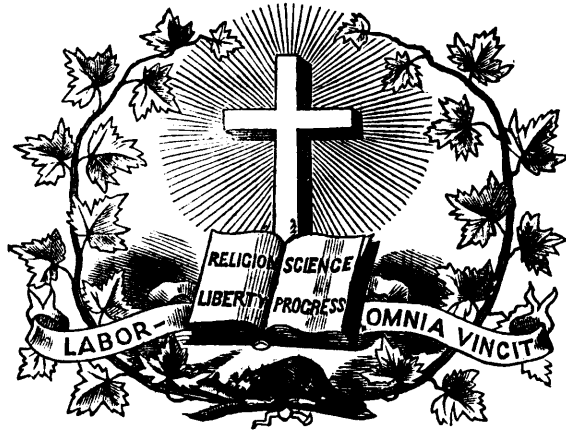


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THE  
**JOURNAL OF EDUCATION**

Devoted to Education, Literature, Science, and the Arts.

Volume XVI.

Quebec, Province of Quebec, May, 1872.

No. 5.

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**Across the Sun.**

The passage of the planet Venus over the mighty and tumultuous sea of fire which makes up the face of the sun, is an event of so infrequent occurrence, that it is safe to say no living man includes it in his personal recollection.

Whatever incidents of the glowing skies and the measureless space-depths have disclosed themselves to the vision of vigilant sentinels—whose eyes are yet unsealed in death's deep slumber—the transit of Venus may not be numbered among them, for it has not taken place within a whole century. If it were not for the records of history on the one hand, and the indisputable demonstrations of celestial mathematics on the other, it might be regarded as an astronomical myth.

But just a hundred and three years ago, this bright June month coming, the event so unreal to living eyes, actually happened, and not in any sense to the surprise of the scientific world. On the contrary, it was a repetition of a perfectly accredited phenomenon, and had its date assigned to it by astronomic prescience. It was anticipated, and costly arrangements were made by a great government to have the rare procession carefully inspected from its first step to its vanishing point.

In June, 1769, a company of English astronomers sailed from London, in the special appointed ship, the Endeavor, and, in remote and widely-sundered regions of the globe, scanned, by detachments, the face of the sun, to note the path, across its glowing sierra, of a little black spot, which might, to an untutored eye, have seemed a chance speck, a mere mote.

In less than the space of three years from this date—in December, 1874—there will be another transit of Venus,

and the importance of it to science may be measurably estimated by a consideration of the fact that the British Government has appropriated a sum exceeding fifty thousand dollars for the equipment of various expeditions of learned men and scientific experts, to take the closest possible cognizance of its progress and phases.

These expeditions will doubtless go to the remote zones of our globe, to Hawaii, on the one hand, and on the other, to Crozet Island, or Mauritius, in order to obtain favorable views of the transit.

It will happen, not as in the last historical account of it,—in the "leafy June," but in the dead of our winter; and extreme northern points, otherwise most desirable for the sentinels, will be very bleak, and perhaps utterly inaccessible. In the antarctic latitudes, also, there will undoubtedly present themselves formidable barriers to the enterprise.

In spite of difficulties, however, the scientists will go, undaunted by cold, by icebergs, by the chance of encountering dense fogs, which may hide sun and satellite alike from their sight. From opposite ends of the earth they will look for the exceptional passage of the fair queen of the planets over the blazing surface of the sun.

Other governments, and our own among them, will probably do as the British Government has done, make appropriations for similar adventurous parties; and the common and single object of all explorers, whether by national or private commissions, will be to see how Venus will behave while she is daringly making her trespass on the solar disk.

A hundred thousand dollars will not cover the cost of scientific observations of this unusual event. The observers, as the fruit of toil, perilous exposure, patient waiting at some points for months, will see, generally, a small round disk of intense blackness—which is the unilluminated hemisphere of Venus—impinge upon the sun's glowing border, and occupy four hours—more or less by minutes, according to the observer's position—in accomplishing its procession across the disk, when the little pageant will come to an immediate close!

They will have been, if the sun's face is clear at the imminent moment of contact, and continues smiling, in spite of its brief blemish, to the momentous instant of the planet's *congé*, intensely interested witnesses of the scene.

If it were not important that they should be free from excitement, and they were not men of severe mental discipline, as astronomers are, it might be assumed that they would be excited as well as interested.

They must, however, be cool, careful, collected; for they will have to use both eyes and hands, the one to see, the other to record by electric pulsations just what they see. The path of the planet will be to them all a chord of a great circle, but it will vary in length to the different groups of observers, and its variations will be parts of the efficiency of the whole work to be done.

But what will it all amount to? The question, "*Cui bono?*" seems hardly impertinent here—at least to the unscientific reader. He will, indeed, conclude that there must be a value behind and beyond all this valor of investigation, but he will not be deterred from asking what it is.

The question demands and deserves an answer to vindicate the expenditure of so much money and so much time, the apparent waste of the "two hundred pence" spent upon the ointment.

