63	50	50	.....	.....	.....	.....	.....
1		15	Laidlaw, G., do .....	a	413	413	44	44	69	69	.....	15	15	15	15
1		4	Latimer, F., do .....	a	647	67	714	84	84	65	65	66	66	66	66
1		9	Ogilvie, G., do .....	a	454	451	38	38	36	36	.....	19	19	19	19
1		8	Osburn, H., do .....	a	542	542	39	39	43	43	.....	12	12	12	12
1		6	Robinson, W., do .....	a	663	90	753	68	68	53	53	49	49	49	49
1		5	Skinner, F., do .....	a	634	40	674	84	84	83	83	91	91	91	91
2		1	Stairs, W., do .....	a	426	426	72	72	84	84	.....	84	84	84	84
1		10	Tomlinson, A., do .....	a	359	359	66	66	67	67	.....	14	14	14	14
1		12	Wetmore, A., do .....	a	587	587	61	61	57	57	.....	21	21	21	21
1		13	Wood, G., do .....	a	592	46	638	78	78	77	77	93	93	93	93
1		11	Wood, Z., do .....	a	415	415	64	64	79	79	.....	.....	.....	.....	.....

a Allowed to count. b Not allowed to count. (Columns Nos. 2 Military Engineering, 3 Theory 10 Electricity, 11 Geology, 12, 13, 15 Civil Engineering, 17 and 18, being in blank, are omitted.)

## DIX—C. (6).

Class—COMBINED SUBJECTS—From January to June, 1879.

allowed to count or not, are entered.

Freehand Drawing and Painting.			Drills and Exercises.				Conduct and Discipline.			Grand Total of Columns 1 to 20.	Order in Class after Examination. Result of Examination only.	REMARKS.
Obligatory.	Voluntary.	14 Total.	Drills.	Equitation.	Exercises.	19 Total.	Conduct.	N.-C. Officers. Discipline.	20 Total.			
100	.....	100	50	...	30	130 or 80	200	.....	200	1,530		
33	.....	.....	40			65 or 40	66	.....	66	174		
65	65	65	50	...	18	68	200	.....	200	301	14	} Not qualified Mathematics.
65	65	65	50	...	23	73	200	.....	200	764	11	
60	60	60	50	...	25	75	197	.....	197	904	9	
60	60	60	38	...	20	58	190	.....	190	922	16	} Not qualified Mathematics.
60	60	60	76	...	20	96	196	.....	196	248	15	
45	45	45	25	...	20	45	137	.....	137	655	13	
60	60	60	50	...	23	73	199	.....	199	292	2	} Not qualified Mathematics.
60	60	60	38	...	20	58	200	.....	200	548	13	
65	65	65	25	...	20	45	197	.....	197	768	10	
65	65	65	50	...	25	75	188	.....	188	783	8	} 2nd Mathematics, 1st (e.g.) Geom. Draw'g.
95	95	95	50	...	25	75	200	.....	200	879	3	
85	85	85	100	...	20	120	196	.....	196	931	1	
65	65	65	38	...	25	63	188	.....	188	943	5	} 1st Mathematics. { 1st in Class. { 1st (e.g.) Geom. Drawing, 2nd French, 2nd German.
78	78	78	50	...	25	75	197	.....	197	1,251	12	
80	80	80	50	...	18	68	172	.....	172	1,302	6	
70	70	70	50	...	20	70	189	.....	189	808	4	} 2nd Geometrical Drawing.
										825	7	
										1,055	1,113	
										980	7	} 1st German.
										1,000		

and Construction of Artillery, 4 Military History, 5 Military Topography and Surveying, 9 Chemistry,



## APPENDIX D.

## ROYAL MILITARY COLLEGE OF CANADA.

## Class Roll—Gentlemen Cadets.

## I.

The Cadets of Class II., who qualify at the Winter Examination of 1879, will pass into Class I. at the commencement of the following term, viz., 4th February, 1880.

This will complete the organization of the College with eight classes, corresponding with the eight terms required to complete the full course of study.

