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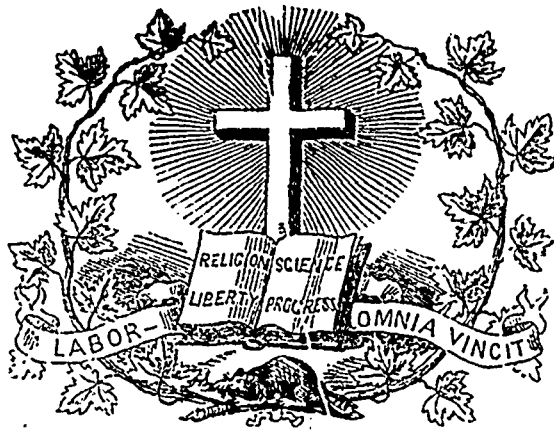
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# JOURNAL OF EDUCATION.

Volume VI.

Montreal (Lower Canada) May, 1862.

No. 5.

**SUMMARY.**—**EDUCATION.** Public Education in Russia.—Graduation in Teaching and Training, by John Bruce, Esq., Inspector of Schools [continued].—**OFFICIAL NOTICES.**—Appointments: Council of Public Instruction.—Examiners.—School Commissioners.—Notice to Directors of Institutions claiming aid on Superior Education Grant.—Division, Election and Appointment of School Municipalities.—Diplomas granted by Boards of Examiners.—Donations to the Library of the Department.—Teacher wanted.—Situations wanted.—**LIBERAL:** Council of Public Instruction.—Death of the Very Revd. L. J. Casan.—Convocation of McGill University.—**EXTRACTS FROM THE REPORTS OF SCHOOL INSPECTORS FOR 1859 AND 1860 (continued).**—**MONTHLY SUMMARY:** Educational Intelligence.—Scientific Intelligence.—Miscellaneous Intelligence.—Statistical Intelligence

## EDUCATION.

### Public Education in Russia. (1)

The first school in Russia was established in 1017, at Kiev, by Vladimir the Great, for the instruction of the clergy, and placed under the care of the Bishop. A few years later (1031), Jaraslaff, the son of Vladimir, established a school at Novgorod for the education of 300 sons of the clergy and nobility.

Previous to 1700, education in Russia was confined to the clergy and a few noble families, and the only seminaries for this purpose existed in connection with religious houses, and were taught and managed by the clergy. Peter the Great was the first to establish schools to educate youth for the civil and military services of the empire, and by degrees a large number of scientific and literary institutions and a well-organized system of public instruction have been established—limited however in their benefits, to the government, to the higher interests of science and literature, and mainly to the children of nobles and official functionaries, and the higher class of merchants—and all based on the cardinal ideas of Russian policy, that all the moral and intellectual forces of societies must be merged in the will of the Czar.

Peter founded the first naval school, and school for engineers at St. Petersburg, and schools in which navigation was taught at Pskow, Novgorod, Moscow, Jaraslav, and Wologda. The number of the cloister schools, originally intended for the sons of the nobility, was increased, and the privileges of these schools were subsequently extended to other classes of people. In 1724, before his death, Peter projected the plan of the Imperial Academy of Sciences, which was opened by his successor in the following year. Peter also invited a large number of learned men to teach in his schools at St. Petersburg, and particularly to instruct Russian youth to take charge of schools in other parts of the kingdom—thus introducing the plan of normal instruction. By his purchases and encouragements to professors, he founded the Museum of Natural History, the Museum of Fine Arts, and the School of Mines.

(1) Abridged from *Barnard's National Education in Europe*, and from the *Annuaire des Deux Mondes*.

The Empress Anna founded the first corps of Cadets, a military academy for young nobles, at St. Petersburg, and forbade all promotion among soldiers and subordinate officers who could not read. She also founded schools at Astrachan for the Calmucks, and at Kasau for the Tartars, and directed one of the officers of the government to report to her annually on the condition of public instruction.

The Empress Elizabeth imposed fines on all nobles and public functionaries who did not educate their children at home, or in the church, or public seminaries. She founded the University of Moscow in 1755, and the Academy of Arts in 1757.

Paul III, increased the number of military schools, and educated at the expense of the government, in these schools, the sons of the poorer nobles. He also founded schools for the orphan children of military men, and founded an Institute in St. Petersburg for the sons of Private soldiers and subordinate officers in the garrisons of the city.

Catherine II, applied her vigorous mind to extending the educational policy of the government. During her reign, and at her suggestion, the Imperial Free Economical Society was founded in 1765, by Count Woronzow, and other noblemen, for promoting scientific and useful knowledge. Under the patronage of successive emperors, it has grown up into one of the most important educational institutions of Russia. It has established an agricultural school with a model farm; a collection of drawings and models of machines, tools, and implements used in every department of labour; instituted and aided experiments to perfect industrial methods; held public exhibitions of domestic industry; sent out individuals to study the work-shops, factories, and farms of other countries; published a large number of useful didactic tracts on agriculture and other occupations, and diffused a large amount of information on public health, &c. Catherine was instrumental in founding the academy of St. Petersburg, for the cultivation of the Russian language and literature. She projected in 1783 a system of public schools of two grades, styled upper and lower—the former for the capital of every district, and the latter for every family in every large city. In the lower schools were to be taught reading, writing, the catechism, and sacred history; in the upper, in addition, drawing, mathematics, the history and geography of Russia, natural history and philosophy, and the Latin and German languages. She commenced her system in St. Petersburg, and invited Jankevitch de Mariovo, an eminent teacher and school officer in Austria, to superintend the work. So successful was he, that in 1790 the system had been introduced in one hundred and seventy towns. The inspection over them was confided to the governors of the provinces, and a regular appropriation of the provincial funds was made towards their support. This empress founded the normal Gymnasium, which is now the Imperial Normal School of St. Petersburg, two marine schools, a school of commerce, and a school of mines, and several female seminaries, one of which still bears her name at the capital.

Alexander, on assuming the government, declared that he regarded public instruction as the first condition of national prosperity. To him belong the credit of the more thorough organization of the public schools, by the appointment of a minister of public instruction in 1802. Under the regulations of this officer, and by the direction of the Czar, the schools were divided into four grades, viz.: 1. Universities; 2. Government schools, or gymnasia; 3. District schools; 4. Parish schools. The whole empire was divided into seven circles or districts, to each of which was assigned a university. The officers of the university circle have the supervision of the schools of the three lower grades, viz., a gymnasium or classical high school, in the capital of each province or government; the district school in the capital of each subdivision of a province and the schools in each parish in every city and village.

The results of this system of public schools in bringing children of different classes and creeds together, and in stimulating enquiries into the organization of society and the operations of government, was thought to bode no good to the stability of things as they were, and during the reign of the Emperor Nicholas, as well as during the later period of his predecessors, while much attention and large appropriations were bestowed on education, the aim was mainly to educate children of each class in society by themselves, to repress freedom of discussion in the universities, and multiply special schools, to train up officers to fill different departments of the public service with an intense national spirit, as will be seen in the following summary of educational institutions drawn from various recent authorities.

**I. Public Schools or Institutions under the Ministry of Public Instruction.**—At the death of the Emperor Nicholas there were 7 universities, 1 head normal school at St. Petersburg, 3 lycæums, with a course of instruction almost as extended as that of an university, 77 gymnasia, 433 district schools, 1068 town schools, and 592 pensions or boarding-schools established with the permission of the minister, besides schools of the above grades in Poland. All of these schools included about 200,000 pupils.

**II. Military Schools.**—These institutions receive the special attention of the Emperor, and a large portion of the appropriations for educational purposes. They consist of three classes:—1. Schools of cadets or military colleges, nominally under the direct management of the Emperor, which he delegates to the Grand Duke, heir apparent. The Emperor visits them frequently in person, and looks into all the details of discipline and instruction. There are about 9000 military cadets. 2. Schools under the direction of the navy board—studying to become officers, pilots, and master-workmen in the navy-yards. There are about 4000 pupils of this class. 3. Schools for children of soldiers in service, or who died in war—under the direction of the Minister of War. These schools are scattered throughout the empire, and number 170,000 children.

**III. Ecclesiastical Schools.**—Several of this class of schools are amongst the oldest in the empire, dating back to the introduction of Christianity, and were mainly instrumental in maintaining the standard of intelligence among the Russian clergy. Peter I. increased their number, and improved their condition by degrees; and they still constitute an important educational agency in the State, not only as theological schools for educating the clergy, but for elementary instruction generally. In respect to management, they are divided into two classes: those which belong to the Greek church, under the holy synod and a committee of the body, and those which belong to other forms of worship, which are under the direction of the Minister of the Interior, and the Consistory of each denomination. The ecclesiastical schools are of two grades. The higher seminaries are strictly theological schools, of which there are 21 belonging to the Greek church, 13 to the Catholic, 14 to the Armenian, 8 to the Lutheran, 11 to the Mohammedan, and 2 to the Jews, with over 4000 students. Besides these, there are elementary schools for the sons of the clergy, viz.: 407 belonging to the Greek church, and 275 to other denominations, with over 70,000 pupils in attendance.

**IV. Schools under the Minister of Finance.**—These comprise, 1. Schools of Mines, which are of three grades, inferior, middle, and superior seminaries—the latter only being strictly schools for instruction in mining. These schools receive mainly the children of miners—thus perpetuating the occupation from father to son. There are 5000 children in the Government Schools of Mines, and about half the number in schools supported by proprietors of private mines. 2. Schools of commerce, a practical institute of technology, a forest institute, and a school of land surveying and design, numbering in all about 3000 pupils. The schools under the Minister of Finance employ 461 teachers, and instruct about 8000 pupils.

**V. Schools under the Minister of the Interior.**—These are schools of medicine, surgery, and pharmacy, all independent of

the university faculties; rural schools for the cultivation of the vine, and for agriculture in general; schools for some of the subaltern officers in the civil service, and schools for orphans and poor children. These schools include over 15,000 pupils.

**VI. Schools under the Minister of Domains of the Crown.**—These include several agricultural colleges, and 2696 village schools for children of the peasants, giving instruction, according to the last census, to 14,064 males and 4843 females.

**VII. Schools under the general direction of Roads and Bridges.**—These include two schools of civil engineering, and one for conductors and managers of roads, comprising together 665 pupils.

**VIII. Schools under the Minister of Justice.**—These include three law schools independent of the faculties of law in the universities, with 600 students.

**IX. Schools under the Minister of the Emperor's Household.**—These include the academies of the fine arts at Moscow and St. Petersburg, a school of architecture, a school of music; containing in all, over 1,000 students.

**X. Schools under the Minister of Foreign Affairs.**—These include schools of modern languages and one especially intended to train interpreters in the Asiatic tongues. These schools instruct over 800 students.

**XI. Schools under the reigning Empress.**—These include the founding hospitals, the boarding-schools for young ladies in St. Petersburg, Moscow, Odessa, and schools for daughters of indigent and invalid officers, besides several houses of industry, schools for the deaf and dumb, and blind. In all of these schools there are over 90,000 children.

**XII. Schools aided by the Government, but not included in the above.**—Among these are schools in the German colonies, in Tarry and Siberia, numbering in all over 50,000 pupils.

The above classes of schools, mainly supported by the Government, and, to a large extent, devoted to educating young men for different departments of the public service, are instructing about 600,000 of the population. This number is exclusive of the number of children who are receiving a home education, which is estimated by M. de Krusenstern at 597,000.

To sum up, the higher institutions comprise the normal schools of St. Petersburg, seven universities and three lycæums, having in all 3521 students. The secondary institutions of the empire number 2149, with 116,936 pupils, and in the kingdom of Poland they are 1561, with 82,942 scholars, according to the last census. Private schools do not flourish; of these there are in the empire but 2260 male and female teachers.

Independently of the institutions occupied directly in the education of youth, Russia has her academies of science, learned societies, public libraries, museums, and galleries of the fine arts. Her public libraries include nearly 1,000,000 volumes.

The changes introduced during the past year by the present Emperor in the University of St. Petersburg and other higher seminaries of learning, are probably of a temporary character. They have therefore not been referred to in the foregoing account, as they are not likely permanently to affect the general education of the country.—*Educational Times.*

### Graduation in Teaching and Training.

(Continued from our Journal for July, 1861, page 103.)

As teachers and inspectors, society has work for us, and we must forth, and to the best of our abilities, do it. We must go out among men to act with them and for them. Our wisdom, such as it is, must strive, and cry and utter her voice, in our respective places of vocation. How humble soever our sphere of work, it offers us a vast advantage in moulding and training the rising generation, and an extensive field for the communication of instruction. The wants of our time and country, the constitution of our modern society, our official position, the onward progress of our age, forbid a life of mere scholarship—a nominal filling of office. In what can educated, earnest minds find fitter expressions, or fulfil a nobler mission, than in employing their gifts and acquirements,—lovingly—resolutely and perseveringly,—in the education of youth—moulding and preparing their minds, for their eternal destiny?

On the subject of teaching we have already written considerably; but in carrying out our ideas on this subject, many things yet remain to be explained and practically brought before teachers and pupils, to make the hints already given of still farther service in aiding, at east, the inexperienced teacher in giving something like a finish in the art of reading to his more advanced pupils.

To make reading effective—read any composition with justness, with energy, variety and ease; to bring out the full meaning of a

writer or author; to make delivery not only expressive of the sense of what is read, so as to be understood, but to give it all that force, beauty and variety of which it is susceptible, a much *higher training* is required.—In my previous directions I have aimed at hinting to teachers how children may, step after step, be brought on to be fluent, expressive, and intelligent readers. But this supposes a still farther advance in the art of reading. A farther knowledge of punctuation is required; a higher training of the voice is requisite; a fuller knowledge of the rhetorical and grammatical divisions of sentences and their manifold connections is needed, a practical knowledge of the great varieties in compositions, which pervade our best authors is indispensable, and a higher development of mind has to be reached, ere we can make any thing like an accomplished, finished reader,—able to do justice to what he reads, for his own benefit—extracting from it the full and correct meaning of the author, and imparting to his hearers a like benefit.

If writers,—those especially to whom we look up, as our most distinguished authors—whom, in the use of words and in composition, we take as our best models, are at so much pains in their writing to purify and enrich our language, call forth with more force its plastic powers, and give trains of thoughts and their arrangement more power to enlighten and convince,—it is surely our duty no less, so to train and teach youth in the art of reading as to enable them to do justice to that on which our writers bestow so much pains, and thus make its reading profitable to themselves and others.—Every one should love and venerate his native language, his mother-tongue, as the first of his benefactors, as the awakener and stirrer up of his thoughts, the form, mould, and rule of his spiritual being, as the great bond and medium of intercourse with his fellows, as the mirror in which he sees his own nature, and without which he could not even commune with himself, as the image in which the wisdom of God has chosen to reveal itself to him; and as such, can too much be done to its right expression of utterance in reading?—too much to make the hearer feel its power as the living exponent of thought and feeling,—too much to qualify the speaker or reader to give a telling, life-utterance to the

vast world of mental elaboration therein treasured up? The riches of the productions of our distinguished writers and authors, can never receive justice by *ill taught reading*. Accuracy of language supposes accuracy of delivery; well composed thoughts, and feelings finely described, suppose an utterance suitably expressive. The efforts of a speaker or reader can never become powerful to enlighten the understanding and constrain the wails of his fellow-men, or show that what is spoken or read is the production of a master-mind,—unless spoken or read by one whose mind has been well developed and cultivated, and has been so trained in the art of reading as to estimate and effectively exhibit to others the beauty, the power, and the value of a writer in his reasoning, demonstrations, and depiction of facts.