All this careful, elaborate, and costly work is to be done to help astronomers get nearer than they have yet been able to do, to what may be reasonably reckoned the bottom-line in the grand sum of figures which express the sun's distance from the earth.

No problem in astronomy is more important or more difficult of solution than this. Upon the degree of accuracy we reach in working it out depends all exterior problems of the celestial distances and magnitudes. It is precisely this consideration which impels every conscientious student of the skies to unremitting efforts in approximating a true issue.

For more than a score of centuries the sun's distance has been a moot question in astronomy. At the other extreme of this immense period of doubt the old Samoan sage Aristarchus stretched his lunar fathoming-line out into space, and thought he reached the sun at a distance of twenty moon-removes, or fewer than five million miles.

After him, Hipparchus and Ptolemy made scarcely less amazing failures with other methods. The truth is, their processes were inadequate—and would be none the less so to-day—for reaching any reasonable result. Many decades have elapsed since better methods of attacking this obstinate citadel of astronomical problems were devised, and even now the best result is but an approximation.

This special incertitude of astronomers seems infelicitous, and has, indeed, brought some obloquy on their science. Yet this unjustly, for the obvious reason that in solving so vast, so deep, so intricate, so all-comprehending a question as that of the sun's distance, all parts of the work, if yet ingenuous and earnest, are, in view of the conditions of difficulty which environ it, and of the inevitably cumulative nature of such knowledge, steps and progress rather than what they may seem to unthinking minds to be, simply overthrows and corrections of errors.

These corrections are, indeed, taking place continually and hopefully; and very recently the well-accredited figures of the sun's distance have dropped from ninety-five to ninety-two million miles as the result of Stone's patient review of Laverrier's splendid but still culpable calculation!

But the end is not yet. We have not attained it, and must plod with patience onward and upward still. There are probabilities of error even now that move over a broad arc of half a million miles, and this is quite too far for the pendulum of doubt to swing. It must be shortened one-half, and, if possible, that remainder be again divided. That we shall ever come to the absolutely real figures of the distance is not to be imagined. But, reached within

a hundred thousand miles, the conditions for insuring comparative accuracy to dependent measurements throughout space would be fulfilled.

The calculation of this distance by the transit of Venus is the very best of the various modern methods for solving it. But the infrequency of such an event is a formidable hinderance to success. If it happened in every one of the revolutions of Venus about the sun—as on a certain condition it would do—we should be able to study the problem every eight months, instead of once or twice in something over a century. The condition which would insure to us such frequency of the occurrence, now so rare, would be simply the coincidence of the earth's plane of motion with that of the inferior planet.

If they both moved round the sun on one level, then every time Venus came between the earth and sun, she would be seen rolling across his disk as she will be in 1874. But the two orbit-levels do not lie together. They are tipped from each other, and intersect at two opposite points. Hence, for the most part, Venus goes above or below the sun at her conjunctions. When, indeed, she does strike a node, or crossing-point, at the time when she is going between us and the sun, it is mathematically sure that, in two days less than eight of our years afterward, which means in thirteen of her own orbital sweeps, she will hit that node again, and another transit will happen.

So there are always two transits at eight year intervals, and this double recurrence has a periodicity of something more than a century.

If our astronomers—and the world's, more broadly—are baffled in their wishes in 1874, there is consolation for them in the hope set before them of success in 1882. It is probable that the latter transit will present more embarrassments to their researches in its inevitable conditions than the earlier one will. Still, should the little black disk roll over the solar photosphere in sulky shadows in 1874, let us hope that, in 1882, it will traverse it in undimmed splendor; and that, ten years hence, if not in two, we shall be upon the eventful eve of such decisive knowledge of solar distance, as shall enable us to measure the breadth of the solar sierra almost as surely as we can the stretch of the terrestrial desert with rod and chain!

But how can we reach such sublime results through the mere observation of the passage of a black dot across the bright field of incandescent gases which envelop the solar orb?

The common method of estimating distances which lie betwixt the observer and unapproachable objects, is by triangulation. This has been effectually applied to the moon. Why not, then, to the sun? Because, it may be replied, briefly, the base-line of the triangle resulting from such an observation could not possibly exceed the length of the earth's diameter; and this distance of eight thousand miles, as compared with the many millions of miles certainly included in the distance sought, would be insufficient to give us an angle extensive enough to avoid fearful results of almost unavoidable (however minute) errors in the calculation. An error—to illustrate this point—that would make a variation of not over sixty miles in the moon's distance from us, would, if carried over into the solar problem, swell into the tremendous mistake of ten million miles—an error nearly three times exceeding that already referred to as corrected by the skill and patience of the first assistant at Greenwich.