## II.

Regimental Number.	NAMES. — ALPHABETICALLY.	Rank.	Term.	No. of Marks obtained from date of joining to 20th June, 1879.	Order of Class Merit.
14	Cochrane, J.	Sergeant	7	15,263	11
4	Davis, W.	do	7	17,297	7
9	Desbrisay, C.	Co. Sergt.-Major	7	17,271	8
12	Fairbank, C.	Sergeant	7	16,693	9
2	Freer, H.	Cadet	7	16,288	10
17	Keefer, H.	Co. Sergt.-Major	7	17,406	6
18	McPherson, D.	Sergeant	7	22,768	2
13	Perry, A.	Co. Sergt.-Major	7	24,836	1
11	Spelman, J.	Sergeant	7	22,153	3
3	Wise, H.	do	7	18,215	4
1	Wurtele, A.	do	7	18,190	5

## III.

24	Clark, G.	Lance Corporal	6	12,183	6
15	Dixon, F.	do	7	11,152	7
21	Doucet, A.	Corporal	6	9,595	8
19	Gibson, J.	Cadet	6	12,677	5
20	Laurie, R.	Corporal	6	14,600	1
10	Rivers, V.	Sergeant	7	13,122	4
22	Ross, A.	Corporal	6	13,656	2 E
23	Van Straubenzee, A.	do	6	13,656	2 E

## IV.

30	Campbell, H.	Corporal	5	9,847	1
28	Coryell, J.	Lance Corporal	6	9,110	2
8	Davis, F.	Sergeant	7	7,483	3
26	Dunscombe, W.	Lance Corporal	6	6,674	7
5	Reed, T.	Sergeant	7	7,257	4 E
31	Shaw, G.	Lance Corporal	5	7,257	4 E

## APPENDIX D.—Continued.

## ROYAL MILITARY COLLEGE OF CANADA.

## Class Roll—Gentlemen Cadets—Continued.

## V.

Regimental Number.	NAMES. — ALPHABETICALLY.	Rank.	Term.	No. of Marks obtained from date of joining to 20th June, 1879.	Order of Class Merit.
41	Cartwright, R.	Cadet	4	3,590	12
34	Daniel, A.	Lance Corporal	5	4,684	5
33	Ford, E.	Cadet	5	4,668	6
32	Greig, W.	do	5	4,061	11
40	Hogan, H.	Lance Corporal	4	4,382	7
36	Hubbell, E.	do	5	4,121	10
7	Irving, L.	Battn. Sergt.-Major	7	4,989	1
39	Mackay, H.	Lance Corporal	4	6,455	2
44	McElhinney, W.	do	4	4,871	3
43	Sears, J.	Cadet	4	4,264	9
27	Shanly, C.	Lance Corporal	5	4,380	8
42	Yates, B.	Cadet	4	4,693	4

## VI.

55	Anderson, F.	Cadet	3	2,358	8
50	Avery, R.	do	3	2,054	10
53	Clark, H.	do	3	1,940	12
37	Drury, E.	do	5	2,774	4
51	Duff, G.	do	3	2,683	5
58	Duffus, G.	do	3	3,351	2
57	Greenwood, H.	do	3	2,307	9
46	Hodgins, A.	do	3	2,371	7
48	Kirkpatrick, A.	do	3	2,516	6
16	Perley, G.	Corporal	7	2,738	1
49	Powell, F.	Cadet	3	1,968	11
45	Taylor, E.	do	3	3,183	3

## VII.

72	Denison, E.	Cadet	2	846	14 E
56	Gordon, S.	do	3	1,132	7
38	Graham, W.	do	5	1,330	2
63	Hooper, G.	do	2	904	13
35	Kent, R.	do	5	1,695	1
71	Laidlaw, G.	do	2	768	17
60	Latimer, F.	do	2	1,271	5
65	Ogilvie, G.	do	2	846	14 E
64	Osburn, H.	do	2	931	12
62	Robinson, W.	do	2	1,251	6
61	Skinner, F.	do	2	1,302	4
52	Stairs, W.	do	3	1,394	3
66	Tomlinson, A.	do	2	808	16
68	Wetmore, A.	do	2	1,055	9
59	Wood, G.	do	2	1,113	8
67	Wood, Z.	do	2	990	11
47	Wurtele, E.	do	3	1,054	10



Class Roll—Gentlemen Cadets—*Continued.*

## APPENDIX F.

ROYAL MILITARY COLLEGE OF CANADA.