The first thing to which, I think, attention should be directed, is punctuation, and pausing with special reference to meaning.

It would here be out of place to enter upon the history of punctuation, or, show how, by degrees, it has come to the state in which we now find it. Our remarks and directions in teaching to read, will generally be with reference to its present more improved state.

The object of punctuation is generally designed to mark the grammatical divisions of sentences, and to show the dependence and relation of words and numbers, which are separated by intervening clauses.—To make these divisions always *the only guide* for pausing is far from correct. Almost every sentence has its *rhetorical* as well as its *grammatical* division or divisions,—its divisions with reference to precise and accurate reading—as it relates specially to the sense, to the force, beauty and harmony of language—to those tones, inflections and various modulations of the voice,—and the correct application of accent and various degrees of stress, or emphases, without studied attention to which, no composition, however forcible or elegant, can be read so as to bring out its beauties and full meaning.

The following is a tabular view of the characters employed in written and printed language, with concise definitions and explanations.

Names of Characters.	Characters.	Derivations and Explanations.	HOW OR WHY USED.
The comma.	,	<i>Komma</i> , Greek. <i>Part struck off</i> .	It is used to mark off the smallest portions of sentences. Pause generally short.
The semicolon.	;	<i>Semi</i> , Latin; <i>kolon</i> , Greek. <i>Half member</i> .	Used to mark out divisions of sentences less dependent on each other than those separated by commas.
The colon.	:	<i>Kolon</i> , Greek; <i>a member, not independent</i> .	The colon-clause generally illustrates what precedes it in a sentence: it is often placed before enumerations.
The period.	.	<i>Peri</i> , <i>hodos</i> , Greek; <i>a circuit—a completion</i> .	The period indicates a complete round of meaning. It is also the sign of abbreviations.
The dash.	—	<i>Daska</i> , Swedish; <i>strike or fly off</i> .	Marks a sudden interruption,—something not expected—or a very expressive addition.
Exclamation.	!	<i>Ex</i> , <i>clamo</i> , Latin; <i>an emotional utterance</i> .	Placed after sentences, or parts of sentences, which are to be uttered with certain degrees of emotion.
Interrogation.	?	<i>Inter</i> , <i>rogo</i> , Latin; <i>sign of questioning</i> .	This character is used to mark questions.
Quotation marks.	" "	<i>Quot</i> , <i>ation</i> , Latin; <i>act of taking from</i> .	These marks are placed at the beginning and end of a quotation.
The diacrisis.	..	<i>Dia</i> , <i>haireo</i> , Greek; <i>taking a part</i> .	Signifies taking apart two vowels in pronunciation.
The crotchets.	( )	<i>Crochet</i> , French; <i>hooked—enclosed</i> .	Crotchets enclose words of explanation, or to be specially noted: the words within are the parenthesis.
The brackets.	[ ]	<i>Brachion</i> , Greek; <i>brought together</i> .	Brought together to explain or digress.
The obelisk or dagger.	†	<i>Dague</i> , French; <i>pointing to</i> .	Marks of reference.
The double dagger.	‡		
The hyphen.	-	<i>Hupo</i> , <i>hen</i> , Greek; <i>under one, or together</i> .	A connecting mark of letters, syllables or words, it is also used to indicate a rhetorical pause.
The breve.	˘	<i>Brevis</i> , Latin; <i>short</i>	The breve indicates the short sound of a vowel.
The apostrophe.	'	<i>Apo</i> , <i>strophè</i> , Greek; <i>turning away, omitting</i> .	This sign indicates the omission of a letter or letters in a word.
The brace.	{ }	<i>Brachion</i> , Greek; <i>binding, tying together</i> .	Is used to connect words which have one common term, or lines in poetry.
The acute accent.	´	<i>Ad</i> , <i>cantum</i> , Latin; <i>stress of pronunciation</i> .	Accents show what letter or syllable is to be emphasized in pronouncing a word, and the slide of voice the word should have.
The grave accent.	`	" " " " " "	An under-line mark to show an omission of one or more words in the place.
The circumflex accent.	ˆ	" " " " " "	A mark placed under c, and g, to show that c has the sound of s, and g that of j.
The caret.	^	<i>Cares</i> , Latin; <i>it is wanting</i> .	A sign of reference.
The cedilla.	ç	<i>Cédille</i> , French; <i>soft sound</i> .	An abbreviation of the words <i>signum sectionis</i> —the mark of a division
The asterisk.	*	<i>Aster</i> , Greek; <i>note mark</i> .	Shows a distinct part of a discourse; it is also used as a mark of reference.
The section.	§	<i>Sectio</i> , Latin; <i>a part, a division</i> .	An arbitrary mark, to direct attention to notes at the bottom of pages.
The paragraph.	¶	<i>Para</i> , <i>grapho</i> , Greek; <i>a writing on the margin</i> .	
The parallels.		<i>Parallelos</i> , Greek; <i>side by side</i> .	

Ellipses are variously expressed as follows :

They are sometimes expressed by periods, thus . . .  
 " " " by hyphens, thus - - -  
 " " " by stars, thus \* \* \*  
 " " " by a dash prolonged, thus —

Figures and letters are also employed as marks of reference.

The characters used to mark sentences and their divisions with reference to their construction and correct reading, when judiciously employed, fix the meaning and give precision and clearness to the signification of sentences; and as they are employed for special purposes, the teacher should never pass them without being assured that his pupils understand what these are, and that, by being well exercised upon them, are able to make them their guides in giving the meaning, with proper tone of voice, of what they read.

The first mark to which I would direct attention is the period. In doing this let me remind the teacher, that the successful educator succeeds more and better by his examples in making good readers and training the voices of his pupils, than by rules and directions. Rules and directions are in their place necessary. We must have them. But examples,—the examples of the voice, well trained for its work—is by far the best direction, the best guide that a student can have. Therefore, show by examples,—repeated examples, how sentences should be read, and what tones the voice should assume at periods; and make your pupils, both individually and simultaneously, repeat after you till they come up to your manner and tone of voice. The end of every sentence, to do justice to the sense, requires a suitable tone—a tone answering to the character and place of the sentence. And the tones of the voice must be varied to suit the meaning and place of the sentence in composition. There is the continuous fundamental tone in reading to a period, which has but little rise or fall. This tone is strikingly illustrated by our fine readers or distinguished speakers in reading or speaking. With them the voice, commandingly, flows on with the sense, linking together sentence after sentence, with that quickening tone and spirit, and period-pausing, which as the voice flows on, shows at once those distinctions in meaning, indicated by periods. There is, also, the tone the voice assumes in reading isolated sentences, which in construction or continuation of subject, have little or no connection with what precedes or follows them. This tone approximates very closely to the final or closing tone, which indicates a *finish in reading*.

Now to all these, less or more attention should be paid at every stage of a pupil's advancement in learning to read; but at an advanced stage special attention should be paid. The teacher's aim should always be, so to train the voice of his pupils as to give them power of suitably changing the quality of the tones of their voices, that the accordance between the character and quality of the voice, and the character and place of sentences in composition, may be manifest.

Let us illustrate these remarks by examples.

### 1. Sentences not connected in construction.

The fear of the Lord is the *beginning of knowledge*. Wisdom is more precious than *rubies*. Let us live to *love and serve God*.

Such sentences as these, independent in construction, require to be read in a slow and impressive manner; and the voice at the end of each should be kept up,—showing energy of enunciation. Pauses between them should be sufficiently long to distinguish them from each other, and to mark a distinction in idea.

### 2. Sentences showing a continuation of subject.

"The voice of the mocking-bird is full, strong and musical, and capable of almost every modulation, from the clear mellow tones of the wood-thrush to the savage screams of the *bald eagle*. In measure and accent, he faithfully follows his *originals*. In force and sweetness of expression he greatly *improves* upon them. In his native groves, mounted upon the top of a tall bush, or half grown tree, in the dawn of a dewy morning, while the woods are already vocal with a multitude of warblers, his admirable song rises pre-eminent over every competitor. To his music *alone* the ear listens. That of all the others seems a mere *accompaniment*. His own native notes, which are easily distinguishable, are bold and full, and varied seemingly beyond *all limits*."

The character and composition of such sentences as the preceding require that they be read with a lively and accelerated tone of voice,—giving the end of each a *smart emphatic utterance*, placing the greatest stress of voice on the most significant words. And the voice at the end of each sentence should show a completion of

meaning, but not a *close* of the subject read or described. But as the subject is continued and ideas flow on, the voice should assume a corresponding onward cast and flow,—distinguishing by tone and manner the divisions and subdivisions of sentences, and at last changing the voice into a closing tone.

### 3. A sentence showing the emphatic closing tone.

"It is ascertained that the work now performed by the steam-engine of Watt in Great Britain, is equivalent to the labour of about *half a million* of stout horses,—but the horses require relays in order to continue the work, and, therefore, at least *double* the number would be required in the course of twelve hours, forming the amazing aggregate of *ONE MILLION*, equal to the labour of *FIVE MILLIONS* OF MEN.

Before proceeding farther in giving directions in reading, it will be found an advantage, in pursuing our subject, to spend a little time in examining and exemplifying the different slides or inflections of the voice, and show what points form the essentials of a properly trained voice. (See the 4th vol. of this periodical, p. 73.)

The voice of a good speaker or reader is marked by the following traits: Its sound pleases the ear; it is perfectly natural, round and smooth,—free of affectation; it is neither feeble nor unduly loud. Its slides are suitable to the sense, and such as the meaning of the sentence demands; and its different movements are regular and such as suit the composition, and so managed as to give weight and effect to whatever is spoken or read aloud.

The following may be considered as its distinguishing points of quality:

1. General good qualities; 2. Due quantity or loudness; 3. Distinct articulation; 4. Correct pronunciation; 5. True time; 6. Appropriate pauses; 7. Right emphasis; 8. Correct slides; 9. Proper stress; 10. Expressive tones; 11. Appropriate modulation; 12. Fluency of vibration.

Each of these requires our special study, accompanied with much practice, to become fluent expressive readers or speakers.

1. General good quality of voice. The chief qualities of a good voice are, 1. Roundness; 2. Smoothness; 3. Plaucy; 4. Proper pitch.

#### § 1. ROUNDNESS OF VOICE.

In explaining this quality of the voice, vocalization and articulation, claim the first attention. Vocalization is that continuous flow of sound on which articulation acts. An open, hearty fullness of tone exemplifies the first; that distinct, facile utterance of letters and words by which they are readily and correctly distinguished, exhibits the sound. As the sound is formed and poured forth, the articulating organs are so placed and used as to give expression to sound under every required modification. The voice should, in a manner, be played upon like a wind instrument,—the articulating organs acting upon the voice as the fingers upon the holes. But to give the voice a rotund accordant character, in speaking or reading, there must be a due equilibrium between the volume of voice, and the action of articulation.

To obtain a proper character of voice, the *body* should have an easy, upright attitude, the back kept straight, and the shoulders pressed backwards and downwards; by which the chest will be expanded, raised, and projected. To obtain a full breath and a full voice the chest must be made as roomy as possible.—Breathe freely, and deeply; but take care not to overdo the capacity of your voice. To give *body* to the sounds of the voice, make your utterance full and vigorous. To do this you must give free and energetic play to the muscles situated below the bony part of the trunk in order to drive the breath upward with due force. Keep the throat freely open, by free opening of the mouth, so as to give capaciousness and rotundity to every sound.

Select suitable exercises by which to practise for acquiring this quality of voice. The works of Shakspeare and Milton contain many suitable passages.

#### § 2. SMOOTHNESS OF VOICE, OR PURITY OF TONE.

This quality consists in maintaining an undiminished liquid stream of sound. It depends, as every other excellence of voice does, on a free, upright, and unembarrassed attitude of the body,—the head erect, the chest expanded. It implies natural and tranquil breathing; full and deep inspiration; a gentle commanding expiration; a true and firm, but moderate exercise of the larynx or upper part of the throat; and careful avoiding of every motion that produces a jarring, harsh or grating sound.

A true and smooth utterance derives resonance from the chest, firmness from the throat; and clearness from the head and mouth.

Teachers cannot begin too early in training the voices of children, and fixing the good qualities of agreeable effective utterance; yet no part of school training is more neglected.

### § 3. VERSATILITY OR PLIANCY OF VOICE.

Pliancy of voice is a high acquisition—attainable only by suitable and well directed practice, under skillful training. To give the voice that power of easy and instant adaptation, by which it takes on the appropriate utterance of every emotion which occurs in speaking, reading or reciting pieces, characterized by varied feeling or intense passion, can be acquired only by much repeated reading or reciting, of passages, requiring contrasts of tone, as loud or soft, high or low, fast or slow, sharp or mellifluous.

N. B.—For this training of the voice, our schools are very ill-supplied with books containing suitable selections for voice training.

We hope this will not continue long to be so much overlooked, and that soon we shall have class-books properly compiled for answering every purpose which an enlightened superior education requires.

### § 4. TRUE PITCH OF VOICE.

Every one has a certain pitch of voice, in which he is most easy to himself, and most agreeable to others; this may be called the natural or ordinary pitch. It supposes that no peculiar emotion demands high or low tones. It is the pitch in which we usually converse, and may be considered the general reading tone. Reading with this pitch requires the voice to be clear, distinct, flowing and expressive. It is the pitch which suits the greater part of our compositions, unless we are reading before, or addressing, a large audience. But let it be observed that though this be the middle or ordinary pitch, yet it has its undulatory movements and various tones expressive of the meaning. To give it *power and variety*, as the most habitual or generally used tone, it should be much and skillfully exercised,—exercised on suitable passages—pronouncing them in a strong, loud, but not high tone, i. e., not suffering the voice to rise with the force, but preserving all the energy and fullness of tone of which we are able.

The human voice has a great variety of power within even a limited scale of sounds; and to cultivate the *habit* of using in speaking or reading this *medium force of voice*, with reference to its varied modulations and modifications is of vast importance. It is a *habit* important to comfort and pleasure; it is a habit absolutely necessary for expressive fluent reading; it is a habit, when persevered in, that greatly strengthens the larynx and lungs, and gives the mind great command over the delicate muscles of the larynx and throat.