What is immediately south after in the observation of Venus upon the disk of the sun is to get at the planet's true distance by obtaining, through minute and carefully-guarded processes, the parallax which Venus affords to observers upon opposite sides of the earth. This angle obtained, the problem of the planet's distance is solved,

and then, by the application of Kepler's law of relations between the celestial bodies as to distance, the grander, the colossal, and central problem of celestial mathematics is brought to the very edge of minute revelation.

This method of dealing with the great astronomical *opus* of centuries was recommended by Edmund Halley; though, in honoring him for his foresight, we must not overlook the fact that James Gregory, at a still earlier day, suggested the probable feasibility of obtaining the solar parallax through the knowledge of that of Venus by transit.

This knowledge might, perhaps, be reached by direct observation of the planet, at any one of her nearest approaches to the earth, exactly as the parallax of the nearest exterior planet, Mars, has been calculated. Of these two results, however, the former would be much the less valuable and trustworthy, owing to the general absence—or, rather, to the invisibility—of contiguous stars, as accessories to careful measurements, in the proximate radiance of the sun. To get Venus, therefore, upon the sun's face, is to obtain this great primary advantage in attacking the evasive question of her precise parallactic displacement, that we have, as it were, behind her a dial-plate, and can make felicitous use of it in measuring the chords she traces upon it in her path.

This brief paper cannot pretend to deal with the minor embarrassments which belong inseparably to such observations. They are many, however, and require subtle processes for overcoming them. The compound and complex motions of both the planets—Venus and the earth—while the observations are making, are not slight hinderances to the work, although, of course, ultimately manageable.

Then, too, there are curious distortions of the little black spot, at the imminent moments of its entrance upon and departure from the sun's face, in which it presents much the appearance which a drop of water does when slowly lifted from a larger volume at the end of a rod. The planet assumes a sort of pear-shape, which is, indeed, an optical illusion, but in this case a very serious one, since it makes it uncertain, for an important moment, whether the edge of the planet is actually clear of the sun's absolute edge or not.

This phenomenon, slight as it seems, as a disturbing feature and force, actually tended to invalidate the laborious processes and calculations of the experts, who, at Kola, in the Arctic Seas, at Pekin, at Otahcite, and other points, made sedulous search for the solution of the parallactic problem in 1769.

Doubtless, Venus will deport herself in the same eccentric, if not unbecoming, fashion in 1874; but the astronomers will not again be taken in by it. They had, indeed, eight year's warning after her first strange antics in 1761, before they were renewed in 1769, but in all that timely interval they were, unhappily, not considered and provided for as they have been since. Venus can stand upon the sun's brink like a black peg-top on its point, or a pear upon its stem, if she will, but the observers will be able now to tell to a second when to count her wholly within the solar rim.

One method of observing the transit—and that, too, the general method which the English expeditions will pursue (but whether with the best judgment or not is perhaps fairly questionable)—is a modification of Halley's plan, and known as Delisle's method. It deals with the planet just at the beginning or end only of the transit. Two observations, one made at the earliest observable beginning-point, and another, on the earth's opposite border, at the latest beginning-point—or equally well if the ending-points are chosen—will give the sun's parallax. Exactness of comparative time in these remote observations is the thing essential here, and this is not easily assured.

Halley's method, on the other hand, deals with Venus in the actual transit—measuring its precise period and the chords she traverses, as noted at such nearly antipodal points of the earth as are available for the view. Sometimes the best points are in the sea, or in other impracticable positions. All these things combine with time-difficulties to make the work of transit-taking always most delicate in detail, and sometimes most doubtful in decision.

Yet the eager explorers of the celestial depths, accustomed to deal with apparently overwhelming tasks, subject them to law, to exactness of condition, to uniformity of result; and thus what would otherwise seem insuperable, falls—if not easily, yet eventually—under the control of human genius, skill, and persistence.

The present accepted parallax of the sun, as obtained, not by transit calculations, but by most patient processes, which have beguiled no meagre portions of the weary interval since Venus obliged the astronomical college with a sight of herself in the rôle of a blackamoor, is 8".9, and this formula, mathematically translated, means 91,730,000 miles, with a chance for error somewhere within the hundreds of thousands, and of which possible error we may not reasonably hope to get any further contraction until the next transit of Venus comes off.

Of other processes, herein referred to, some are so beautiful and ingenious that the reader will be willing to linger for a glimpse of them. One, indeed, has been mentioned already—the direct observation of Mars; which red-atmosphered globe sometimes comes almost as nigh to us as Venus, and, from its position among the stars, is a good auxiliary in this problem-work.

Another is the extraordinary and daring plan of estimating the sun's distance by experimental tests of the amazing speed of the light-ray. This speed, as usually stated, of 192,000 miles in a second, is only in a sense conjectural, and really affected by the one great doubt we are dealing with. When the sun's distance is determined, the actual velocity of light will be settled with it.

Yet bold physicists have come independently to something like certainty in estimating the rate of the motion of light. Foucault and Fizeau, by measuring the duration of visual impressions—the one by means of rotating mirrors, the other by rotating toothed wheels—have given us figures for this problem. Foucault's calculation, indeed, was deemed scientific enough to cast doubt upon the distance-problem as it stood. He made the speed of light something short of 186,000 miles a second, which would reduce the sun's distance several thousand miles below the latest accepted data.