### Detail Roll of Gentlemen Cadets.

Regimental No.	NAMES. — ALPHABETICALLY.	Date of joining.	Age on joining.	Rank and date of appointment to present Rank of N.-C. Officer.	Term.	Class.	No. of Marks counted from date of joining to June, 1879.	Company.	Half company.	Section.	Mess squad.	No. of room.	No. of study desk.	No. of arms and accoutrements.	Province from which joined.	Remarks.
55	Anderson, F.	Sept. 5, '78	17	Cadet.....	3	6	2,358	C	L	3	8	N. 1	60	55	Ontario.	
56	Avery, R.	do	18	do	3	6	2,054	B	L	3	5	50	52	50	do	
70	Benson, T.	Feb. 8, '79	18	do	2	8	301	A	L	3	2	2	63	70	do	
73	Campbell, D.	Sept. 5, '79	17	do	1	8	...	A	R	1	12	31	73	...	do	
80	Campbell, H.	do	17	do	5	...	...	C	R	4	7	N. 5	32	30	N. Brunswick.	
81	Campbell, K.	do 30, '79	16	do	1	8	9,847	C	R	4	3	44	15	81	Quebec.	
82	Caruthers, W.	do	17	Cadet.....	1	8	...	A	R	1	2	10	18	82	Ontario.	
83	Cartwright, R.	do 5, '79	17	do	1	8	...	A	R	4	2	10	18	82	Ontario.	
24	Clark, G.	Feb. 1, '78	17	do	4	5	3,990	A	L	2	1	3	40	41	do	
53	Clark, H.	April 2, '77	16	Lance Corporal, Aug. 2, 1879.	6	3	12,183	A	L	4	2	17	19	24	do	
23	Cochrane, J.	Sept. 5, '78	17	Cadet.....	9	6	1,940	A	B	2	3	40	47	53	do	
14	Cochrane, J.	June 1, '76	15	Sergeant, Aug. 6, 1879.	7	2	15,263	C	R	2	6	52	10	14	do	
28	Coryell, J.	April 10, '77	16	Lance Corporal, Sept. 19, 1879.	6	4	9,110	B	L	4	1	4	31	28	do	
34	Daniel, A.	Sept. 8, '77	16	do Oct. 30, 1879.	5	5	4,684	O	R	1	7	N. 9	37	34	N. Brunswick.	
8	Davis, F.	June 1, '76	18	Sergeant, Oct. 30, 1879.	7	4	7,483	O	B	1	5	45	13	8	Ontario.	
4	Davis, W.	do	19	do Aug. 3, 1879.	7	2	17,294	O	L	...	8	N. 8	6	4	do	
72	Denison, E.	Feb. 8, '79	18	Cadet.....	2	7	846	B	L	4	5	26	2	72	do	
9	Des Brisay, O.	June 1, '76	15	Co. Sgt.-Major, Oct. 30, 1879.	7	2	17,271	A	...	...	3	1	4	...	N. Brunswick.	
15	Dixon, F.	do	19	Lance Corporal, Aug. 3, 1879.	7	3	11,152	A	R	1	1	8	17	15	Ontario.	
21	Doucet, A.	Feb. 2, '77	17	do	6	3	9,695	A	R	2	4	21	31	21	Quebec.	
37	Drury, E.	Sept. 8, '77	18	Cadet.....	5	6	2,774	B	R	1	3	28	51	37	N. Brunswick.	
51	Duff, G.	Sept. 5, '78	15	do	3	6	2,831	C	R	1	6	42	65	51	Ontario.	
58	Dufus, G.	do	15	do	3	6	3,351	C	R	2	4	37	49	58	Nova Scotia.	
26	Dunscomb, W.	April 2, '77	14	Lance Corporal, Dec. 9, 1879.	6	4	6,674	A	R	2	1	20	23	26	Quebec.	
75	Evans, A.	Sept. 5, '79	17	Cadet.....	1	8	...	O	L	3	N. 6	17	75	75	Ontario.	
12	Fairbank, O.	June 1, '76	17	Sergeant, Aug. 4, 1879.	7	2	16,683	A	R	...	3	3	14	14	do	
33	Ford, E.	Sept. 8, '77	15	Cadet.....	5	5	4,668	C	L	4	7	54	33	33	do	
32	Freer, H.	June 1, '76	17	do	7	2	16,283	C	B	2	4	25	1	2	do	
19	Gibson, J.	Feb. 2, '77	17	do	6	3	12,577	B	R	1	4	60	20	19	Quebec.	

E. O. HEWETT, Lieut.-Colonel,  
*Commandant, Royal Military College.*

KINGSTON, 22nd December, 1879.



ROYAL MILITARY COLLEGE OF CANADA.  
Detail Roll of Gentlemen Cadets.—Continued.