2. Due quantity or loudness. In training the voice in reading or speaking, extremes of pitch should seldom be indulged in. There are certain degrees of loudness, force, volume or quantity of voice which best enables those to whom we read or speak to hear, without effort, every sound of the voice; and which, at the same time, gives that degree of force which is best adapted to the utterance of the sentiments which are read or spoken.

The first thing to which the educator should direct the attention of his pupils in exercising them on this quality of the voice, is training them by example, on suitable passages, to discriminate the different degrees of force which the utterance of sentiment requires. When they can readily and correctly do this, then exercise them on the *three leading degrees of force*; these are the *moderate*, the *forcible*, and the *impassioned*.—The *moderate* occurs in the reading of plain narrative, descriptive or didactic composition, addressed to the understanding rather than the feeling; the *forcible* is exemplified in compositions addressed more to the passions, pathetic pieces, &c.; and the *impassioned* occurs in language of intense emotion, whether in the form of poetry or prose.

To enable the scholar to detect and fix definitely in his ear, the exact degree of loudness appropriate to each passage, suitable examples should be given; and they should be read till the pupils can recite them with perfect precision, so as to form a standard for all similar compositions, in subsequent reading.

There are also the low and the very low pitches of the voice. The first supposes that we are speaking or reading to an individual or to individuals quite near, and yet with so much force as to render the articulation distinctly audible to persons at a little distance. It is the tone generally used by pupils when audibly studying their lessons. The very low tone borders on a distinct whisper.

JOHN BRUCE,  
Inspector of Schools.

(To be continued.)

## OFFICIAL NOTICES.



### APPOINTMENTS.

#### COUNCIL OF PUBLIC INSTRUCTION.

His Excellency the Governor General in Council was pleased, on the 20th Inst., to appoint the Honorable Alexander Tilloch Galt, of Sherbrooke, Louis Léon Lesieur Darnulniers, Esquire, M. P. P., of Yamachiche, and Cyrille Delagrave, Esquire, of Quebec, to be members of the Council of Public Instruction for Lower Canada, in the room of the Honorable Timothy Lee Terrill, the Honorable Antoine Polette, and François Xavier Garneau, Esquire, resigned.

#### EXAMINERS.

His Excellency the Governor General in Council was pleased, on the 30th Inst., to appoint the Reverend W. B. Clarke and the Reverend Henry Roe, B. A., to be members of the Protestant Board of Examiners for Quebec, in the room of Dr. Perry, absent from the Province, and Dr. Smith, deceased.

His Excellency was also pleased, on the 31st May last, to appoint Robert Newton Hall, Esq., Advocate to be a member of the Stanstead Board of Examiners, in the room of the Reverend H. G. Burrage, resigned.

#### SCHOOL COMMISSIONERS.

His Excellency the Governor General in Council was pleased on the 17th April last, to approve of the following appointments of School Commissioners, viz:

County of Gaspé.—Pabos. Messrs. Nazaire Dupuis, and Robert Duquay.

County of Rimouski.—Matane: Laurent Nazaire Blais, Esquire.

County of Charlevoix.—Salles: Messrs. Thomas Côté, Joseph Larouche, Pierre Tremblay, Joseph Lessard and Alexandre Simard.

On the 24th of the same month:

County of Arthabaska.—St. Albert: Messrs. Joseph Hébert and Jules Lemire.

On the 5th Inst:

County of Yamaska.—St. François: M. Joseph Autotte.

County of Montmorency.—Laval Island. Messrs. Prisque Verret, Michel Latulippe, François-Xavier Jolin, Joseph Brindamour and Joseph Drapeau.

His Excellency the Governor General in Council was pleased, on the 31st instant, to approve of the following appointments of School Commissioners:—

County of Rimouski.—Matane: Messrs. J. Elie Généreux, Antoine St. Laurent, Léon Paquette, Antoine Isaïe Desjardins, and Pierre Blier.

County of Wolfe.—North Ham: Messrs. Barthélemi Toupin, Louis Côté, Hubert Rucille, Charles Poisson and David Cloutier.

#### NOTICE TO DIRECTORS OF INSTITUTIONS CLAIMING AID ON THE GRANT FOR SUPERIOR EDUCATION UNDER THE ACT 19 VICT., CAP. 54.

1st. No institution shall be entitled to or receive any aid unless the return, and demand therefor, be filed within the period prescribed, that is to say before the first day of August next. No exception will be made under any pretence whatsoever.

2. Acknowledgment of the receipt of such return and demand will be made immediately to the party forwarding same.

3. Any party not receiving such acknowledgment within eight days after mailing the documents should make inquiries at the post office and also at this office, failing which, such demand and return will be deemed as not having been sent in.

4. Blank forms will be transmitted during the first fortnight in June to all institutions now on the list; and institutions not receiving them during that period, must apply for them at the office of this department.



5. Institutions not on the list, that may be desirous of making the necessary return and demand, can obtain the requisite blank forms by applying for them at this office.

P. J. O. CHAUVEAU,  
Superintendent of Education.

DIVISION, ERECTION AND ANNEXATION OF SCHOOL MUNICIPALITIES.

His Excellency the Governor General in Council was pleased, on the 10th April last,

To erect the Township of Hunterstown, in the County of Maskinongé, into a school municipality, with the same name and the same limits as the said township.

His Excellency was pleased, on the 17th April,

1. To erect the Township of De Salles, in the County of Charlevoix, into a school municipality, with the same name and the same limits as this township.

2. To detach the Village of Bagotville from the School Municipality of Bagotville, in the County of Chicoutimi, and erect the same as the "School Municipality of the Village of Bagotville," including within its limits the said village as surveyed by order of the Crown Lands Department; together with Lots Nos. 1, 2, 3 and 4, in the Fourth Range on the north-east of Rivière-à-Marse, and Lots Nos. 12, 13, 14, 15, 16, 17, and 18 in the Range of Anse-à-Philippe.

His Excellency was pleased, on the 24th April,

1. To erect the Town of Levis into a school municipality, with the limits assigned to the said town by the Act 24 Vic. Cap. 70.

2. To erect the Township of Matane, in the County of Rimouski, into a school municipality, with the same limits as the said township.

His Excellency the Governor General in Council was pleased, on the 5th Inst., to direct that henceforward the several municipalities included in the Parish of St. Therese, in the County of Terrebonne, shall form two municipalities, to be called respectively the "School Municipality of the Village of St. Therese," and the "School Municipality of the Parish of St. Therese," with the following limits, viz:—

The Municipality of the Village of St. Therese shall include the Village of St. Therese, Grande Ligne, Côte St. Louis, Coteau St. Louis, with all the lands adjoining the said village, as comprised within the following bounds, viz: on the west, the west line of the lands at present held by John Morris, Esquire, and Olivier Deschambault; on the north, the Parish of St. Janvier; on the east the line of the Seignior of Terrebonne; on the south, (at about 40 arpents from the Mille Isles River on the said seigniorial line) the northern boundaries of the lands of the lower part of Blainville, Grand Coteau of St. Therese, the lower part of St. Therese to the land now occupied by Magloire Nadon, and the southern boundaries of the lands now occupied or held by the said Magloire Nadon, François Bertrand, Augustin Matte, Widow Scraphin Ouimet, Abraham Dubois, the heirs Sanche, Jérémie Deschambault, Amable Thibault, and the said John Morris.

The Municipality of the Parish of St. Therese shall be bounded on the west, by the County of Two Mountains and the Concession called St. Henriette, in the said Parish of St. Therese; on the north, by the Parish of St. Janvier and the School Municipality of the Village of St. Therese (as above described); on the east, by the line of the Seignior of Terrebonne; and on the south, by the Mille Isles River.

His Excellency was also pleased to annex the Concession called St. Henriette, in the Parish of St. Therese aforesaid, to the School Municipality of St. Augustin, in the County of Two Mountains.

CATHOLIC BOARD OF EXAMINERS FOR THE DISTRICT OF MONTREAL.

Madame widow Gonzague Lavoie, (Elizabeth Coutu), Miss Julia Moriarty and Miss Mary Almond obtained Elementary diplomas on the 4th March last.

F. X. VALADE,  
Secretary.

PROTESTANT BOARD OF EXAMINERS FOR THE DISTRICT OF MONTREAL.

Miss Margaret Fiskin obtained an Elementary diploma on the 8th April last.

T. A. GIBSON,  
Secretary.

BOARD OF EXAMINERS FOR THE DISTRICT OF KAMOURASKA.

Miss Clémentine Verret obtained a Model school diploma on the 11th March last.

Misses Eléonore Itzwoire, and Henriette Côté obtained Elementary diplomas on the 4th March last, and Miss Henriette Ancil an Elementary diploma, on the 11th of said month.

P. DUMAIS,  
Secretary.

PROTESTANT BOARD OF EXAMINERS FOR THE DISTRICT OF QUEBEC.

Misses Annie Bayne, Catherine Cook, Elizabeth Dupont, Isabella Kerr, Janet McMillan, Catherine McKillop, Christina McKinnon, Janet McKinnon, Eliza Jane Robinson, Elizabeth Stalker and Eleanor Wilson received Elementary diplomas on the 9th April, 1862.

D. WILKIN,  
Secretary.

BOARD OF EXAMINERS FOR THE DISTRICT OF SHERBROOKE.

Mr. Robert Cowling and Miss Marion Donk obtained Model school diplomas, on the 14th May, 1862.

On the same day, Messrs. Noel Annance, James Hepburn, Horace D. Sherrill; Misses Mary Armitage, Victoria Barlow, Mary E. Barnum, Robina Baxter, Mary Bickford, Caroline Boast, Eliza Boast, Margaret Bothwell, Catherine Boyle, Lucretia B. Byron, Elizabeth Carlisle, Elizabeth Carter, Cynthia Cleveland, Selina M. Cleveland, Elvira Cleveland, Elizabeth Cowan, Caroline A. Davis, Melvina Denison, Rebecca M. Derby, Sarah Emerson, Amelia Fletcher, Harriet Flint, Mary French, Mary Jane Hall, Anna Hart, Clarissa Harvey, Ellen Hepburn, Harriet Hills, Mary C. Hutton, Catherine Huskie, Helen Jacobs, Mary Johnson, Sallie E. Lawrence, Celestine Leclerc, Mary E. Leavitt, Ellen Lebourveau, Lucy Martin, Susan McCafferty, Elizabeth Mowle, Augusta M. Main, Mary C. Morrill, Elizabeth Pierson, Emma E. Planche, Laura Rowell, Harriet E. Rankin, Malvina Ross, Rosanna Riddle, Harriet Smith, Caroline Ann Smith, Eliza Stuart, Mary Sheppard, Anna Thomas, Marie H. Tremblay, Ellen B. Wadleigh, Ellen Willey and Annie Wilson obtained Elementary diplomas.

S. A. HURD,  
Secretary.

OTTAWA BOARD OF EXAMINERS.

Miss Ann Maria Connolley obtained an Elementary diploma on the 3rd May, 1862.

Miss Harriet Lee obtained an Elementary diploma on the 16th Inst.

JOHN R. WOODS,  
Secretary.

DONATIONS TO THE LIBRARY OF THE EDUCATIONAL DEPARTMENT.

The Superintendent acknowledges with thanks the following donations:—

From H. Driscoll, Esq. Q. C.: Mémoires de Mademoiselle Bertin, sur la Reine Marie-Antoinette, avec des notes, etc, 1 vol.

From the Regents of the University of the State of New York, ex-officio Trustees of the State Library: Documents relative to the Colonial History of the State of New-York: procured in Holland, England, and France, by John Romeyn Brodhead, Esq., agent, and edited by E. B. O'Callaghan, Esq., M. D., LL. D., Vol. II. 40:

From the same: General Index to the above work, prepared by E. B. O'Callaghan, Esq., M. D., LL. D., 1 Vol. 40.; and a Catalogue of the New York State Library; 1861, First Supplement. Albany: Charles Van Benthuysen. 1 vol, large 80.

TEACHER WANTED.

An experienced teacher, well qualified and competent to teach English and French, &c., is wanted at the College of Sherbrooke, C. E. Apply to Rev. A. E. Dufresne, Sherbrooke.

SITUATIONS WANTED.

Miss Ferguson would accept of a situation as teacher. She can give instruction in English, French, Music, &c. Inquire at the *Transcript* Office, Montreal.

Mr. James A. Fitzsimon is desirous of obtaining a situation as teacher. He is provided with a Model school diploma and can furnish good references. Address: St. Alphonse, C. E.

# JOURNAL OF EDUCATION

MONTREAL (LOWER CANADA) MAY, 1862.

## Council of Public Instruction.

As will be seen by an official notice inserted in another column, three new members have been appointed to this

body in the room of others who, for private reasons, had sent in their resignations.

Hon. Mr. Terrill, of Stanstead, withdraws in consequence of a severe malady from the effects of which he has suffered much during the last two years, and is replaced by Hon. Mr. Galt, who may be said to represent the same section of the country as his predecessor. The retirement of Mr. Justice Polette is due to the fact that the additional responsibilities of his new office would not leave him at liberty to take an active part in the deliberations of the Council. He is succeeded by Mr. Desaulniers, M. P. P., from the same district—Three Rivers. The other resignation is that of Mr. Garneau, the well known historian of Canada. He had been recently pressing for the acceptance of his resignation, as his health was failing fast under his long continued and severe labors, and seldom permitted him to visit Montreal. Cyrille Delagrave, Esq., Advocate, of Quebec, who has long discharged important and onerous duties under the school Acts, has been appointed in the room of Mr. Garneau, his fellow-citizen.

### Death of the Very Rev. Louis Jacques Casault, V. G.

The death of the first Rector of the Laval University,—of one who may be justly regarded as its founder—has caused deep regret wherever his name was known; and the Press of this Province hastened to render to his memory a well merited tribute of respect. Endowed with those fine qualities so essential to the instructor of youth, his whole life was marked by kindness and a modest appreciation of his own worth.

M. Casault did not occupy the office of Rector at the time of his death, as the constitution of the University expressly forbids the re-election of the same person a third time. The following sketch of the career of this devout friend of learning is condensed from a notice written by M. l'abbé Ferland, which appeared in the *Abeille* of Quebec:—

M. Louis Jacques Casault, Vicar-general and formerly Superior of the Seminary of Quebec, was the first Rector of the Laval University, and lately director of the *Grand Séminaire*. He was born at St. Thomas, July 17, 1808, and consequently had not yet reached his fifty-fourth year when he died. Having at an early age given unmistakable proof of a studious disposition, he was placed in the college at Quebec in 1822, and remained here six years, during which he went through the usual course with distinguished success. He was about this time induced to prepare himself for the life of an ecclesiastic, and after some years of study, received the orders of a priest in November, 1831. In the autumn of 1834, he returned from Cap-Santé, whither he had gone in the capacity of *vicaire*, and having accepted the offer of a Chair in the Seminary of Quebec, he entered that institution as professor in divinity; and during the twenty-eight years of his connection with the Seminary he continued to discharge the most important and various duties. In 1851 he was appointed Superior, which place he occupied during nine years. It was in this

position that he acted so conspicuous a part in the establishment of the Laval University. Having secured the support of Lord Elgin, he proceeded to Europe in 1852 and obtained from Her Majesty a charter, and some months later the Sovereign Pontiff's leave to found a Faculty of Theology in the new university. On his return to Canada he was called upon to furnish the plan for the putting into execution of his all-important project, and for this task he was eminently qualified, having visited the principal Universities of Europe with the view of examining and comparing their constitutions and the systems upon which they were conducted. The successes that he achieved in carrying out this enterprise are too well known to need even a recapitulation here; it may suffice to say that the University is so much indebted for the high position it now occupies to the assiduous care with which this distinguished man watched over its infancy that it would be only an act of justice to join the title of founder to the name of its first Rector.