Again, irregularities in the motion of both the earth and its satellite have been ingeniously and hopefully levied upon for tribute to the growing grandeur of the resources in the hands of the astronomer, for yet vanquishing the formidable foe holding back from him so long this important secret of the sun's real distance from the earth.

These investigations, pressed with so much pains, patience, and persistence, are indisputable proofs of the unfaltering and invincible spirit of modern science, which will not accept uncertainties, unless in conditions which clearly render them finally inevitable.

WILLIAM C. RICHARDS, in *Appleton's Journal*.

### Theory and Practice in the School-Room. (\*)

Teachers who year after year have met in this room to compare notes, have by this time, I doubt not, in almost

(\*) Paper read by C. G. K. Gillespie, Esq., Secretary, before the College of Preceptors, London, at the evening meeting of 8th February, 1871.

every case become weary of hearing that the true principles of our profession are still but little understood; that the canons of Education, as generally admitted, are to a great extent based upon error and misconception; and that, in the most necessary understanding of the work to be done and the way to do it, we are but on the threshold of investigation. It has been as often brought before us that the great body of middle-class teachers has been formed, and is being recruited, by the introduction into it of persons whose preparation for their responsible duties has not begun till those duties have already come upon them, and who have either floundered into some kind of experimental knowledge of their profession by the accident of talent or circumstances, or, by careful following of ancient rules and mediæval methods, have kept the even tenor of their way, in perfect unconsciousness of the mistakes they are perpetuating. To remove these defects, to set before the teacher, especially the young teacher, the true principles of his art, to raise him to a right appreciation of his noble place among the world's workers, and to stimulate him deeply and earnestly to investigate the nature and properties of the materials and implements at his disposal,—have been the leading objects of this institution, and of the many talented and experienced men whose knowledge and opinions on educational matters have been brought under contribution at our evening meetings. The precepts of philosophy, the thoughtful hints of tentative speculation, the bolder assertions of successful experience, have been set before him for his guidance in the general consideration of his work; while the most recent facts regarding special subjects of instruction have been placed at his command. He has listened with delight as he has recognized the words of truth, and his heart has burned within him as he has thought, "It is thus that I will teach; I too shall be an educator." He has returned to his work with high thoughts and earnest hope: but (*experto crede*) he has found himself surrounded, as before, by the same cares, the same difficulties, the same petty worries. True, he has learned to believe that for all these there are remedies to be found in the *arcana* of his profession; he has realized, at least for a time, the prospect of such attainments in scientific mind-formation as shall comfort him for all his present discouragements; but he asks, "What shall I do now? How shall I apply, in the work of this very day, the theories which last night commanded the assent of my understanding by their simplicity and truth, but which seem to lie so strangely out of reach at my greatest need?" Such questions have often been asked of one another by those who have met here from time to time; and it seems, on the whole, to be rather in the practical solution of these everyday problems, than in the demonstration of theoretical principles, that we stand in greatest want of mutual help and instruction. In coming before you to-night, it is my purpose, not presumptuously, to assert that I have found what so many have sought in vain, but to tender some results of my own attempts in this direction for criticism and discussion.

Much has been said of late in reference to the examinations of this College in the Theory and Practice of Education; and I feel sure that much satisfaction has followed the announcement of the Council's intention to modify these examinations in such a manner as to give them a more practical character and effect. Yet it has always appeared to me that great good must be done by the careful consideration of the departments to which in those examinations the greatest amount of attention has been paid, viz, the principles of mental discipline and the history of education. There are, I think, good reasons for the belief that, in the case of persons intending to become teachers, who possess practical opportunities for training

in matters of detail, these two should constitute the leading subjects of professional study. But the strongest argument which presents itself to my mind in connection with the subject of training institutions for teachers, is the vital necessity that the beginner's lessons should impress upon him, in the most clear and direct manner, the sacredness of the duties in the which he proposes to engage. Upon this point I need not enlarge, except to remind you of the acknowledged truth, that special training is required, not so much of necessity in knowledge of facts, as indispensably in thoughtful appreciation of the work to be done. I cannot, however, resist the conviction that one of the most important parts of the training of the future teacher consists in showing him, by his own personal experience, the mental process by which a given fact or train of facts may be learned; and beyond this, leading him to a habit of measuring the steps downward from his own capacity to that of the pupil to whom these facts are to be transmitted. One of the greatest difficulties, so great that its conquest is often looked upon as evidence of special talent, is presented by the disparity between the teacher's ordinary conversation and the mental calibre of the boys in his class. A little while back I heard a teacher give an excellent lesson on Mathematical Geography to a junior class. He had evidently prepared the subject with considerable care, and he led the boys along with him very satisfactorily till he reached the culminating point of his lesson, indicated by these words, "Longitude is distance east or west of a given meridian." The idea of "meridian" had been etymologically and practically settled, the bearings pointed out by the boys themselves, and several examples similarly stated in illustration. So far so good; but it happened that the form of words, "a given meridian," was unfamiliar to the children, whose geometrical studies had not yet extended to the peculiar phraseology of Euclid's Elements. The result was mystification, not only of the class but of the teacher, to whom the sudden collapse of comprehension and attention was apparently inexplicable. It is easy to suppose such failures as this being the rule rather than the exception, if we admit one of several possibilities; e. g., the pupil's interest in the subject being as yet unawakened, his want of confidence preventing him from seeking explanation, or his eager interest leading him to assign to the teacher's words a meaning different from that intended. But as this is only one phase of a defect more or less accidental to several methods of instruction, it may be best, in our consideration of preventive measures, to examine the leading principles of different methods, with a view to ascertain the direction in which each incurs the danger of failure.