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Regimental No.	NAMES. — ALPHABETICALLY.	Date of joining.	Age on joining.	Rank and date of appointment to present Rank of N.-C. Officer.	Term.	Class.	No. of Marks counted from date of joining to June, 1879.	Company.	Half company.	Section.	Mess squad.	No. of room.	No. of study desk.	No. of arms and accoutrements.	Province from which joined.	Remarks.
			yrs. mo.													
56	Gordon, S.	Sept. 5, '78	18 0	Cadet.....	3	7	1,132	A	R	1	1	18	54	56	Ontario.	
57	Graham, W.	Sept. 10, '77	19 0	do	5	7	1,330	A	R	2	1	15	45	38	do	
58	Greenwood, H.	Sept. 5, '78	17 4	do	3	6	2,307	C	R	2	6	N. 5	59	57	do	
59	Greig, W.	Sept. 8, '77	18 5	do	5	6	4,061	A	R	1	1	19	34	32	do	
60	Hesketh, J.	Sept. 5, '79	15 9	do	1	8	.....	B	R	1	1	29	19	80	do	
61	Hodgins, A.	Sept. 17, '78	17 6	do	3	6	2,371	A	L	3	7	23	56	6	do	
62	Hogan, H.	Sept. 1, '78	15 4	Lance Corporal, Dec. 11, 1879.	4	5	4,382	C	L	3	7	57	36	40	Quebec.	
63	Hooper, G.	Feb. 8, '79	16 6	Cadet.....	2	7	904	C	R	1	6	N. 5	5	63	do	
64	Hubbell, E.	Sept. 8, '77	15 10	Lance Corporal, Dec. 12, 1879.	5	5	4,121	B	L	4	5	35	57	36	Ontario.	
65	Irving, L.	June 1, '76	20 7	Bn. Sgt.-Major, Sept. 1, 1878.	7	5	4,989	.....	.....	.....	8	56	25	.....	do	
66	Joly, A.	Feb. 8, '79	16 4	Cadet.....	2	8	248	B	R	2	4	6	58	12	Quebec.	
67	Keefe, H.	June 1, '77	15 11	Co. Sgt.-Major, Sept. 1, 1878.	7	2	17,405	B	.....	.....	6	58	12	.....	Ontario.	
68	Kent, R.	Sept. 10, '77	15 5	Cadet.....	5	8	1,695	A	L	4	2	9	39	35	do	
69	Kirby, F.	Sept. 5, '79	17 5	do	1	8	2,516	B	R	1	4	39	7	74	do	
70	Kirkpatrick, A.	Sept. 8, '78	17 3	do	3	6	768	C	L	4	7	53	44	48	do	
71	Laidlaw, G.	Feb. 8, '79	18 3	do	2	7	.....	C	R	2	6	N. 6	8	71	do	
72	Lang, J.	Sept. 5, '79	20 0	do	1	8	.....	A	R	2	1	12	42	79	do	
73	Latimer, F.	Feb. 8, '79	18 6	do	2	7	1,271	A	R	1	3	6	11	60	do	
74	Laurie, R.	Feb. 8, '79	19 0	Corporal, Sept. 11, 1879.	6	3	14,609	A	R	2	3	22	15	20	Manitoba.	
75	McElhinney, W.	Feb. 1, '78	15 5	Lance Corporal, Dec. 10, 1879.	9	3	4,871	C	L	3	7	N. 6	38	44	Ontario.	
76	McPherson, D.	June 5, '76	18 3	Sergeant, Sept. 1, 1878.	4	5	22,768	A	L	.....	2	16	65	18	do	
77	Mackay, H.	Feb. 2, '78	19 10	Lance Corporal, Sept. 11, 1879.	7	2	6,455	A	L	.....	2	21	62	7	Quebec.	
78	Nanton, H.	Sept. 5, '79	16 2	Cadet.....	4	8	.....	C	R	1	6	N. 1	58	78	Ontario.	
79	Ogilvie, G.	Oct. 3, '79	18 2	do	1	8	846	C	R	2	8	49	27	84	do	
80	Osburn, H.	Feb. 8, '79	18 9	do	2	7	931	C	R	2	8	N. 1	22	65	do	
81	Perley, G.	June 1, '76	18 11	Corporal, Oct. 30, 1879.	2	7	2,738	B	L	4	3	30	24	64	N. Brunswick.	
82	Perry, A.	do	15 10	Co. Sgt.-Major, Aug. 1, 1879.	7	6	24,836	A	L	3	2	5	26	16	do	
83	Powell, F.	Sept. 5, '78	16 6	Cadet.....	3	4	1,968	A	L	3	2	11	63	49	Ontario.	
84	Reed, T.	June 1, '76	17 4	Sergeant, Sept. 11, 1879.	7	3	7,257	A	R	.....	8	N. 1	43	5	N. Brunswick.	
85	Rivers, V.	June 1, '76	16 4	do Aug. 5, 1879.	7	3	13,122	B	L	.....	4	59	66	10	Ontario.	
86	Robinson, W.	Feb. 8, '79	15 6	Cadet.....	2	8	1,251	B	R	1	4	31	41	62	N. Brunswick.	
87	Rosenburg, V.	Sept. 5, '79	16 9	do	1	8	.....	B	R	2	6	N. 6	16	22	do	
88	Ross, A.	Feb. 1, '77	17 11	Corporal, Aug. 2, 1879.	6	3	13,656	C	R	4	3	13	35	43	N. Brunswick.	
89	Sears, J.	Feb. 2, '77	16 9	Cadet.....	4	5	4,264	C	R	1	7	N. 9	27	27	Ontario.	
90	Shanly, C.	April 2, '77	17 3	Lance Corporal, Aug. 4, 1879.	5	5	7,257	A	L	3	3	7	28	31	Quebec.	
91	Shaw, G.	Sept. 8, '77	16 3	do	5	7	1,302	C	R	.....	8	47	24	61	Ontario.	
92	Skinner, F.	Feb. 8, '79	19 4	Cadet.....	2	7	22,153	C	R	4	7	N. 8	61	11	do	
93	Stairs, W.	June 1, '76	15 6	Sergeant, Aug. 2, 1879.	3	7	1,391	B	L	4	5	51	48	52	Nova Scotia	
94	Strange, H.	Sept. 5, '78	15 3	Cadet.....	8	6	3,183	C	R	.....	7	55	1	83	Quebec.	
95	Taylor, E.	Sept. 5, '78	20 0	do	1	8	808	A	L	4	3	27	46	45	do	
96	Tolson, A.	Feb. 8, '79	19 7	do	3	7	13,656	B	L	3	5	31	18	23	Ontario.	
97	Van Straubenzee, A.	April 2, '77	15 5	Corporal, Aug. 3, 1879.	2	6	1,055	B	L	3	5	32	18	23	do	
98	Wetmore, A.	Feb. 8, '79	17 4	Cadet.....	6	3	18,216	C	R	2	7	49	6	68	N. Brunswick.	
99	Wise, H.	June 1, '76	16 9	Sergeant, Aug. 1, 1879.	7	2	1,113	B	L	.....	5	34	3	3	Ontario.	
100	Wood, G.	Feb. 8, '79	17 1	Cadet.....	2	7	980	C	R	4	6	33	59	59	do	
101	Wood, Z.	Feb. 8, '79	18 3	do	2	7	18,190	R	L	4	8	N. 5	8	67	Nova Scotia.	
102	Wurtele, A.	June 1, '76	16 6	Sergeant, Jan. 18, 1878.	7	2	1,054	A	R	.....	1	24	41	1	Quebec.	
103	Wurtele, E.	Sept. 5, '78	18 7	Cadet.....	3	7	4,693	C	R	2	7	48	21	47	Ontario.	
104	Yates, B.	Feb. 1, '78	18 5	do	4	5	.....	B	L	3	6	38	67	42	do	