The funeral was a very imposing one, and was attended by the dignitaries of the church, the professors and the pupils of the University, members of the Cabinet, the French Consul, the Mayor of Quebec, Judges, members of Parliament, &c. &c. The following was inscribed on a leaden scroll and deposited with his remains:—

Hic jacet  
 Illust. et Rev. Ludovicus Jacobus Casault,  
 Presbyter,  
 In sacrâ theologiâ Doctor,  
 Archiepiscopi Quebecensis Vicarius Generalis,  
 Unus è rectoribus hujusce urbis Seminarii  
 Cui per novem annos Superior præfuit;  
 Idem postquam priores octo per annos Seminarii Minoris  
 Alumnos disciplinâ informavit,  
 Novissimè Majoris Seminarii factus præsul.  
 Ad obtinendam condendæ Universitatis facultatem  
 In Angliam missus,  
 Mirâ prudentiâ mirâque in rebus agendis peritiâ  
 Rem ad optatam finem perduxit.  
 Singulari tandem consilio, quum illustrissimas Europæ urbes  
 Invisisset,  
 Omnia quæcumque in singulis academiis crederet optima  
 Decerpens,  
 Patriam suam, adjuvantibus consortibus, Universitate-Lavallensi  
 Cujus primus fuit Rector,  
 Dotavit.  
 Nullus tamen rei appetens nisi Dei gloriæ et Religionis incrementi,  
 Per totam vitam totisque viribus institutioni juventutis  
 Indesinenter incubuit;  
 Tum ipsis magistris acceptissimus, tum alumnis carissimus,  
 Incredibili omnium desiderio et dolore  
 Extinctus est,  
 Die v. Maii, A. D., MDCCCLXII, Ætat. LIV.  
 R. I. P.

### Convocation of the University of McGill College.

The annual meeting of Convocation of the University of McGill College was held at 9 o'clock on the afternoon of Monday, the 5th Inst., in the Hall of the McGill Normal School.

The Rev. Canon Leach opened the proceedings by prayer, after which Mr. W. C. Baynes, Secretary, read the minutes of the last meeting of Convocation, which were confirmed.



Professors Howe and Craik being appointed Scrutineers, the following gentlemen were elected Fellows for the ensuing year — Faculty of Law, W. B. Lamb, B. C. L.; Faculty of Medicine, Walter Jones, M. D.; Faculty of Arts, Brown Chamberlin, M. A.; B. C. L.  
The Rev. Vice-Principal then read the List of Prizes and Honors in the

### FACULTY OF ARTS.

#### PASSED FOR DEGREES.

##### *Degree of B. A.*

George Ross, Robert Austruther Ramsay, Charles G. B. Drummond, Francis Gilman.

##### *Graduate in Civil Engineering.*

James H. Gould.

#### HONOURS AND PRIZES.

##### *Graduating Class.*

Chapman Medallist—Ross. Prince of Wales Medallist—Ramsay. Ross—First Rank Honours in Classics, Prize in Rhetoric, Prize in German. Ramsay—First Rank Honours in Natural Science. Drummond—First Rank Honours in Natural Science.

##### *Students of the Third Year.*

Trenholme—First Rank General Honours, First Rank Honours in Classics and Prize, Prize in Zoology. Cushing—First Rank General Honours, First Rank Honours in Classics, Prize in Hebrew. Robins—First Rank General Honours, First Rank Honours and Prize in Mathematics. Fairbairn—Second Rank General Honours, Prize in Classics, Prize in German. McCord—Second Rank General Honours, Prize in Moral Philosophy, Prize for Essay. Wicksteed—Second Rank General Honours.

##### *Students of the Second Year.*

Duff—(Dunham Academy)—First Rank General Honours, First Rank Honours and Prize in Mathematics, Prize in Classics, Prize in Botany. McGregor—First Rank General Honours, First Rank Honours and Prize in Mathematics, Second Rank Honours in Logic. Bothwell—(Dunham Academy)—First Rank General Honours, First Rank Honours in Logic, First Prize in Botany, Prize in Logic, Prize for Essay, Prize in English Literature. Pease—(Victoria College)—First Rank General Honours, Second Rank Honours in Logic, Prize in Classics, Prize in French. Sherrill—(St. Francis College)—First Rank General Honours, Second Rank Honours in Logic, Prize in Botany. Ouellet—Prize in French.

##### *Students of the First Year.*

Wardrop, (Brockville) 1st Rank General Honours, 1st Rank Honours and Prize in Mathematics, Prize in Classics. Krans, (Stanbridge Academy)—1st Rank General Honours, Prize in Classics, Prize in Chemistry, Prize in French, Prize in English Literature. Brewster, (High School)—1st Rank General Honours, Prize in Classics. Fowler, (High School)—1st Rank General Honours, Second Rank Honours and Prize in Mathematics. Duncan, (Brantford) Prize for Essay, Prize in Hebrew.

#### ENGINEERING STUDENTS.

##### *Senior Class.*

Gould, (Smith's Falls Grammar School)—Prize in Engineering.

##### *Junior Class.*

M. Owat, (Chatham)—Prize in Engineering. Edwards, (Clarence)—Prize in Drawing.

#### STUDENTS WHO HAVE PASSED THE DEGREE AND SESSIONAL EXAMINATIONS, SESSION OF 1861-62.

##### LOGIC, MORAL PHILOSOPHY, RHETORIC, AND ENGLISH LITERATURE.

Ordinary B. A. Examination.—(Moral Philosophy)—Class 1st: Ross. Class 2nd: Drummond. Class 3rd: Ramsay, Gilman.

Fourth Year.—(Rhetoric)—Class 1st: Ross (prize.) Class 2nd: Drummond. Class 3rd: Ramsay, Gilman. Third Year.—(Moral and Intellectual Philosophy) Class 1st: McCord, (Prize and Prize Essay) Trenholme, Robins. Class 2nd: Clowe, Cushing, L. Davidson, C. P. Davidson. Class 3rd: Fairbairn, Wicksteed. Second Year.—(Logic)—Class 1st: Bothwell, (Prize and Prize Essay,) Pease, Sherrill, Duff. Class 2nd: McGregor, Hicks, Muir. Class 3rd: Ouellet, Baynes. Second Year.—(Honours in Logic)—

First Honours, Bothwell. Second Honours, Pease, Sherrill, McGregor. Second Year—(English Literature)—Class 1st: Bothwell (Prize,) Pease, McGregor, Sherrill. Class 2nd: Duff, Hicks, Baynes, J. N. Muir. Class 3rd: Ouellet. First Year—(English Literature)—Class 1st: Krans (Prize,) Brewster, Fowler, Wardrop, Bancroft. Class 2nd: Morrison, McLaurin, Bayfield W. Court. Class 3rd: Suppie, Souther, McOwat, Harris, Duncan (Prize Essay.)

#### GREEK.

B. A. Ordinary Examinations.—Class 1st: Ross, Ramsay. Class 2nd: Drummond. Class 3rd: Gilman. Third Year—(Ordinary)—Class 1st: Trenholme, (prize,) Fairbairn, Cushing, L. Davidson, Charles Davidson; Wicksteed and Robins, equal. Class 2nd: Lyman, McCord, Clowe. Second Year—Class 1st: Pease, (prize,) Sherrill, Hicks, Duff, Bothwell, John Muir, Short. Class 2nd: McGregor, Ouellette, Grant. Class 3rd: Baynes. First Year—Class 1st: Brewster, (prize;) Wardrop, and Krans, equal; Fowler. Class 2nd: Jordan. Class 3rd: Bancroft, Duncan, Morrison.

#### LATIN.

B. A. Ordinary Examinations—Class 1st: Ross, Ramsay. Class 2nd: Drummond. Class 3rd: Gilman. Third Year—(Ordinary)—Class 1st: Fairbairn, (prize,) Trenholme, Cushing, L. Davidson, Wicksteed; Chas. P. Davidson, McCord & Robins equal. Class 2nd: Clowe, Lyman. Second Year—Class 1st; Duff, (prize;) Pease and Sherrill, equal; Bothwell, Hicks, McGregor, Short. Class 2nd: John Muir, Baynes. Class 3rd: Ouellette, Grant. First Year—Class 1st: Wardrop, (prize,) Krans, Brewster; Fowler and Jordan, equal. Class 2nd; Bancroft. Class 3rd: Duncan, McLaurin, Morrison, Supple and Wm. Court equal. Honours in classes—(B. A. Honours) 1st rank: Ross. Third Year Honours—1st Rank: 1. Trenholme. 2. Cushing.

#### HISTORY.

First and Second Years—Class 1st: Brewster, Sherrill, Bothwell, Pease. Class 2nd: Duff and Short, equal; Hicks, Krans and Wardrop equal; Fowler, McGregor and Morrison equal; Class 3rd: Bayfield, Jordan, Bancroft.

#### MATHEMATICS AND NATURAL PHILOSOPHY.

Ordinary B. A. Examination—Class 1st: Ramsay (Robert), Ross (George), Drummond (Charles). Class 2nd: None. Class 3rd: Gilman (Francis). Third Year—Class 1st: Trenholme (Norman), Robins (Sampson) P., Wicksteed (Richard), McCord (David), Davidson (Charles). Class 2nd: Cushing (Lemuel). Class 3rd: Fairbairn (Thomas), Davidson (Leonidas), Lyman (Frederik), Clowe (John D.). Second Year—Class 1st: Duff (Archibald), McGregor (James), and Sherrill (Alvan), equal; Pease (George A.), Bothwell (John A.), Hicks (Francis W.). Class 2nd: None. Class 3rd: Muir (John), Ouellette (Charles), Baynes (Donald). First Year—Class 1st: Jordan (William), E., Krans (Edward K.), Wardrop (Robert), Bayfield (Horace O.), Fowler (Wm.), Brewster (Wm.). Class 2nd: Court (William), McLaurin (John R.), Duncan (Alex.) Bancroft (Charles). Class 3rd: Morrison (James). Engineering Students.—(Senior Year)—Class 1st: Gould (James H.).—(Junior Year)—Class 1st: McOwat.

##### *Honour Examinations.*

Third Year—First Rank—Robins (Sampson P.). (prize.) Second Year—First Rank—Duff (Archibald), (prize;) McGregor (James), (prize.) First Year—First Rank—Wardrop (Robt.) (prize.) Second Rank—Fowler (William), (prize.)

#### NATURAL SCIENCE.

Ordinary B. A. and Engineering Examination—(Geology)—Class 1st: Ramsay, Ross, Drummond, Gaviller. Class 2nd: Gould. Third Year—(Zoology)—Class 1st: Trenholme, (prize;) Robins. Class 2nd: Lyman, Cushing, Wicksteed, Gilman, Davidson L., Fairbairn. Second Year—(Botany)—Class 1st: Bothwell, (prize) Sherrill, (prize) Duff, (prize) Pease, Hicks, McGregor. Class 2nd: Muir, Ouellet, Grant, Baynes. First Year.—(Elementary Chemistry)—Class 1st: Krans, (prize) Wardrop, Fowler, McOwat, Court, Wm. Bayfield, Muir, J. Class 2nd: Edwards, Morrison, Jordan, Marston, McLaurin, Brewster, Bancroft, Rogers. Class 3rd: Supple, Duncan, Harris. Honours in Natural Science.—(B. A. Honours)—First Rank: 1. Ramsay, 2. Drummond.

#### FRENCH.

Ordinary B. A. Examination.—Class 1st: none. Class 2nd: none. Class 3rd: Ramsay. Second Year.—Class 1st: Ouellet, (prize,) Pease, (prize,) Duff, McGregor. Class 2nd: Hicks, Sher-

mill. Class 3rd: Bothwell. Third Year.—Class 1st: Kraus, (prize.) Brevster. Class 2nd: Fowler, Bancroft, McLaurin. Class 3rd: W. Court, Bayfield and Wardrop, equal.

#### Engineering Students.

Second Year.—Class 1st: none. Class 2nd: none. Class 3rd: Gaviller, Gould. First Year.—Class 1st: Edwards. Class 2nd: none. Class 3rd: McOwat, Muir.

#### GERMAN.

B. A. Ordinary Examination—Class 1st: Ross, (prize.) Class 2nd: Drummond. Third Year.—Class 1st: Fairbairn, (prize.) Class 2nd: Cushing and Trenholme equal; McCord and Robins, equal. Class 3rd: Davidson, Lyman.

#### HEBREW.

Senior Division—Class 1st: Duncan, (prize.) Class 2nd: Grant. Junior Division—Class 1st: Cushing (prize). Class 2nd: Fessenden.

#### ENGINEERING.

Senior Year—Class 1st: Gould, (prize.) Junior Year—Class 1st: McOwat, (prize.) Muir. Class 2nd: Matston, Edwards, (prize in drawing.)

The Chapman Medal was then presented by the Chairman to Mr. Ross, and the Prince of Wales Medal to Mr. Ramsay.

Mr. Botwell, then read part of an Essay on "the improvement made in the Science of Logic by Sir Wm. Hamilton;" and Mr. D. McCord read a portion of an Historical Essay.

The Degree of Bachelor of Arts was then conferred by the Principal on the following gentlemen:—George Ross, Robert Anstruther Ramsay, Charles G. B. Drummond, Francis Gilman.

The same Degree was also conferred on Mr. William Hall, to whom it had been granted formerly, but had not been conferred.

The Degree of Civil Engineer was conferred on Mr. James H. Gould.

Mr. Ross, B. A., read the following Vaedictory:—

The delivery of a Vaedictory address by one of those students who are about to leave the College-walls, in all probability for ever, is an excellent and time-honoured custom.

It is but a worthy tribute of affection and esteem from the departing graduates to those professors who have watched so carefully over their progress and welfare during their residence—as also a mark of good feeling towards those fellow-students with whom they themselves have lately had so much in common, and with some of whom friendships have naturally been cemented which lapse of time will not be able to dissolve. It tends, moreover, to a great extent, to keep alive in the graduate a never-failing interest in the welfare and progress of his Alma Mater; ever will he cherish it! oft will memory revert to it!