The means employed for communicating or fixing knowledge, or testing its extent and accuracy, seem to be susceptible of classification thus; Oral Teaching, Catechetical Exercises, Examination Questions.

First, Oral Teaching, or the Lecture System. In the use of this method, we have to consider, whether or not it is desirable that the pupils should take notes of the lesson; and, if desirable, whether such notes should be written simultaneously with, or subsequently to, the lesson. These are matters on which there seems to be much diversity of opinion. In the oral lesson, the teacher is left to himself; and (assuming conscientious preparation) he has it in his power to marshal the facts, and bring them out in his own way, and as he judges best for the comprehension of the class. His object is, that these facts shall be recognised and remembered; but in this special object he does not, or should not, overlook the general object, the habitual cultivation of the faculties of attention, observation, reflection. If, in the course of the lesson, a pupil intermits his attention for a while to write down

special note, he is in danger of losing the connection, which the teacher has, of course, taken care to make essential; and if the teacher pauses on every such occasion, he must necessarily do much less in the time, besides giving the rest of the class an opportunity for disorganization during his silence. If he arranges to tell the class when notes are to be taken, there is danger of the rest of the lesson being considered of minor importance, and hence of relaxed attention to all; while the faculty of observation, by which the pupils would for themselves have noticed these salient points, is left without sufficient exercise. If, at the close of the lesson, the pupil at once enters the leading particulars in his note-book, he thereby frees himself from the immediate necessity of reflecting upon and mentally reproducing the chain of association by which those particulars were presented and could be retained. On the other hand, when the pupils have nothing to do but to listen, and the teacher has nothing to do but to talk, there is danger of their seeking unauthorized relief from the monotony of continued mental effort, while he is expending much valuable but misdirected energy in talking over their heads. From all these considerations, confirmed by many experiments, it appears that the oral lesson produces the best effect, as regards both information and mental training, when the teacher drives home and relieves it by questions, pertinent but not too numerous, and elliptical sentences to be filled up by the pupils; and that it is better that the obligation to reproduce the lesson should be deferred till after the lapse of at least one day, a period in which it would probably be forgotten but for the exercise of attention, observation, and reflection during its delivery.

Next in order comes the Catechetical System, in which the lesson is first prepared by the pupil alone, and afterwards worked out with the teacher. Lessons in this section consist of those in which verbal accuracy is required, and those wherein the substance only is insisted upon. On the subject of learning by rote, many grave objections have been raised, to which may probably be traced the almost entire expulsion of catechisms from the lists of approved the school books. I may, perhaps, be pardoned for citing one or two examples, from personal observation, of the way in which this system sometimes tends to mislead both teachers and pupils. I was once brought into personal contact with a practitioner of some twenty years' standing, whose boys used a little French phrase book (very fair of its kind) having the French and English on opposite pages. The weekly lesson from this book consisted of *one page only*, but this had to be repeated *verbatim*. Another case:—A young friend whose education was within three months of being "finished," was compelled by adverse circumstances to seek some remunerative occupation. Her talents and attainments removed all difficulty as to the choice of her future career, so it was arranged that she should come to us on stated days, just to keep her acquirements from getting rusty till she could be placed out as a junior governess. Having ascertained that she had "been through" the History of England more than once, I requested a few particulars as to early times, for my guidance in the advanced course which alone could be suitable in such a case. I was instantly informed with the most alarming glibness, that "the ancient British army consisted of infantry and cavalry; they also used chariots in war, to which scythes were attached, which spread terror and devastation wherever they drove." On my expressing astonishment at the accuracy and despatch of her recitation, she kindly offered to favour me with three or four pages in the same style. It was with some trepidation that, under these circumstances, I ventured to put a few questions (merely as a matter of form) relative to the meaning of some important

words. I thus learned that "cavalry" was a kind of sword, that a scythe was a forest, and that a chariot was a noble quadruped used in war.