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E. O. HEWETT, Lieut.-Colonel,  
Commandant, Royal Military College.

KINGSTON, 22nd December, 1879.



## APPENDIX "F."

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879.  
3RD CLASS.

## MILITARY HISTORY.

TIME ALLOWED, 3 HOURS.

NUMBER OF MARKS, 790.

- (1) What branches of strategy does Hamley illustrate by :—
    - (1) The Marengo campaign.
    - (2) Moreau's campaign of 1800, 1st part.
    - (3) do do 2nd do.
    - (4) The Waterloo campaign.
  - (2) Mention any points that strike you particularly in the manner in which Napoleon planned and carried out the Marengo campaign.
  - (3) Draw a simple diagram, showing the lines of communication of both armies with respect to the armies themselves, when the latter fronted each other on the Danube in the 2nd part of the 1800 campaign.
  - (4) In this campaign how did Kray succeed in evading the French army and recovering his communications?
  - (5) What considerations decided Napoleon to select Belgium as his point of attack in 1815?
  - (6) What were the general plans of Napoleon and of the allies, respectively, in the Waterloo campaign?
  - (7) What mistakes are the leaders on both sides charged with committing in this campaign?
  - (8) Why is the defence of a long line of mountains difficult and dangerous? If it is necessary to hold such a line, what is the best method of doing so?
  - (9) What are the real uses of a mountain chain as a defensive obstacle?
  - (10) What are the real uses of fortresses, strategically speaking?
  - (11) What does Hamley lay down as the principles on which a system of fortresses or entrenched camps should be based.
- N. B.—Numbers 6 and 7 are alternative questions; and only three out of the last four need be answered.

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879.  
3RD CLASS.

## SURVEYING AND ASTRONOMY.

TIME ALLOWED 3 HOURS

NUMBER OF MARKS, 350.

- (1) A B is a base 3007 feet long, C and D are points at opposite sides of it. The following angles are measured:  $CAB=71^\circ, 10'$ ;  $CBA=69^\circ$ ;  $DAB=67^\circ, 30'$ ;  $DBA=80^\circ$ . Calculate the length of C D.
- (2) In levelling from A to B the following readings on the staff are observed with the spirit level :

Back reading.

Feet.  
8·7  
9·24  
1·05  
12·5

Forward reading.