For some years past, my fellow-students, we have been travelling along the same road—the road to mental improvement and moral advancement, in some places steep and dusty, in others smooth and balmy. But through all we have travelled *together*. It is this unity—this fellowship—this community of interest and purpose, which has been the bond and tie connecting us. We have been engaged in the same pursuits.

Together we have attended lectures by which we were indoctrinated into the abstruse reasonings of geometry and algebra—taught to perceive and appreciate the grand sentiments of Euripides and Æschylus; to laugh at the drolleries of Plautus and Terence, and at the same time to perceive the sound morality lurking under both the tragic and the comic mask—grounded in morality, philosophy and rhetoric—and, together, with minds thus prepared to judge of by comparison, and to taste their beauties, have we read through the great authors of modern times.

Our intercourse—both that between students and professors, and that between student and student—has always been pleasant, most pleasant: nothing has ever occurred to mar the harmony of our connection. But now this sunny intercourse is at an end: we must gird up our loins for the race and struggle of life. Our roads *appear* to diverge, but if we all steadfastly set our faces towards the Ten-fo' Fame, seen afar upon the summit of yon steep and giddy height, we are all tending in *one and the same* direction—Remember, oh remember, that the path of rectitude and honor, and that alone, leads to the portal of the Temple of Fame. Some will essay their powers in the courts of Justice, aiming to secure by their rhetorical and pleading powers the protection of the innocent, and by their shrewdness and acumen the conviction of the guilty—others will prefer directing their efforts towards the acquirement of skill in the healing art—others again, mayhap will fill a professional

chair and disseminate around some other centre the light collected here—and all will enter forthwith into the active business and labors of bustling life. But study ceases not on leaving college. The Legislature from year to year modifies and improves the laws of our own country and introduces and naturalizes such jurisprudence of other lands as appears wise and profitable for us—in like manner the rapidly multiplying discoveries of science and of art are enlisted into the service of the sons of Æsculapius for the alleviation of the sufferings of frail humanity. Well it is for us that activity is to the mind what breezes are to the atmosphere and currents to the ocean. We are all enjoined moreover, by our Lord and master to "work while it is day," "whatsoever thy hand findeth to do, do it with thy might," says the wise king.

Surely it is fitting and right for those journeying along the same path, before ultimately parting, to say to one another a few words of brief farewell! It cannot but be, nevertheless, that on parting company a certain feeling of melancholy at the thought that we *must* part, is mingled with feelings of satisfaction and just pride at having fought the good fight and been successful, our Alma Mater conferring upon us our first title to distinction in the field of letters—Still the unwelcome reflection is forced upon us—to-day is the day of parting—to day we must say to each of our co-disciples, "continue fellow-students in the path of rectitude and good-fellowship and be assured, whatever be your sphere in life our earnest prayer for you will always be "God speed you."

To our Professors—those who have so carefully watched over our moral and mental advancement and for whose care and attention upon us bestowed we feel most grateful—we must now bid adieu. It is no longer to be our happy lot to suit and listen to the words of wisdom and counsel by which they lead on, and encourage those under their care to strive and strain and never to lag in the cause of their own improvement—no more are they to afford us lucid explanations of geometrical difficulties, to guide us through the flowery path of literature, to teach us to appreciate the beauties of Nature, to draw from the bowels of the earth rich ores and minerals there laid up in store by bounteous Providence for the use of diligent man, and to discern with critical eye the minute peculiarities of modern languages. Their course of instruction for us is finished; it now remains with ourselves to put out to interest the knowledge we have thus received until it increases ten and a hundred fold.

I cannot close this address—bidding farewell, as it were, to the college-walls themselves—without mentioning in most grateful terms the munificence of one of our most eminent and patriotic citizens by which the college buildings, long left unfinished, have been completed. By my hands my fellow-students desire in magnanimity, to place a crown of bay leaves upon that worthy brow, and to express our united wish that he may enjoy a green old age, and live to be thanked again and again by succeeding generations of grateful students. This noble act of generosity shows that there are those amongst us who look with affection upon the learned institutions of their country, and to all such the grateful thanks of us who enjoy the benefits are most certainly due.

Nor must I omit to thank those ladies who by their presence here to-day testify that our efforts and pursuits have not been wanting in interest to them, but that they wish, by showing their appreciation of our past labours, to incite us to fresh toils—so shall we secure to ourselves on future days a further meed of approbation.

#### MASTERS OF ARTS.

The Rev. Vice-Principal then announced that the following gentlemen, Graduates in Arts, having performed the exercises prescribed by the University, were entitled to the Degree of Master of Arts:—R. J. Plimsoll, B. A. of 1858. J. A. Perkins, B. A. of 1858. James Kirby, B. A. of 1859. C. J. Mattice, B. A. of 1859.

The Degree of M. A. was then conferred upon them by the Principal.

The Rev. Dr. Leach, then delivered the following Address:—

The homely saying, "nearest the heart, nearest the mouth," may be supposed, without any objection on my part, to be the reason why I notice *first* the agreeable fact, that never since the founding of this University has the number of students in the Faculty of Arts been so large as it is now. For some years past the number has been gradually increasing, and the friends of the University seem to be justified in entertaining a very confident expectation that it will, at no distant period be what they have always hoped it would become.

This is very encouraging, but not entirely satisfactory. In so populous a city there must necessarily be many more than those

now studying in the College, who from their natural abilities and position might be thought disposed to seek in a College the opportunities and means for the best cultivation of themselves. It is to be feared that the want of due appreciation of the higher discipline of Colleges that marks all states of society similar to ours, exerts its full influence here. Too little credit attaches to the literature and science of the more accurate kinds, and that too even in the judgment of those whose circumstances give them the command of all the best sources of information, and the ability to grant their sons every facility of intellectual and moral culture. But without doubt, the fault as often lies with young persons themselves as with their parents. They have no exalted aims and no clear perception of the purposes of the life and powers granted them. The love of independent action is too early developed; and rushing too soon into the business of life, their pleasures are not generally of the most elevated description, and their capacities seldom enlarged beyond the enclosure of the routine they fall into. It is a pity; one cannot but regret that many more of those who are endowed with superior natural abilities that might be applied in doing good to their fellow creatures, do not enter some or other of those professions, in the practice of which they may become eminently a blessing to the community in which they reside. But the power and opportunity of doing good in the highest degree are not confined to what are usually termed professions. No class of men has a deeper interest in the good order and prosperity of the country than the mercantile, and that many of them have both the judgment to understand the true interests of their country and the patriotism to make no light sacrifices for the advancement of them, we have the most conspicuous evidence in the original Founder of the University, in him who has completed the edifice, as well as a goodly number whose names are on record as the benefactors of it. But to this I shall not at present allude more particularly. In both houses of the Legislature some of those who have served their country with the greatest ability and success are to be noted in the order of merchants, and in many respects they are to be presumed the most competent to give counsel. Whether then they may act in this higher sphere of public duty or be invested with authority in city or country, would it not be reasonable to expect from a College course some additional power to perform well the duties which these offices imply? Would a College course not be an advantage? Is it not to be considered the natural if not the necessary preparation for such duties? Believing that it is, I cannot but express my regret both on this account, and more generally on account of the high character of the merchants of the whole country, so desirable to be sustained, that so few of those who engage in mercantile pursuits, especially in this city, enter themselves as students in the University. For more reasons than it is now possible explicitly to state, this, I think, is deeply to be deplored.

The increase of the number of our students to which I have referred with so much pleasure, is principally derived from the country districts. They are generally of maturer age, and though often defective in previous training when compared with students from the High School, their well directed labor speedily yields very pleasing results. Most of them, I suppose, prompted by the consciousness of intellectual power, seek what they consider a congenial position for its cultivation, and when they set themselves to work they generally do work with right good will. This class of students seem to me deserving of particular encouragement. Leaving the paternal home they necessarily live in the city at considerable expense, and if scholarships were established for their maintenance, the number of such students, as I am informed by a clergyman in the country, would be increased I know not to what degree. I am very certain of this, that an abundant number of such students as those I have alluded to, graduating in the University, would be no insignificant guarantee of the good order of the part of the country where they happen afterwards to reside.

The subject of scholarships has occupied the earnest attention of the Faculty, and convinced by the facts adduced by Dr. Johnson and his valuable suggestions, we have addressed the Governors of the University on the subject, who have expressed their sense of its importance, and who will doubtless endeavor to give it effect in due time and fitting place. Among the various objects to which human benevolence is directed, I know of none upon which it could calculate with greater probability of accomplishing the greatest good with the least expenditure of means, than the endowment of scholarships such as those that have been recommended by the Faculty.

The relation of the Faculty of Arts to the other Faculties of the University, is a matter that has often been deliberated upon with the most earnest attention. That it would be decidedly advanta-

geous for intending Students of Law and Medicine to graduate previously in Arts, is generally conceded, and though it may be inexpedient and impracticable to insist upon this course as a rule, it cannot be too strongly recommended. Till this course, however, is adopted, it cannot be thought that those professions have availed themselves of all the best securities for the raising and purification of their character, which can never rank too highly. Would it be no advantage to the student before he entered upon the study of Medicine to have passed through a vigorous course of instruction in mathematics and classical literature, in the natural sciences, and in the methods of reasoning and investigation. In some parts of his medical course does he not come into contact even with mental science, without some knowledge of which his conclusions must be necessarily one-sided, and therefore probably false; and even the study of moral truths cannot safely be omitted. Civil society has a practical interest in his clear understanding of duties. I might mention many cases where this is infinitely needful in the medical profession. I mention only this—medical evidence in the courts of justice, and of this I need refer only to one kind. Between the necessarily arbitrary and provisional definitions of insanity, there are room and verge enough to sink every law that has been enacted for the suppression of crimes. From this instance alone we see the magnitude of the moral responsibility, and hence deduce the necessity of a previous study and clear understanding of duties. Clearly, there is no part of the course in arts that is not directly conducive to the student's advantage in the medical profession. In a similar manner it might be argued in regard to the study of law. There is no profession that more requires comprehension and accuracy of knowledge, a more complete and critical power in the use and interpretation of language, and a more thorough acquaintance with the theory of argumentation and greater readiness in its application. As this profession too furnishes so large a proportion of those who exercise the legislative function, since, generally speaking, the members of it are the most competent, it is evidently necessary that the range of their earlier study should be liberal—extending to all the subjects, at least, in arts; and perhaps I may be allowed to say that it is especially, on this account as well as others, incumbent upon the members of it that all duties whether of state or individuals, ought to be the subject of systematic and rigorous study and be not left, as it usually is, to that imperfect and random acquisition which leaves in obscurity the very principles of moral judgment necessary in cases of vital moment to the public welfare. Law and morality must inosculate; and while it was a wise thing to establish a chair of jurisprudence in the Faculty of law, yet, even with all the knowledge which this supposes, it must be a miserable preparation for the responsibility of the work of legislation when there is no more explicit and scientific knowledge of duties than a child usually learns from the catechism of the church. This suggests another subject to which I have often adverted before, *iterum atque iterum*, and concerning which I cannot easily be now silent. I commend it to the special attention of the Principal of this university, who stands pledged on the subject of Education. While there is abroad a very general belief of the great things that have been done for the perfection of the educational system in Canada, I think we have too little suspicion of one great defect, I mean the want in the public academies generally of all instruction in rights and obligations, and the duties of human beings. I consider this a remarkable phenomenon. We find taught in those academies and schools all subjects that serve to sharpen the intellect and qualify for what is called "the business of life," but the kind of instruction mentioned, which, in a country where political and social liberty is so great, is perhaps more needed than in any other part of the empire, and as much as in any part of the world; that this kind of instruction should be left out of the system, is, I say again a remarkable phenomenon; all kinds of seed sown but this—to the want of which, I hold directly imputable, crimes, vices and sins innumerable.

I am not to pass without notice the addition that has been made to the number of professorships in this faculty, by the erection of that of practical chemistry. As this has already been published, and the appointment, together with the extremely interesting circumstances connected with it (concerning which I wish I were at liberty to say what might be said) since this is already made known, I content myself with expressing the pleasure I feel—and I believe I speak the sentiments of all the other professors—upon the prospect of having Mr. Hunt a member of the Faculty.

As Dean of the Faculty I have to acknowledge the many obligations under which I lie to the principal and other professors for the assistance which they have constantly rendered me in all the duties of that office.

Of the ordinary department of the students during the past session, it is extremely pleasing to be able to say, that, with an exception scarcely worth mentioning, we could hardly desire it to be more satisfactory than it has been. I am much mistaken if the consciousness of correct and upright conduct during the session, does not now give you—I speak to you the students—does not now give you even greater pleasure than the honors and prizes you have won by your intellectual labors. I do not ask your attention, at present, to any of the general or minute directions usually given on these occasions—directions which I believe there are few of you that need. You are aware, I trust, of the deep interest we take in what you now do and in what you are to be under God's blessing. Be certain of our best wishes and our sincere prayers for you. *Valete quam felicissime.*

The Principal announced that the Honorary Degree of Doctor of Laws had been granted by the Corporation of the University to the Right Honorable Sir Edmund Head, Bart., M.A.; Rev. Dr. Falloon, Principal of St. Francis College, Richmond; George Lawson, Esq., Ph. D., Professor of Natural History in Queen's College, Kingston.

Principal Dawson spoke at some length; his remarks, which, with other addresses delivered on the occasion, are omitted for want of space, had reference to the gentlemen mentioned above.

The meeting then adjourned to the following day, May 6.

#### SECOND DAY.

The proceedings of the second day were chiefly devoted to the faculties of Law and Medicine. Professor Campbell, Dean of the Faculty of Medicine, made the following announcement, which together with this account of the proceedings, are taken from the published report:—

#### FACULTY OF MEDICINE MCGILL UNIVERSITY, MONTREAL.—SESSION 1861-62.

The number of Matriculated Students in the past session was 159, of these 92 were from Canada East, 62 from Canada West, 1 from Nova Scotia, 1 from New Brunswick, 2 from Prince Edwards Island, and 1 from the United States.

The number of Students who passed the primary Examination which includes the branches of Anatomy, Chemistry, Materia Medica, and Institutes of Medicine, was 22 as follows:—

Messrs Alphonse Brodeur, Varennes, C.E.; Henry Graham, Bells Corners, C.W.; Eli Ives, Hatley, C.E.; Albert Edward Senkler, Brockville, C.W.; Alex. A. Ferguson, Cornwall, C.W.; Wm. Gustin, London, C.W.; Donald J. Grant, Glengary, C.W.; John J. Marston, L'Original, C.W.; James A. Sawyer, Kemptville, C.W.; Horatio C. Burritt, Smiths Falls, C.W.; Wm. W. Dickson, Packenham, C.W.; Robert McIntosh, Newcastle, C.W.; Antoine Desaulniers, Rivière du Loup, C.E.; Charles H. Pegg, Arcona, C.W.; Thomas M. Ross, Lancaster, C.W.; James L. Mason, Montreal, C.E.; Peter E. Brown, Lake of Two Mountains, C.E.; George Wood, Frost Village, C.E.; Wm. W. Gordon, Bathurst, C.W.; Wm. W. Squire, Montreal, C.E.; Edward E. Malloch, Ottawa, C.W.; Honor Therien, Rivière David, C.E.