There are, however, many studies in which some portion at least must be learned by heart; and it is well known that great results can be attained by a judicious use of the faculty of mere memory. But it must never be forgotten that those systems in which most success has been achieved in this way, make the memory-work merely the basis of a most thorough and searching inquiry into the minutiae of the subject. Only very recently we have been reminded of the value of such training in the study of English verse; and it may almost be accepted as an axiom, that the best results are gained in any subject when memory and judgment are exercised together. This principle applies to the method of fixing historical dates by means of jingling rhymes, which, when well constructed, give a fair outline of the events referred to. No part of such a lesson will be lost, if the pupil be led to think out the connection as well as to learn it. He will thus avoid fatal mistakes, and learn punctuation as well as history. Pardon me for making one extract in illustration from a very popular school book.

"In 450 the Jutes arrive,  
Horsa was slain in 455,  
And two years more established Kent;  
Before year 490 was spent  
Ella another kingdom tore  
From Britain; twenty-nine years more  
Saw Wessex on the southern shore."

Allow this to be a sing-song rote lesson, and the pupil, however will he may remember it, will not be sure as to the agreement of dates and events. Make it an intellectual exercise, and he will gladly read all he can about each portion of it, and recite it with just appreciation and emphasis, finding in this plan for retaining the dates an index to his future reading. In this connection an example occurs to me from the work of a few days ago. To the question on this lesson, "Who was Horsa?" a nervous young boy answered, "A Roman general." The following questions on the lesson of the previous week were then put to him: "When did the Romans first land?" "Why did they leave?" "Who was then Emperor?" "Why did he not keep his troops here?" "When were they recalled?" "How did the Britons suffer in consequence?" "How long?" "*Who was Horsa?*" The correct answer followed as a matter of course. Here nothing had been said either to discourage him, or even to tell him that he was mistaken. Many of his class-fellows had, of course, perceived this, and their interest was roused as well as his own by the process, which always forms a source of amusement, of what I cannot help thinking a profitable character.

While referring to this section, I fear that I shall incur considerable disapprobation when I acknowledge that I believe much advantage can be gained from the use of the "Spelling Book with Meanings," in conjunction with lessons in etymology. The *modus operandi* is this: On Thursday morning a dictation lesson is given, based on two pages of the Spelling-book, from which words are selected irregularly by the teacher, who spells out each root, naming the language and stating the meaning. These are written on the slates in three columns, a fourth being left blank. When about twenty primitives have thus taken down, the boys open their Spelling-books, and search on the indicated pages for the derivatives, guided by similarity of form and signification. The lesson is checked by questions in these two forms: "What words can you find derived from—?" "What is the derivation of—?" no answer being accepted without proof. This lesson seems to remove from the Tuesday's rote lesson much, if not all, of the repulsiveness generally ascribed



to that division of study. In hearing the latter lesson, the teacher employs four methods: the simple spelling with meanings, the same reversed, the etymology, and the filling up of elliptical sentences so constructed as to throw light where required on the origin of the word expected.

The second division of catechetical lessons consists of those in which the main objects of direct acquisition are things, not words; the words being for the most part accidents of nomenclature or terminology, though even here much verbal accuracy is often demanded. To this division belong the great majority of school studies capable of falling under the category of set lessons. At the risk of wearying you with matters of detail, I venture to remark upon a few little points in this very important department of the school work. One thing that cannot be too clearly understood is, that what is called "hearing" lessons is not teaching. The position of the teacher with a class around him is the most arduous of his trials if unprepared, the most pleasant if ready and at home in his work. It seems to be a *sine qua non* for successful teaching in this manner, that the lesson set to the boys be so far mastered by the teacher as regards verbal details, that he may dispense with the text-book, and look every boy in the face. The amount of power thus gained tends greatly to give him that confidence and swing which alone can place him on a level with the class. The teacher who has done this is himself an example to his boys, who will respect him and the lesson all the more, if he will work through it not so much *ex cathedra* as *con amore*, and if he will with evident pleasure accept all the contributions frequently offered from the more extensive or special reading of any of his younger fellow workers.

allowing places to be taken for two correct answers. At the close of the lesson, the re-distribution of tickets ensures the assembling of the class in proper order on the next occasion. To give every boy a full opportunity, the questioning is varied from asking in turn to the show of hands, the left hand being at all times the signal that the question or explanation has not been understood. Questions of an alternative character are avoided as much as possible, and no answer to such a question is accepted unless accompanied by the reason. A thorough sitting in a class of this description teaches the process by which every lesson of the kind should be learned; and by helping to give accuracy of conception, thought, and expression, obviates the danger of misunderstanding of terms, which too often makes the home work a pernicious weariness. It is always useful to bear in mind that "the best method of teaching depends on the best method of learning," and that the most valuable service the teacher can render to his pupil is to give him true intellectual independence. To this end, everything that can be brought in illustration from the pupil's own everyday experience will be an important aid, as showing him that he has much, if not