Feet.  
1·75  
2·05  
8·95  
1·65

- What is the difference of level between A and B, and which is the highest?
- (3) What instruments are used for measuring horizontal angles, vertical angles, and angles in general, respectively?
  - (4) Explain the method of finding the index error of the sextant by means of the sun.
  - (5) What are the different adjustments of the theodolite?
  - (6) Explain the adjustment for collimation of the theodolite. If the instrument is out in this respect how does it affect vertical and horizontal angles respectively?
  - (7) In what respects is the ordinary transit superior to or inferior to the theodolite?
  - (8) In working with the plane table how can you ascertain if the instrument is correctly placed, as regards azimuth, at a station of which the position is unknown.
  - (9) The length of a degree of latitude being 69.15 miles, find the length of a degree of longitude at Kingston, the latitude of which is  $44^\circ 8'$ .
  - (10) At a certain place the meridian double altitude (corrected for refraction) of a particular star is found to be  $60^\circ 14'$  above the northern horizon. The star's declination is  $49^\circ 55'$  north. Find the latitude of the place.
  - (11) At a certain place the local mean time is 10 a.m. at the instant that a chronometer showing Greenwich mean time stands at 3h. 5m. 52s. p.m. What is the longitude of the place?

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879.  
3RD CLASS.

TIME ALLOWED, 3 HOURS.

## FRENCH.

TOTAL MARKS, 220

- (1) Conjugate the verbs "savoir, mettre, boire, naître."

(2) A qui avez-vous donné ce beau bouquet? De qui attendez-vous une lettre? Qui attendez-vous ce soir? Que faites-vous là? Avec quoi avez-vous ouvert la porte de ma chambre? Qu'est-ce qui vous empêche de venir demain? Quiconque n'observera pas cette loi sera puni? Ces deux hommes se craignent l'un l'autre. Nous eûmes beaucoup de pluie pendant notre voyage. Ces messieurs arrivèrent-ils à temps pour le concert? Il faut que je finisse ma lettre avant dîner, car si je ne la finissais pas, il serait trop tard après dîner. Je ne savais pas que vous dussiez tant d'argent; si je l'avais su, j'aurais été fort inquiet. Vous vous seriez exposés au plus grand danger, si vous vous étiez promenés sur cette route. Croyez-vous qu'il faille prendre une voiture. Où allez-vous? Irons-nous bientôt à la campagne? Envoyez-moi votre domestique, et je vous enverrai le livre que vous demandez. Nous mourrons comme nous avons vécu. Pourriez-vous me dire combien vaut cette maison? Quand verrez-vous le propriétaire? Il faut que je le sache afin que je puisse lui faire mes offres. Asseyez-vous un instant, je vais savoir si nous pourrons lui parler. Quand saurez-vous vos leçons? Je les saurai dans une demi-heure. J'aurais voulu que vous les sussiez plus tôt.

(3) He spoke to them. He saw you. I consent to it. It is not I; it is he. You are more learned than they. Her mother is older than yours. My friends and his are gone. Have you written to your father and to mine. It is my advice. It was a great misfortune for them. It will be a pleasure to me. The gentleman who is speaking is my friend. The horse of which I speak is lame. Which books will you buy. Who has written this letter. I go out very seldom. Have you opened the window? No; but I shall open it before we go out. I do not think that we shall perceive the sun to-day. It is possible that those men should owe more than they possess. You are defending him in vain. We heard a great noise in the room. Shall I answer in a few words. Let us wait a little longer. Let them sell their horses. Did



they not appear surprised? Your bread is not baked enough. I have trusted to your father. You have not subscribed to the concert. Those soldiers would have revolted. Would he have wished that you should have meddled with that affair. Are you pleased with him. Have you spoken to him. Is this book for me or for him? No, it is for her. Who has called me? Is it you? Your brother always comes after the others. I have never seen him here.

(4) Oral examination.

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879.  
3RD CLASS.

### FORTIFICATION.

1ST PAPER.

#### ATTACK OF FORTRESSES.—2nd Part.

TIME ALLOWED, 3 HOURS.

TOTAL MARKS, 120.

- (1) Describe fully the method of executing the deep single sap, showing detail of working party, and a plan and section (figured hand sketches) of the sap.
  - (1A.) Describe (with figured sketches) the method of executing double saps, including changing direction at right angles.
- (2) Describe the general course of the attack from the third parallel to the summit of the main breach on a front of the modern French system.
  - (2A.) In the case of a polygonal front, how would the attack proceed after the ravelin was taken?
- (3) Describe generally the attack on a fortress surrounded by a chain of detached forts, showing the greatly increased difficulties of the operation under these circumstances.