At this meeting of Convocation, 23 gentlemen received the Degree of M.D., C.M.

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

Charles Richard Nicolls, Montreal, Surg on Major Grenadier Guards, on Rheumatic Fevers; John Edward Moffatt, Montreal Staff Surgeon, Guards, on Gout; Henry G. H. Lawren Montreal, Asst. Surgeon Grenadier Guards, on Typhoid Fevers Arthur G Elkinton, Montreal, Asst. Surgeon, Scots' Fusilier Guards, on Pneumonia; Edward Louis Lundy, Montreal, Staff Asst. Surgeon, on Syphilis; St. John Killery, Montreal, Staff Asst. Surgeon, on Idiopathic Tetanus; Robert Atkinson, Montreal, Staff Asst. Surgeon, on Disease of the Liver; Thomas B. P. O'Brien, Montreal, Staff Asst. Surgeon, on Rheumatism; James Lister, Belleville, C.W., on Chronic Hydrocephalus; Frederic John Austin, Montreal, C.E., on Acute Peritonitis; Richard Maurice Buck, Sarnia, C.W., on the Correlation between the Physical and Vital Forces; William S. DeBonald, Berthier, C.E., on the Pneometer; Edward Henry Trenholme, Trenholmsville, C.E., on the correlation between the Psychical and Physical forces; Charles Howard Church, Aylmer, C.W., on Strangulated Hernia; Francis Lewis Mack, St. Catherines C.W., on Cancer; John Alexander Stewart, Charlottetown, P.E.I., on Epilepsy; David Beattie, Aylmer, C.W., on Brounchotomy; John Wherry, Quebec, C.E., on Hæmorrhage; Alfred Bellew, Quebec, C.E., on Anæmia; George

Ashbold Chesley, Cornwall, C.W., on *Scarlatina*; James Gordon Strowbridge, Brantford, C.W., on *Inflammation*; Donald Peter Campbell, Glengary, C.W., on *Epilepsy*; John Harkness, Matilda, C.W., on *Hydrophobia*; Francis Winniett Digby, Brantford, C.W., passed his examination but not being of age, cannot receive his Degree till next Convocation.

#### PRIZES.

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

For the best Theses, Richard Maurice Bucke, Sarnia, C.W.

For the best Examination on the Final Branches, John A. Stewart, Charlottetown, Prince Edwards Island.

For the best Examination on the Primary Branches, John J. Marston, L'Original, C.W.

The Professors Prize in Materia Medica was awarded to Mr. John Wm. Bligh, Quebec.

The Professors' prize in Clinical Medicine, for the best answers to written questions, to Edward H. Trenholme, Trenholmsville, C.E., and for the best report of cases to Richard Maurice Bucke, Sarnia, C.W.

In Botany and Zoology the prizes awarded were.

For Botany and Zoology to Mr. Timothy Bigelow, Whitby C.W.

For Botany to Mr. Edward P. Hurd, Eton, C.E.

For Zoology to Mr. Kenneth Reid, Huntingdon, C.E.

The Prizes having been presented, the Degree of Doctor of Medicine and Surgery was conferred by the Principal upon the twenty-three gentlemen named above

Mr. Charles Howard Church, M.D., then delivered an able valedictory address.

Professor Torrance proceeded to read the following statement:—

#### FACULTY OF LAW.

#### RANKING OF STUDENTS AS TO GENERAL PROFICIENCY.

#### Third Year—Graduating Class.

James Kirby, M.A., 1st; John P. Kelly, 2nd. Second Year.—Charles Wurtele, 1st; Ernest Sabourin, 2nd. First Year.—William E. Bullock, B.A., 1st; Wilfred Laurier, 2nd

#### STANDING IN EACH CLASS.

#### PROF. LAFLANME'S CLASS.

Third Year.—John P. Kelly, 1st; James Kirby, M.A., and S. B. Nagle, 2nd. Second Year.—Charles Wurtele and E. Sabourin, 1st, equal; E. T. Day and George O. Doak, 2nd, equal. First Year.—Wilfred Laurier, 1st; A. Welch, W. E. Bullock, B. A., 2nd.

#### PROFESSOR LAFRENYE'S CLASS.

Third Year.—James Kirby, M.A., 1st; John P. Kelly, 2nd. Second Year.—Charles Wurtele, 1st; Ernest Sabourin, 2nd. First Year.—Wm. E. Bullock, B.A., 1st; Henri L. Desaulniers, 2nd.

#### PROF. TORRANCE'S CLASS.

Third Year.—John P. Kelly, 1st; James Kirby, M.A., 2nd. Second Year.—Charles Wurtele, 1st; Ernest Sabourin, 2nd. First Year.—Wm. E. Bullock, B.A., 1st; John Boyd and Alfred Welch, 2nd.

#### PROF. ABBOTT'S CLASS.

Third Year.—James Kirby, M.A., 1st; V. R. Sicotte and Irvine Allen, 2nd. Second Year.—George O. Doak, 1st; F. T. Day, 2nd. First Year.—Wm. E. Bullock, 1st; Wilfred Laurier, 2nd.

#### LIST OF GRADUATES.

James Kirby, M.A., of Montreal; John P. Kelly, of Montreal; Irvine Allen, of Aylmer; Athanase Branchaud; Victor R. Sicotte, St. Hyacinthe; Sarsfield B. Nagle; Melbourne Tait, Montreal; John Joseph Curran, Montreal; Robert Cowan Cross, Montreal; A. P. Adelaar Dorion.

It was announced that the Honorary Degree of D. C. L. had been conferred upon Alex. Morris, Esq., M.P.P., and Christopher C. Abbott, Esq.

Mr. A. P. Dorion read a portion of an essay, and a valedictory in French, and Mr. J. P. Kelly, a portion of an essay on the Laws of Lower Canada and a valedictory in English.

Principal Dawson, in making the announcement for the next session, spoke as follows:—

The business of this meeting of Convocation is now closed, and it only remains to sum up the work of the past session, and to make a few announcements for the next.

In looking back on the past session, we have reason for deep thankfulness to God, in that no breach has been made in the ranks of our officers, and that our labors have prospered.—The Staff of the College proper now numbers twenty-five Professors; and reckoning the masters of the High School, and the Professors of the Normal School, the total number of instructing officers in actual employment is thirty-six. For this large body of able and painstaking instructors, not surpassed, I am sure, in these respects, by that of any other University, the extent of our course of study and the number of our students afford ample occupation. In the past session the returns of the several Faculties show an attendance of 65 students in Arts, 158 in Medicine, and 45 in Law, or a total of 268 college students. In the Normal School we have had 62 students. In the High School there are 271 pupils, and in the Model School 300, so that in all 900 persons have, in the past session, directly derived educational benefit from this University. It is farther to be observed that such is the unity of our system that the influence of our highest officers is more or less felt even in the humblest department of our work, and that indirectly through its influence in other schools, and the labors of those who have gone forth from it to teach elsewhere, it is much more extensively useful than the above numbers would indicate. At the present meeting of convocation degrees in course have been conferred on 46 gentlemen, and there is a prospect of a still larger number in the next session, more especially in the Faculty of Arts.

The annual calendar of the University will be issued in a few weeks, and will be circulated gratuitously to all who may desire it, and I would earnestly desire all parents and all young men desirous of qualifying themselves in the highest degree for the business of life, to consider earnestly the advantages which it holds forth to them. There is happily now no reason why young men in Canada, desirous of a liberal education, should seek for it abroad rather than at home; but there are many and cogent reasons, which were ably pointed out by Dr. Leach yesterday, for their availing themselves of the highest education to be obtained in their country.

The opening of next session will, we hope, be signalised by the formal inauguration of the William Molson Hall, a ceremony which, we trust, will be attended by as large a number of our students and graduates as can make it convenient to be present, and which we hope will be the prelude to a more than usually prosperous session.

In connection with the completion of these buildings, I cannot refrain from congratulating the Faculty of Arts, not merely on the increased conveniences and the additional prestige resulting from the completion of its buildings, but on the important addition made to its sphere of usefulness in the constitution of the chair of applied Chemistry. Ever since I had the honor of being connected with this University, I have urged the importance of such a chair, as especially appropriate to a University constituted like that of McGill, and to a great school of medical science, and centre of manufacturing industry. I rejoice now to see this project realised, and I rejoice still more that we have been able to secure a Professor, whose name is a guarantee of success, and whose original remarks on Chemistry are an honour to this country. With such a teacher as Dr. Hunt, a subject of so extensive an application to the pursuits of ordinary life, and more especially to medical science and the development of the industrial resources of this country, must attract many students, and enable us to erect at once a flourishing school of practical and applied Chemistry.

These are the principal points in reference to the past and approaching session to which it is my duty to direct the attention of the convocation and the friends of the University here assembled. Let us thank God and take courage; humbly hoping that we shall be blessed and prospered as in the time past, and that such wants as remain may be supplied and such difficulties as still oppose our progress may be removed.

—The meeting of Convocation was then concluded by the Benediction pronounced by the Rev. Prof. Cornish.

## Reports of School Inspectors, for 1859 and 1860

Inspector BÉCHARV'S Report for 1860.

(Concluded from page 28.)

No. Four, District school, in the Municipality of Percé, is situated at Little River, east, twelve miles distant from the village of

Percé. The building in which it was kept had been in a wretched condition, but it was repaired and made tenable. The teacher was not well qualified for his situation and had no diploma. This school was attended by 63 pupils.

With regard to the accounts, which at the time of the last report, were badly kept, the Inspector says he is happy to notice that things had improved in this as in every other department. Dr. Connick, the Secretary-Treasurer, had nobly performed his part when the assessment came to be levied and collected, giving valuable assistance to the commissioners in the execution of this difficult duty; the firmness and zeal displayed by him on these occasions deserved the greatest praise.

It was in that part of the district of inspection including the four municipalities previously mentioned that the most important progress had been made. Here the assessment was levied; 9 teachers were employed,—6 had diplomas, of which 2 were for model schools; the higher branches of elementary instruction, as compound arithmetic, book-keeping, grammar, vocal music, &c., were taught in some of these schools; and it was also in these municipalities that the attendance was most regular. The number of pupils in the whole district was 731; of this number, 358 or nearly one half, belonged to these municipalities,—373 being from the others, which, we may add, are thirteen in number. The former also paid the highest salaries to the teachers,—3 of whom were from the Jacques Cartier and Laval Normal schools. Such facts as these speak volumes in favor of the system of assessment, which Mr. B. believes to be the only good system for maintaining the schools permanently and effectively. Some progress had also been made in the 13 municipalities situated between Percé and Cap Chatte, especially at Rivière-au-Renard and St. Anne des Monts, where the assessment was levied, and the condition of school affairs rivalled in prosperity that of the four municipalities mentioned above. This tendency to improvement was due mainly to the fact that the rate was in force in these localities, and to the great efforts of the clergy, to whom the cause of education is so much indebted.

5. *Bonaventure Island*.—Here a school had been opened, but it had not yet been visited; its establishment was due to the efforts of M. Guilmet, *curé* of Percé; the assessment met with opposition in this small municipality.

6. *Malbaie*.—School concerns were in a very bad state in this place. There had been only one school in operation during the previous year, kept in the district of Barre-a-Choir; but it was closed last spring, owing to opposition, and also to the ill-treatment which M. Pilon, the teacher, had received at the hands of a great number of the ratepayers. This was much to be regretted, as the pupils of this teacher made rapid progress while under his care. Judging from past occurrences any attempt, to levy the assessment in this municipality, would be met with violence. It would be necessary to resort to legal proceedings, which would probably not be effective without the presence of Capt. Fortin. The district known as that of *Chien Blanc* was an exception, as its inhabitants had ever shown themselves in favor of the school system. Finding they could not agree with the *étiennoirs* of Malbaie, they obtained a separation and at the time of the visit formed a distinct municipality for school purposes, under the name of "St. George of Malbaie." Prior to this, they had, in common with the other ratepayers, built a schoolhouse and procured the services of Mr. Dagneault, heretofore of Percé; this teacher was more successful here than he had been in his former situation. Mr. Patrick Enright, the secretary-treasurer, fulfilled his duty to the satisfaction of the commissioners.

7. *Douglas*.—The assessment had not been levied here, though the Inspector and M. Fafard, the *curé*, did all in their power to have it adopted. There had been no school in operation since the month of July, when Miss Galt left, having taught one year with much application and some success. The Inspector, in his visit during the winter preceding, succeeded in making a late secretary-treasurer refund the sum of \$24, which he had always refused to account for.

8. *York and Haldimand*.—The Rev. Mr. Ker was perhaps the only person in this locality, who desired sincerely to see the schools opened. He had done all in his power to attain this end, but hitherto without success. Thus the place had been several years without any school, and opposition was persisted in. It would be necessary to prosecute the commissioners, or nothing would be done in the premises.



9. *South Gaspé Bay*.—There was no school kept here; and both the commissioners and ratepayers opposed the assessment. The former were to be prosecuted for wilful neglect, as it had become absolutely necessary to make an example.

10. *Gaspé Bay North, (Peninsula)*.—Some change for the better had taken place in this municipality since the previous report. The assessment was levied. The teacher who, under the system of voluntary contribution, had received so little for his services, was now allowed a salary of \$160 per annum,—and this he hoped to see increased to \$200 next year. The school kept here was still taught by Mr. Cole. All the examinations had been very satisfactory; the pupils were very clever, especially in arithmetic and geography. Mr. Cole had ability and experience, and would be a very effective instructor were his classes kept more orderly and his authority more felt. The commissioners had the courage to enforce the assessment, but failed in its collection; and considerable arrears were due. The accounts of the secretary-treasurer were well kept.

11. *Grande-Grave*.—In this place, formerly a part of Cape des Rosiers but since last September a separate municipality, there were two schools which the Inspector had recently visited. The school in District No. One (within Little Gaspé) was taught by Miss Julia Kinsela, of Guernsey, who had no diploma,—results were not very satisfactory. The school in District No. Two was kept by Mr. Simon, also of Guernsey, (aged 30 years,) and without a diploma. It had not been attended by a single scholar for several weeks; and the teacher, whom the inspector accidentally met, told him that it had never been attended by more than seven pupils. This was owing to the opposition manifested towards the school, as the people thought they would avoid the tax by not sending their children. The commissioners either through weakness or fear of making themselves unpopular in the locality, were very remiss in the discharge of the duties which devolved upon them. Instead of at once adopting legal proceedings to recover the rates, they lost so much time in procrastination that the arrears due had reached the sum of \$368.67. The Inspector remained several days in this municipality urging the commissioners to take immediate steps to vindicate the law. Four among the most refractory (including the wealthy firm of Fruing & Co., who had often shown their antagonism both to the tax and to the schools) were sued; and a few days after judgment had been rendered against them, they paid the rate. This had the desired effect on the other ratepayers; more than half the amount of arrears had been paid already. The Commissioners of Grande Grave never visited the school. The greatest praise was due to William Hyman, Esq., the secretary-treasurer, for the zeal with which he labored, (sometimes to his personal inconvenience and loss,) to promote the cause of education.