One word as to the preservation of order in classes of this description. Of course the great thing to be attended to is the keeping up of a lively interest, for which, as I need hardly observe, the keen observation as well as the energy and tact of the teacher will always be needed. But minor points must not be disregarded. I have often seen a class thrown into confusion by the simple fact that the teacher has acquired the unfortunate habit of taking up his position on the chord of the arc formed by the class, instead of standing some two feet farther back. If the boys at either end were careless, they took advantage of their position to distract the attention of the others; while, if anxious, they would press forward to meet the teacher's eye, and so become the innocent causes of crowding and disorder. In large classes, the simple plan answers very well of distributing numbered tickets,

collected before the commencement of each lesson, and all, of the required material of knowledge and practice at his own disposal. In fact, the only restriction upon illustrative teaching is found in the necessary caution that all illustration must be presented as evidently subsidiary to the lesson it conveys.

(To be continued.)

## OFFICIAL NOTICES.



### Ministry of Public Instruction.

#### MUNICIPALITIES ERECTED AND ANNEXED.

The Lieutenant Governor in Council has been pleased, under date of 17th April, to annex for school purposes that part of the 15th range of Wotton, in the County of Wolfe, extending from lot No. 13 to lot No. 31 both inclusive, to district No. 9 of Ham North in the said County;

And under date of 15th May;

To erect the new mission of St. Honoré, County of Temiscouata into a School Municipality with the following limits: To the North by Demers, to the North-West by Whitworth, to the South-West by the Township Parke and part of Pohenagamook, to the South-East partly by the Township Cabano, and partly by Estcourt, the said limits comprising all the township Armand;

To erect Township Cameron, County of Ottawa into a school municipality, independently of the Township Bouchette, from which it is separated by the River Gatineau;

To erect the mission of Moisie, in the county of Saguenay into a school municipality with the following limits, namely: to the East and South by the River St. Lawrence, to the North and West by straight lines starting from the River St. Lawrence at a distance of a mile and a half on each side of the River Moisie, and meeting at right angles;

To detach the first range of the township of Peterborough from the separate municipality of Peterborough, in the Counties of Berthier and Maskinongé, and to annex it to the school municipality of the Parish of St. Gabriel de Brandon, in the County of Berthier, as it is already for religious purposes.

#### SCHOOL TRUSTEES.

The Lieutenant Governor in Council, has been pleased under date of 22nd April last, to name

Mr. Edward Joyce, of Inverness, County of Megantic, School Trustee, *vice* Mr. James Henry.

#### SCHOOL COMMISSIONERS.

The Lieutenant Governor in Council has been pleased to make the following nominations of School Commissioners.

Under date of 22nd April last.

County of Yamaska, St. Pie Deguire: Messrs. Louis Proulx; Louis St. Germain, son of Joseph, Louis Desfossés, George St. Germain and Edouard Côté.

And under date of 15th May.

County of Champlain, St. Maurice: Mr. Isidore Biron, *vice* Mr. Léandre Désilets.

County of Ottawa, Township Cameron: Messrs. John Scullion, Owen Lynch, Timothy Lynch, William McLellan and François Patry.

County of Saguenay, Mission of Moisie: The Revd. M. A. Pierre Séguin, Messrs. Luc Simard, Luc Montreuil, Louis Servant and Hilarion Fortier.

County of Saguenay, township Saguenay: Messrs. François Dufour, André Laprise, Onésime Savard, Hubert Duchêne and Simon Gaudreault.

County of Témiscouata, St. François Xavier: Messrs. Charles Therriault, George Cimon, Jean Plourde, Robert Martin and Pierre Nadeau.

County of Jacques Cartier, Ste. Geneviève No 1: The Revd. Mr. Fabien Perrault, vice The Revd. Mr. Louis Marie Lefebvre.

#### DIPLOMAS GRANTED BY BOARDS OF EXAMINERS.

##### CATHOLIC BOARD, QUEBEC.

MODEL SCHOOL, 1st class, (F): Mr. Léopold Philémon Falard, au.  
ELEMENTARY SCHOOL, 1st class (E):—Miss Mary Quinn.  
ELEMENTARY SCHOOL, 2nd class (E):—Miss M. Philomène Hardy.  
ELEMENTARY SCHOOL, 2nd class (F):—The Misses. Exilda Barbeau, Elmire Chabot, M. Marcelline Godivet et Marguerite Pelchat.  
6th February, 1872.

N. LACASSE,  
Secretary.

##### SHERBROOKE BOARD.

MODEL SCHOOL, 1st class (E):—M. Arthur J. H. Wynne and Miss Orphia A. Leet.  
ELEMENTARY SCHOOL, 1st class (E) The Misses. Annie Higgins, Clarinda Harvey, Ida A. Truc, Margaret Leavitt, Harriet Young and M. Rémi Tremblay.  
ELEMENTARY SCHOOL, 2nd class (E) The Misses. Jennet A. Coats, Annie F. Curran, Catherine Main, Anna Bella McCashill and Emily Wilson.  
7th May, 1872.