#### DEFENCE OF FORTRESSES.

- (4) What measures should the defenders of a fortress take against the establishment of the first parallel and second artillery positions, and against the advance of the besieger from the first to the third parallel respectively?
  - (4A.) What are counter approaches, and how should they be used by the defenders of a fortress? Give a modern instance of their use.
- (5) What measures should be taken against the besiegers advance over the glacis, and crowning the covered way respectively?
  - (5A.) Describe fully the measures that should be taken for the defence of the breach.

N.B.—The questions marked A are alternative with those of the same numbers.

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879.  
3RD CLASS.

### FORTIFICATION.

2ND PAPER.

#### ATTACK OF FORTRESSES.—1st Part.

TIME ALLOWED, 3 HOURS.

TOTAL MARKS, 120.

- (1) What considerations influence the choice of the side of a fortress to be attacked?
  - (1) A. What was formerly the method of opening the first parallel and its approaches, and what modifications of this method have been rendered necessary by modern improvements in artillery, &c.?

- (2) Distinguish between common trench work and flying trench work, and draw a section (figured hand sketch) through a siege parallel executed by common trench work, showing the tasks for each relief.
  - (2) A. Describe, with figured sketches, the method of executing the kneeling single sap. At what rate does this sap advance in ordinary soil?
- (3) Describe, with figured sketch, the type of battery suitable for the first artillery position.
  - (3) A. Describe, with figured sketch, the type of battery suitable for second artillery position.
- (4) What are battery screens and how constructed.
  - (4) A. What are oval embrasures, how constructed, and what are their advantages over the ordinary embrasure?
- (5) How are trenches, executed by sap, widened? What working parties are required, and how long does it take to complete the work?
 

N. B.—The questions marked A are alternative with those of the same number.

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879  
3RD CLASS.

### FORTIFICATION.

3RD PAPER.

#### VOLUNTARY.

TIME ALLOWED, 3 HOURS.

TOTAL MARKS, 100.

- (1) Describe the operation of the passage of a stagnant wet ditch, and illustrate your reply by reference to the passage of the ditches of lunettes 52 and 53 at Strasburg in 1870.
- (2) Draw to a scale of  $\frac{1}{125}$  an epaulment and one gun portion of a sunken battery suitable for the second artillery position; there is to be a small countersloping embrasure. Give a section of the battery on the line of fire. How many reliefs will it take to complete a battery of this kind. Describe briefly the construction and arming of this battery, stating how soon it ought to be ready to receive its guns.
- (3) Describe Pasley's gun platform, the method of laying it, and the number of men and the time required.
- (4) Describe (with figured hand sketches, showing plan and section,) a rectangular magazine suitable for a siege battery, state the number of men and the time required.
- (5) When the direction of a double sap is changed at right angles for the purpose of traversing the head of a direct approach, it should be executed by single sap. Why?
- (6) Describe the operation of blinding a sap. What is the object gained by this expedient?

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879.  
3RD CLASS.

### DESCRIPTIVE GEOMETRY.

1st PAPER.

TIME ALLOWED, 3 HOURS.

TOTAL MARKS, 200.

- (1) The horizontal and vertical traces of a plane make angles of  $60^\circ$  and  $25^\circ$  respectively with  $xy$ , two inches from their point of intersection;  $xy$  is cut by the elevation of a line making  $40^\circ$  with it. The plan of the line makes  $30^\circ$  with  $xy$  and intersects the elevation in a point  $5''$  in front of it. Find the intersection of the line and plane, and the angle which the line makes with the plan.



(1 A.) Draw the plan and elevation of a regular pentagon of 1.5" side, its plane being inclined at  $45^\circ$  and one diagonal at  $20^\circ$ ; also a second elevation on a new ground line parallel to any side of the plan.

(2) Assume a plane inclined at  $50^\circ$ . Draw a horizontal line of level 10, the plan of which makes  $30^\circ$  with the horizontals of the plane. Find the intersection of this line with the plane and the angle it makes with the plane.

(2 A.) Draw a plane inclined at  $35^\circ$ , and a second plane at right angles to the first and inclined at  $75^\circ$ , and show their intersection.

(3) A heptagonal right pyramid (side of base 1", height 3") has one of its faces vertical. Draw its plan, and an elevation on a plane parallel to one of the sides of the base farthest from the side of the vertical face.

(3 A.) A pentagonal right prism (side of base 1.5", height 3") has the plane of one face inclined at  $30^\circ$  and that of the base at  $75^\circ$ . Draw its projections.

(4) A right cone (diameter of base 3", height 4") is cut by a vertical plane which bisects a generatrix and has its horizontal trace inclined at  $45^\circ$  to  $x y$ . Determine the projections and true form of section.

N. B.—The questions marked A are alternative with those of the same numbers.

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3RD CLASS.

### DESCRIPTIVE GEOMETRY.

2ND PAPER.