12. *Cape des Rosiers*.—No school had been established as yet in this recently formed municipality. On the advice of the Inspector, the commissioners had resolved to impose a special tax on all rateable property, for the purpose of building a school-house; and they intended to obtain the services of a teacher during the month of August or September following, as it was hoped the building would be completed by that time.

13. *Anse-à-Grifond*.—No school had been established in this place, though its erection into a municipality, distinct from that of Rivière-au-Renard had been effected during the spring. The inhabitants were generally poor, and as they had been called upon to contribute towards the building of a chapel, they could not find the means to pay for any other enterprise without inconvenience to themselves and their families. They had, however, commenced to build a schoolhouse, using for this purpose the wood of the old chapel. The commissioners, through apathy, would have done very little to promote the educational interests of the municipality had they not been stimulated by the advice and example afforded them by the Rev. J. B. Blouin, a missionary whose devoted and zealous co-operation in the good work of education was above all praise.

14. *Rivière-au-Renard*.—There were now two excellent schools in this municipality,—one of the municipalities in which the greatest progress had been made during the preceding twelve months. This was due to the efforts of Rev. M. Blouin, the curé. The assessment of 3 shillings per £100, formerly levied, had now risen to 8s 4d per £100—or a penny in the £. This increase, recommended during the preceding year by M. Béchard, had enabled the commissioners to open another school, and also to build a schoolhouse, (measuring 28 feet by 24 feet).

School No. One, situated on the western bank of the river had been conducted with success during twelve months by M. Paul Blouin, brother of the curé,—the pupils making rapid progress while under his care, as the examinations amply proved; but this teacher left the district to take charge of the new school on the other side of the river, and he was replaced in the former by his brother, Mr. Fr. Xavier Blouin, late professor at the college of St. Michel. The inspector had convinced himself from a recent visit to the school now under the care of this teacher, that he fully deserved the reputation which his ability and experience had won for him. The commissioners, guided by the curé's advice in all matters related to school management, discharged their duties with scrupulous care. The same in due to the secretary-treasurer Mr. Jacques Boud, who had also given the security required by the school act.

15. *Monts-Louis*.—This place is one of the oldest fishing stations on the coast, yet it had only been formed into a school municipality in the month of September preceding; it was, next to Bonaventure Island, the least populous municipality and the poorest in all the District of Inspection. Without the aid of the Department of Public Instruction, it would be difficult, under the circumstances, to support a good school here. The inhabitants have always been favorably disposed towards education; and thus the Inspector, during a two weeks' stay among them in July last, ascertained to be the case. They had no school whatever; and as matters stood none could be established before the summer. Here, as at St. Anne-des-Monts and Cape Chatte, it is sometimes found impossible to obtain teachers at the proper time, owing to the isolated situation of these localities and the imperfect means of communication. This was much to be regretted, as the establishment of a school would be an inestimable blessing to people who could derive spiritual comforts but four times in the year, and who were left to rear their children in ignorance the most profound.

16. *St. Anne-des-Monts*.—This municipality, detached from Cape Chatte in the month of March, had been without a school after the death of Inspector Lespérance; but there was one now, conducted by Miss Gracieuse Lepage, of Rimouski, who received a salary of \$112 per annum. This school was not in operation at the time of the visit, but the Inspector had been informed subsequently, by persons in whom he placed much confidence, that it was well managed and attended by 42 children. The spacious schoolhouse in course of construction during the preceding year, had been finished. The Rev. E. Michaud and Jean Perce, Esq., had zealously contributed to the success of the schools; and their valuable advice had also materially assisted Mr. Béchard in the discharge of his duties.

17. *Cape Chatte*.—In this municipality there was but one school in operation; it was situated on the west side of the river, and kept by Madame Lespérance, widow of the late Inspector. The classes had met about the middle of the month of July, in the year preceding. The teacher, who received a stipend of \$100 per annum, discharged her duty to the satisfaction of both the commissioners and the parents. It had not been found possible to levy the assessment in Cape Chatte, in that year, as great distress prevailed in consequence of the failure of the fisheries and the loss of seed-grain by fire. The system of voluntary contribution would be soon replaced by the assessment. The commissioners and the secretary-treasurer, Mr. Louis Roy, discharged the duties of their respective trusts with zeal and punctuality.

In concluding his report, Mr. B. remarks that there were still ten municipalities in which the assessment was not yet levied; and he states that he will use his best endeavors to place this District of Inspection on a proper footing as regards this important matter.

## MONTHLY SUMMARY.

### EDUCATIONAL INTELLIGENCE.

—In the Annual Report of the Queen's College, Gork, the President, Sir Robert Kane, gives the religious denominations of the students enrolled for the academic year 1860-61 as follows:—Roman Catholics, 97; members of the Church of England, 92; Presbyterians, 2; Wesleyans, 8; Independent, 1; Society of Friends, 2; Unitarian, 1; total, 203. A parliamentary return shows the number of persons who have completed their education at the college of Maynooth from the year 1845 to the year 1861 inclusive. The total number is 975. The numbers for



each year range from 46 to 72. In the first year the number was only 38, but it was never afterwards so low. The Corporation of Dublin, after a stormy discussion, have at length succeeded in carrying a motion by Alderman d'Arcy, to the effect that, as the Catholics of Ireland are anxious to extend the advantages of education in the highest branches and with that view have, at great expense, established the Catholic University, which already has a large number of matriculated and non-matriculated students, it is the duty of the Government, which professes a desire for the promotion of first-class education, to encourage and facilitate this great educational effort by granting a charter to the Catholic University. The motion was carried by a majority of 29 to 10.—*Educational Times*.

—The New-York papers announce the advent to this country of a Mohawk Indian, *en route* to Oxford, for the purpose of finishing his education. Oronhyatekha is reported to be twenty-one years of age, and to be from the Reservation of the Six Nations, near Brantford, upon the Grand River, Canada West. For two years past he has been a member of Kenyon College, Ohio, and upon the late visit of the Prince of Wales the royal party became much interested in him. He comes under the auspices of Henry L. Acland, M. D., F. R. S., late physician to the royal party, and then and now Regius Professor of Medicine in Oxford University.—*Ibid.*

—Mr. Léon Chevreau, Prefect of the Department of Oise, France, has lately addressed a circular to the mayors within his limits, inviting them to take the necessary steps to provide every school in the communes with a garden, designed for the practical teaching of horticulture and arboriculture. Mr. Chevreau urges the mayors to do all in their power to secure these advantages for the schools, so that the pupils may, while enjoying the usual relaxations in study, have an opportunity of acquiring a practical knowledge of the arts that now constitute most important sources of rural wealth. The functionaries to whom the circular is addressed, are requested to submit plans which may be acted upon in making the desired acquisitions,—the prefect pledging himself to assist them in this enterprise by all the means at his disposal.

#### SCIENTIFIC INTELLIGENCE.

—The complete success of the Artesian well at Passy has given lively satisfaction to all, and especially to those who appreciate the scientific interest which attaches to it. The question of water is of itself interesting enough to the Parisian people who have been reduced hitherto to the Seine as the principal source of potable water. The Prefect of the Seine had conceived a project for an aqueduct to be fed by the numerous springs in the neighborhood of Châlons sur Marne. It seems quite remarkable that this project was little to the public taste and numerous voices were raised in favor of the river Seine! The Parisians are convinced that this river water is excellent; I will not affirm the contrary, but I am often struck with the complaints of strangers who generally charge upon this water the indispositions to which they are exposed during a visit in Paris. On the other hand I cannot maintain that in the long run an aqueduct is not the most economical provision for water for those who are prepared to meet the first cost. The example of Rome, which has been thus supplied even to the present day by the aqueducts of the Caesars, proves this beyond dispute:—what would have been the expense during two thousand years of raising the water of the Tiber to a suitable height, if the Romans had been reduced to this method?

The city of Paris while awaiting the adoption of more thorough measures for attaining her water supply, has achieved an experiment which has given an excellent result, resolving several important questions and opening new ones. The first and most important question is to know if the water in a well of large dimensions will preserve an ascensional force sufficient to furnish a quantity of water proportioned to its increased diameter. Assuming that the water in the Passy well should rise with an abundance equal to that in the well of Grenelle, it ought to furnish near 40,000 cubic meters in 24 hours. (The cubic meter = 220-17 gallons). Mr. Kind, the German engineer, the inventor of the method used in boring this well, and charged with the execution of the work, contracted to guarantee only 13,300 cubic meters, and on this estimate the plan was adopted. The boring commenced in September, 1854, and was finished on the 24th of September, 1861. The flow has remarkably exceeded the estimates—commencing slowly at first, on the 27th of last September it had reached 25,000 cubic meters and finally rested at 20,000 c. m. This yield, it is to be remembered, was found constant only at the well's mouth, and diminished very considerably when the tubes were added which carried it up to 25 meters above the ground. The well of Grenelle which yielded 2000 litres per minute at the surface, gave only 630 litres, less than one third, at the summit of a tube rising 33 metres above the level of the surface.

The second question is, what will be the influence of the new well upon the old, distant from it about 3000 metres (less than two miles). The latter soon commenced to show a diminished flow, and by the 1st of October the diminution had reached a fourth of the ordinary yield, falling from 630 to 460 litres per minute, a loss of about 40,000 gallons in 24 hours. The hope now is that there will be an increase again in the flow at Grenelle when the water of the Passy well by being raised con-

siderably above the level of the earth shall again reestablish the pressure. It appears impossible to foresee what may be the final result of this operation. Mr. Kind's method of boring perfectly met what was intended and the well had reached at the end of two years and three months 528 meters in depth, when a crush in the upper part seriously retarded the progress of the work. It required almost three years to repair this accident, and the total cost estimated by Mr. Kind at 350 thousand francs will reach near a million.

The water sheet is pierced 23 metres lower down than at the well of Grenelle—the latter being 547 metres absolute depth, and 511 m. below sea level, the well at Passy the orifice of which is 10m.5 higher has an actual depth of 588 m. or 533 m. beneath sea level. The temperature of the water is the same in both wells—28° C. or 82° F.

It is easy to see that the third question—what advantage is it to make a new experiment of the same kind?—leaves an ample field for discussion. [We would say on this point that the experience of California has been decidedly adverse to the multiplication of Artesian wells, in the same hydrographical basin. *Ens*—*Silliman's Journal*.

—Your readers will find more interest probably in a notice of observations made during a recent visit to the famous Tunnel now in progress through Mt. Cenis, already more than once noticed in these pages.

This tunnel, the execution of which has been assumed by the Italian government, presents peculiar difficulties, especially because it is impossible, owing to the enormous superincumbent mountain mass, to operate at more than two places. The mountain rises to the height of one thousand to fifteen hundred metres (2250 to 3000 feet, nearly) above the level of the gallery.

It was requisite from the first to find means to render the work as active as possible and employ machines for boring the blast holes. The little machine which moves the drills is ingeniously constructed but offers no difficulty to a mechanician. The percussion and rotation of the drill rod is accomplished by the power of compressed air which also injects a stream of water into the blast hole. In the trial made before the Geological Society of France which was conducted in one of the work shops of the company the drill entered a huge block of marble at the rate of 50 centimeters in 10 to 15 minutes (about 1½ inches per minute). The feature of the process which interested us most was the production of the motive power. It is accomplished by an ingenious application of the hydraulic ram so much used in the United States, and set up here on a gigantic scale. The use of steam power presented great difficulties in a tunnel, each half of which when near its end will be over six kilometers long (=3½ miles). They could not think of setting up boilers in the tunnel itself, since it was plain there would be serious difficulties in ventilation, and the attempt to conduct steam to so great a distance by pipes, would involve the loss of a great part of the power. By replacing steam with compressed air they enjoyed the double advantage of an economical application of the power at a distance from its source, and the use of the escaping air to renew the air of the tunnel. On the Italian side at Bardonecche, the air pumps are set up at about a kilometer from the opening of the tunnel, and they will act toward the last through nearly two leagues distance. The column of water which compresses the air in the chamber of the hydraulic ram is 25 metres high by 60 centimetres in diameter, the compression of air in the reservoir of the ram at the moment of fall is six atmospheres—at this instant a valve yielding at five atmospheres opens and a part of the compressed air escapes into immense boiler-like reservoirs. Five or six of these apparatus are needed for the regular progress of the work in the tunnel. The inventor of this remarkable apparatus, Mr. Toummelier, is director of the works. It is impossible to conceive any thing better adapted for a mountainous country where water is abundant. The apparatus appeared to us simple enough in its essential parts, which permitted the use of adequate solidity in the rest to resist the formidable shock with which it is shaken at short intervals. If the construction of these machines and the boring leaves little to desire it is by no means so sure that the perforation of the tunnel can be accelerated as much as would be presumed. They have perfected the rapidity of drilling, but the great labor of removing the rubbish is not accomplished more quickly than before. At the outset the engineers estimated six years, and to-day it seems probable that 12 years will be required to finish the tunnel if no unforeseen obstacles arise in the work.—*Ibid.*

—The annual meeting of the Acclimation Society was held at the society's offices, 3, Duke-street, Adelphi, on the 23th March, Higford Burr, Esq., in the chair, when the second annual Report was presented by the Secretaries. The society now numbers 41 patrons and 24 life members, besides annual subscribers. The balance sheet for the year shows a balance at the banker's of 422l. 14s. 4d., besides a sum of 150l. in hand for Chinese sheep. Through the kindness of his Grace the Duke of Newcastle, Her Majesty's Secretary to the Colonies, who is also one of the patrons of the society, the Governors of our Colonies throughout the world have been communicated with, with a view of enlisting their aid on behalf of the society. In consequence of this, relations of the most satisfactory character have been established with Queensland, Australia, New Brunswick, Prince Edward's Island, New Zealand, and South Africa. A gentleman residing at South Africa is also prepared to send supplies of the eland and other useful animals. During the past year, the society has imported Chinese sheep, which are recommended

as extremely fruitful in breeding, excellent for eating, hardy in their nature, and obtainable at a low cost, in fact, the very sheep for cottagers. There have been also several satisfactory experiments by members in the way of acclimating and hybridising foreign deer. The society is also endeavoring to acclimatise the guan and the caracass—both birds from Central America, and both likely to be valuable additions to our domestic poultry. Among the other birds to which the society is paying attention, and which it hopes to introduce in abundance, may be named the *Totlegala* (or Australian mound-building turkey), the Australian and African bustards, the Wonga-Wonga pigeon, a great variety of ducks and water-fowl, the Honduras turkey, the Chinese sand grouse, Canadian Grouse, prairie grouse, American quail and gelinotte. Various valuable crosses of ducks have been obtained. In the way of vegetables, the society is making strenuous endeavours to introduce the *Dioscorea Batatas*, or Chinese yam. This vegetable is reported to be excellent for eating, and not difficult of cultivation. A specimen was exhibited, weighing 3lbs. 15oz., and a supply of tubers for planting has been issued to twelve members of the society. Several experiments of great prospective value are now fairly in progress, with every prospect of success, and channels for commencing others of still greater importance have been opened. The system upon which the society is arranged may now be said to be in good working order, and opportunities are offered for conducting experiments of the highest importance, if the means of bearing the expenses are provided. It must be remembered that in bringing over mammals, birds, and fishes from abroad, not only must the original cost and expense of transport be borne by the society, but it is also necessary to offer rewards to the ships' officers who take charge of the creatures during the voyage, as an inducement to give their zealous co-operation. The Council looks forward, indeed, with confident expectation to the time when the society will, like the French Société Impériale d'Acclimatation, number its members by thousands, and possess gardens and other appliances, provided by the Government for the conduct of its operations, similar to those which the French society is fortunate enough to possess.—*Educational Times*.