TIME ALLOWED, 3 HOURS.

TOTAL MARKS, 200.

- (1) Determine a plane touching all of the given spheres.
  - (1A.) The radius of the base of a right cone is 1", its height 3", the index of the vertex is 52, and of the centre of the base 30, draw a line through the vertex inclined at  $45^\circ$  and making  $50^\circ$  on plan, with the plan of the axis of the cone; determine a plane to contain the line and touch the cone.
- (2) A right cone, diameter of base 2", height  $2\frac{1}{2}"$ , stands upon the horizontal plane .25" in front of  $x y$ . Determine the shadow cast by the cone on both planes of projection and the shaded portions of the solid, the direction of the rays of light being the conventional one.
- (2A.) A pentagonal pyramid, side of base 1", height  $2\frac{1}{2}"$ , stands with its axis vertical and its vertex .25" above the horizontal plane. The plan of the vertex is  $1\frac{1}{2}"$  in front of  $x y$ . Determine the shadow cast by the solid on both planes of projection, and the shaded portion of the solid, the rays of light being assumed in the conventional direction.
- (3) Draw the isometric projection of a one-story cottage of the following dimensions: length 20', breadth 14', height of walls 12', thickness of walls 1', rise of roof 5'. The roof is to have a gable at each end, and there is to be a chimney 2'  $\times$  3', and projecting 3', above the ridge of the roof at the farther end. The opening in the chimney need not be shown. There is to be a door  $3\frac{1}{2}'$  wide by 6' high in the centre of the front with a window at each side  $2\frac{1}{2}'$  from the ends of the walls,  $2\frac{1}{2}'$  from the ground,  $2\frac{1}{2}'$  wide and 3' high. There is to be a third window of the same dimensions in the centre of the end of the cottage which is visible. Scale  $\frac{1}{144}$ .
- (4) Draw the isometric projection of a rectangular block of wood 4' long, 3' wide, and  $1\frac{1}{2}'$  thick, with a circular hole  $1\frac{1}{2}'$  in diameter through the centre of the block. Scale  $\frac{1}{12}$ .

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879.

3RD CLASS.

### DESCRIPTIVE GEOMETRY.

3RD PAPER.

TIME ALLOWED, 3 HOURS.

TOTAL MARKS, 250.

- (1) Determine a sphere of 1" radius which shall touch the three given spheres.
  - (2) A cube of 3" side has one face inclined at  $40^\circ$ , and one edge of that face inclined at  $25^\circ$ . An octahedron has its axes perpendicular to the faces of the cube, through the centres of which the axes project, the edges of the octahedron and the edges of the cube intersect, and mutually bisect each other. Draw the plan of the resulting solid. Figure this plan and contour all the visible faces at vertical intervals of two units. The contours of even numbers being shown Unit 1".
  - (3) Draw the perspective projection of the given hexagonal prism, standing on the given plane R. S. which is inclined at  $71^\circ$  to the plane of projection.
- N. B.—Question 3 is alternative with the latter part of question 2, commencing at the words: "Figure this plan."

ROYAL MILITARY COLLEGE OF CANADA.—HALF-YEARLY EXAMINATION, JUNE, 1879.

3RD CLASS.

### I. EUCLID, ARITHMETIC AND ALGEBRA.

TIME ALLOWED, 3 HOURS.

N. B.—Questions marked  $a$ ,  $b$ , &c., are alternative, as follows:  $a$  for 1 and 2;  $b$  for 3;  $c$ ,  $d$ ,  $e$  for any of 4 to 10;  $f$  for any of 12 to 15.

- |  | Marks. |
|--|--------|
| (1) Prove that the straight lines which join the extremities of equal and parallel straight lines, towards the same parts, are also themselves equal and parallel.<br>What is meant by towards the same parts?   | 32     |
| (2) Describe a square that shall be equal to a given rectilineal figure.   | 32     |
| (a) Upon a given straight line to describe a segment of a circle that shall contain an angle equal to a given rectilineal angle of $40^\circ$ .  |        |
| (3) Explain briefly the steps in the proof of the proposition that, in equal circles, angles, whether at the centres or circumference, have the same ratio as the circumferences on which they stand.<br>Give in full the 5th Definition of Book V., on which the proof depends. | 36     |
| (b) If from any angle of a triangle a straight line be drawn perpendicular to the base; the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.               |        |
| (4) What are the rules for observing if numbers are divisible by 8, 9, 11.   | 12     |
| (5) Multiply 1 acre, 7 poles, $1\frac{1}{2}$ yards by 462.<br>What would be a convenient method, if the multiplier were 461?   | 12     |
| (6) Find the ratio between 1 oz. Troy and 1 oz. Avoirdupois.   | 12     |