—By the last American mail we receive the intelligence that the inhabitants of the Red River colony, British North America, have inaugurated, under the auspices of the Governor of the settlement, and of the Bishop of Rupert's Land, a scientific association under the title of "The Institute of Rupert's Land," which promises to produce important results, in collecting and disseminating information respecting the extensive territories of the Hudson's Bay Company in North America. This immense region, occupying an area nearly equal to the whole of Europe, has hitherto remained almost a sealed land to the traveller and to the man of science. The expeditions of Franklin, Back, and Richardson, have, it is true, passed at different periods rapidly and hastily through the country on their way to the scene of their explorations in the Arctic Seas, and more recently the Colonial Office, and the Provincial Government of Canada, have each despatched expeditions to explore the comparatively narrow strip of country watered by the Red River and the Saskatchewan. A geological map of the country, and an ethnological map of the Indian tribes inhabiting it, by Mr. A. K. Isbister have also recently been published by order of the House of Commons, among the Parliamentary Papers relating to the Hudson's Bay Company. But beyond this the immense continent stretching from the frontiers of Canada to the Arctic Sea still remains practically a *terra incognita* to science. The object of the Institute of Rupert's Land is to dispel the ignorance which has hitherto prevailed respecting the condition and resources of this extensive and important territory by aiding and encouraging scientific exploration, and by directing and systematising the observations of individual travellers, missionaries, and traders in all parts of the country, and publishing from time to time the results, so far as they may prove interesting to science. Copies of the inaugural address of the bishop of Rupert's Land have been extensively circulated among the leading literary and scientific societies of England, Canada and the United States.—(*Idem*.)

—Dr. Dufosse communicates to the French Academy further researches into the vocal powers of certain fish, most of his observations being made upon species of *Trigla* and *Zeus* (gurnards and dories). He states the sounds to be produced by the vibration of the muscles belonging to the air bladder, and that large gurnards may be heard at a distance of six or seven yards. Out of five or six hundred individuals of the species mentioned, their voices were comprised between *si* and *re* inclusive. The sounds were instantaneous, or prolonged for several minutes, sometimes as long as seven or eight minutes. The pitch often varies during a single "sonorous emission." The finest vocal performers appear to belong to the species *Morrude*, who surpass all their congeners in producing a great number of completely distinct sounds. "They sustain the simple sounds better, and modulate better the compound sounds; they render more distinctly long successions of sounds different in tone and pitch; in fine, there is less dissonance in the sonorous vibrations they produce. Other species, however, beat them in intensity.—*Intellectual Observer*.

—The President of the Microscopic Society of London stated in his annual address that the beautiful machine presented by Mr. Peters has enabled the Lord's Prayer to be written in the 356,000th of a

square inch—a space like a minute dot. The English Bible contains 3,566 480 letters. The Lord's Prayer, ending with "Deliver us from evil," 223 letters; so that the Bible is 15,932 times longer than the prayer, and if we employ round numbers we may say it could be written in 16,000 times the space occupied by the prayer or in less than the twenty-second part of a square inch. In other words, the whole Bible might be written twenty-two times in one square inch. This wonderfully minute writing is clearly legible when placed under a good microscope. In using the machine the operator writes with a pencil attached to one end of a long lever, whatever marks he makes on a piece of paper are infinitesimally reduced in corresponding motions, by which a glass plate is moved over a minute diamond point. By means of Ibbetson's geometric chuck, beautiful geometric designs may be engraved on a similar scale of minuteness.—(*Idem*.)

—Under the title of Dialysis, a series of Phenomena (a brief account of which appeared in the "Educational Times," of September) have been brought prominently before the scientific world in recent lectures at the Royal Institution. It will be remembered that in the course of an extensive series of experiments on the diffusibility of various substances in liquids, Professor Graham found that certain general laws could be traced. A great distinction was found to exist between the diffusive power of certain crystalline bodies, such as salt, nitre, sugar, Epsom salts, &c., and that of such uncrystallisable substances as gum, albumen, starch, gelatine, and other similar bodies which unite readily with water but do not crystallise. As soon as these facts had been ascertained and announced, their practical application became speedily evident. Dialysers, having the appearance of tambourines, formed of rings of gutta-percha, over which is stretched "parchment-paper" (formed by the action of strong sulphuric acid on ordinary paper), have been constructed and applied to various practical purposes. When required for use, these dialysers are floated upon the surface of pure water, and the mixture to be dialysed poured within these, when dialysis immediately commences, the crystalloid substances passing through into the water, and the non-crystallised, or "colloid," remaining in the dialyser. This singular action may at once be rendered visible by pouring into the dialyser a mixture of Magenta dye and burnt sugar, when the former being crystallised, passes through, tinging the water of its own beautiful hue, whilst the burnt sugar, having had its crystalloid character destroyed by the heat, remains behind. The dialyser is now used to obtain solutions in pure water of many substances formerly thought to have been insoluble, among which may be mentioned silica, Prussian blue, peroxide of iron, alumina, or the basis of clay, and stannic acid, or peroxide of tin. In this way it has solved that hitherto insoluble geological puzzle, the formation of flint, and it has aided the medical jurist in his endeavours to separate arsenic and other crystalloid poisons from the heterogeneous contents of the human stomach. Much light has been thrown by it on many hitherto obscure points of physiology, and in the arts of dyeing and those requiring the ready separation of different substances, it is easy to see the advantages offered by the discovery.—*Educational Times*.

## MISCELLANEOUS INTELLIGENCE.

—Few readers can be aware, until they have had occasion to test the fact, how much labor or research is often saved by such a table as the following:

- 1607—Virginia settled by the En- 1816—Indiana admitted into the  
glish. Union.
- 1614—New York settled by the 1816—Mississippi admitted into the  
Dutch. Union.
- 1620—Massachusetts settled by the 1818—Illinois admitted into the Un-  
Puritans. ion.
- 1624—New Jersey settled by the 1819—Alabama admitted into the  
Dutch. Union.
- 1628—Delaware settled by Swedes 1820—Maine admitted into the Un-  
and Finns. ion.
- 1635—Maryland settled by Irish 1821—Missouri admitted into the  
Catholics. Union.
- 1636—Rhode Island settled by Ro- 1836—Michigan admitted into the  
ger Williams. Union.
- 1639—North Carolina settled by the 1836—Arkansas admitted into the  
English. Union.
- 1670—South Carolina settled by the 1845—Florida admitted into the  
Huguenots. Union.
- 1682—Pennsylvania settled by Wil- 1845—Texas admitted into the Un-  
liam Penn. ion.
- 1732—Georgia settled by Ogle- 1846—Iowa admitted into the Un-  
thorpe. ion.
- 1791—Vermont admitted into the 1848—Wisconsin admitted into the  
Union. Union.
- 1792—Kentucky admitted into the 1850—California admitted into the  
Union. Union.
- 1796—Tennessee admitted into the 1856—Oregon admitted into the  
Union. Union.
- 1802—Ohio admitted into the Un- 1858—Minnesota admitted into the  
ion. Union.
- 1811—Louisiana admitted into the 1861—Kansas admitted into the  
Union. Union.

**THE NEW MINISTRY.**—The names of the gentlemen composing the new ministry are as follows: *Upper Canada.*—Hon. John Sanfield McDonald, Attorney General; Hon. James Morris, Receiver General; Hon. Michael Hamilton Foley, Postmaster General; Hon. Williams McDougall, Commissioner of Crown Lands; Hon. William Pearce Howland, Minister of Finance, and Hon. Adam Wilson, Solicitor General. *Lower Canada.*—Hon. Louis Victor Sicotte, Attorney General; Hon. Antoine Aimé Dorion, Provincial Secretary; Hon. Ulric Joseph Tessier, Commissioner of Public Works; Hon. Thomas D'Arcy McGee, President of the Executive Council; Hon. François Evanturel, Minister of Agriculture and Statistics, and Hon. John Joseph Caldwell Abbot, Solicitor General.

Mr. Sanfield McDonald was some years ago Speaker of the Assembly, and held a place in the cabinet during former Administrations. Mr. Sicotte, who upon the invitation of Mr. McDonald formed the Lower Canada section of the new ministry, has also occupied the Speaker's chair in the Assembly.

With the exception of the Brown-Dorion cabinet, this is the first complete change of ministry that has taken place in Canada since 1848. A glance at the different administrations which have succeeded each other since the Union may not be uninteresting to some of our readers:—

Ogden-Sullivan.—Feb. 13, 1841.  
La Fontaine-Baldwin.—Sept. 16, 1842.  
Viger-Draper.—Sept. 3, 1844.  
Sherwood-Badgley.—May 29, 1847.  
Lafontaine-Baldwin.—March 18, 1848.  
Hincks-Morin.—Oct. 28, 1851.  
McNab-Morin.—Sept. 10, 1854.  
McNab-Taché.—Jan. 25, 1855.  
Taché-McDonald.—April 21, 1856.  
McDonald-Cartier.—November, 1857.  
Brown-Dorion.—Aug. 2, 1859.  
Cartier-McDonald.—Aug. 6, 1858.  
Sanfield McDonald-Sicotte.—May 24, 1862.

Although the Baldwin-Lafontaine government resigned in 1843 and M. Viger was sent for at once, the new government was not completed before September 1844.

Messrs. McDonald and Cartier maintained themselves in power ever since 1854 and 1855. The first named gentleman formed part of the McNab-Morin administration, and the last formed part of the succeeding ministry. It does not fall within our province to offer any appreciation of the ministerial career of these gentlemen; but in justice we feel called upon to say that, to the ability and the energy of the late Premier, Hon. M. Cartier, and to the great interest he has manifested towards public instruction, we are indebted for the advance it has made in Lower Canada during his administration. The establishment of Normal Schools, and other improvements obtained under very adverse circumstances, must ever be regarded as very important services rendered by him to the country.

#### STATISTICAL INTELLIGENCE.

—From the official tables of the census for 1861 (April 8th) of the United Kingdom, we have prepared the following:

	POPULATION.				Pop. to Sp. Mile.
	Area Sp. Miles.	Males.	Females.	Total.	
Total of England, . . . .	50,922	9,207,837	9,742,093	18,949,930	372.1
“ Wales, . . . . .	7,396	551,015	560,780	1,111,795	150.3
“ Scotland, . . . . .	31,324	1,447,015	1,614,314	3,061,329	97.8
“ Ireland, . . . . .	31,870	2,804,961	2,959,582	5,764,548	181.5
Islds in British seas, . . .	..	66,394	77,385	143,779	..
Army, navy and merchant seamen, . . . . .	..	303,412	..	303,412	..
Total U. Kingdom, . . . .	14,350,634	14,954,154	29,334,788		

The population of the United Kingdom was, in 1801, 16,095,000; in 1851, 27,452,262; in 1861, 29,334,788. Of Ireland the population was, in 1851, 6,552,385; in 1861, 5,764,543, showing a decrease in the ten years of 787,842.—*Hunts' Merchants' Magazine.*

—The following interesting facts we have collected from documents issued by the English colonial office very recently:

In 1839 England had 24 colonies; in 1858 she counted 32. In the former year the population was 3,859,000 persons; in the latter, 8,149,000, being equal to an augmentation of 4,290,000, or 111 per cent. In 1838 the revenue they raised was £2,381,000; in 1858 it was £10,256,000, which was equal to an increase of £7,875,000, or 330 per cent. The value of the imports in the earlier year was £16,137,000; in the latter, £50,614,000, showing an increase of £34,477,000, or 214 per cent. The exports from the colonies were in 1838 valued at £14,904,000, and this amount stands against £43,017,000 in 1858, being an increase of £28,113,000, or 190 per cent.

The paper from which these figures are taken divides the colonies into seven groups: 1. British North America is now constituted of seven separate colonies. Omitting British Columbia and Vancouver's Island, from which, at the time the paper was prepared, no returns had been received, the population in 1858 of the remaining five was 3,389,000; revenue, £1,176,814. The imports were, in value, £10,195,000 and the

exports, £8,437,000. In 20 years the former value had nearly doubled, and the latter much more than doubled. 2. South Africa has two colonies. Population in 1858 was 408,000, revenue, £510,000; imports, £2,688,000; exports, £1,894,000. 3. Australia and New-Zealand, which in 1858 included six colonies, with Queensland. The latter dependency has, since that date, been separated from this group. Population, 1,125,000; revenue, £3,997,000; the imports were valued at £25,552,000, and the exports at £21,376,000. In relation to the amount of its population this group shows by far the greatest value alike in its revenue, its imports and in its exports; the first is at the rate of £5 7s.; the second, £22 14s.; and the third, £19 per head. 4. West Indies number seven colonies, in which, not going beyond the period under review, we observe some marks of progress. The population in 1858 was 948,000 persons, or 253,000 more than in 1838. The revenue is £921,000, which was nearly 40 per cent. higher than it was 20 years earlier. Imports, £5,300,000; and the exports, £6,692,000. In the former a small increase is shown, but in the exports there is a large falling off, being now £1,881,000 less than in 1838. 5. West Coast of Africa is divided into three colonies. Population, 194,000, which appears to have been quite stationary; revenue, £44,789; imports £601,945; which shows an increase in 1858, as compared with 1838, of £299,081, or nearly double in value. That the European population in this group should not increase is not surprising, when we consider the nature of the climate of Sierra Leone, Gambia and the Gold Coast. 6. Eastern Colonies are now four, namely: Ceylon, Mauritius, Hong Kong and Labuan. The population in 1858 was 2,069,000; revenue, £1,272,602; imports, £6,246,000; and exports, £4,543,000. The imports were £4,424,000, and the exports £3,482,000 higher than in 1838. The paper concludes with a small group, called the “7th Miscellaneous,” consisting of St. Helena, Bermuda and the Falklands, the total population being 17,000 in 1858.—(*Idem.*)

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