S. A. HURD,  
Secretary.

##### PROTESTANT BOARD MONTREAL.

MODEL SCHOOL, 1st class (E):—Miss Jane Muir.  
MODEL SCHOOL, 2nd class (F):—The Misses. Marrilla R. Bissell, Elizabeth McDonell and Swift\*  
ELEMENTARY SCHOOL, 1st class (E):—Miss Helen Walker Clark  
Cizzie Clark, Esther Mayor, Annie L. Miller, Mary Tighe, M.M. Mathew Gilbert\* and James Ross.  
ELEMENTARY SCHOOL, 2nd class (E):—The Misses Ann Eliza Bullock, Eliza W. Fraser,\* Annie Hall and Jane Loynachan.  
17th May, 1872.  
N. B.—The asterisk after a name denotes that the candidate has not yet attained the required age of 18 years.

T. A. GIBSON,  
Secretary.

##### STANSTEAD BOARD.

ELEMENTARY SCHOOL, 1st class (E):—M. Noël Beebe, the Misses Ella J. Snow, Mary A. Marlow, Rose A. Dupont, Sophranie Sucraft, Mathilde Brudet, Carrie A. Hodges, Euretta Bullock, Mary Hovey and Georgina H. Macdonald.  
ELEMENTARY SCHOOL, 2nd class (E):—The Misses Clara Place, Mary Flanders, Susie Ayer, Mary J. Sampson, Ida E. Barry, Clara Taplin, Amelia Morrill, Anna M. Morrison, Alice Heath, Lizzie J. Lorimer and Minnie, E. Chamberlain.  
7th May, 1872.

C. A. RICHARDSON,  
Secretary.

##### PROTESTANT BOARD OF WATERLOO AND SWEETSBURGH.

ELEMENTARY SCHOOL, 1st class (E):—The Misses Sarah C. Allan, Edna Bullock, Sarah Corey, Lizzy Powers, Florence E. Skeele, Libbie, E. Stowe and Emma Wilkinson.  
ELEMENTARY SCHOOL, 2nd class (E):—The Misses. Lucy J. Clow, Agnes H. Hill, Phila C. Jewell, Mary J. McElroy, Helen Robinson, Addie, E. Royce, Altha A. Smith, Abbie C. Squire and Lillian C. Stickney.  
7th May, 1872.

WM. GIBSON,  
Secretary.

##### CHICOUTIMI BOARD.

ELEMENTARY SCHOOL, 1st class (F):—The Misses. Mary Béline Tremblay, Marie Louise Tremblay and Elizabeth Delvina Godin.  
7th May, 1872.

THS. Z. CLOUTIER,  
Secretary.

##### BEAUCE BOARD.

ELEMENTARY SCHOOL, 1st class, (F):—Miss. Marie Ferland.  
ELEMENTARY SCHOOL, 2nd class, (F):—The Misses L. Hamel, Marie Olive Vaillancour, Marie Angèle Béland, Olivine Tardif, Apolline Boucher, Marie Sarah Bisson, Vitaline St. Hilaire, Marie Divine Maheux, Constance Gagnée, Marie Georgiana Hébert, Marie Philomène Cartier et Elmire Grégoire.  
7th May 1872.

J. T. P. PROULX,  
Secretary.

##### CATHOLIC BOARD, RICHMOND.

ELEMENTARY SCHOOL, 1st class (F):—The Misses Emma Comptois Rose Anna Campbell, Céline Gould, Wilhelmine Renaud, M. S. G. Sévérine St. Laurent and Délina Trotter.  
ELEMENTARY SCHOOL, 1st class (E):—M. Wm. J. Byrne and Misses Margaret Ann Delany.  
ELEMENTARY SCHOOL, 2d class (F): The Misses Jane Auger, Joséphine Bérubé, Adélaïde Bérubé, Alphonsine Demers, Hermine Désilets, Marie Eloïse Gagné, Elodie Jutras and Marie Therrien.  
ELEMENTARY SCHOOL, 2d class (E):—The Misses Wilhelmine Renaud and M. S. G. Sévérine St. Laurent.  
7th May, 1872.

F. A. BRIEN,  
Secretary.

##### CATHOLIC BOARD, MONTREAL.

MODEL SCHOOL, 1st class (F):—The Misses Alphonsine Henri-chon, Virginie Jodoin and M. Ignace Picard.  
MODEL SCHOOL, 1st class (E):—M. James Anderson.  
MODEL SCHOOL, 2d class (F):—MM. Jean Bte. Bonin and Ferdinand Ramsay.  
ELEMENTARY SCHOOL, 1st class (F):—MM. Aristide Champagne and Pierre Etu, The Misses Mélanie Benjamin, Marie Elvina Brault, Georgianna Brouillet, Emélie Brunet, Marie Henriette Carmel, Cordélia Cardin, Joséphine Castonguay, Marie Célanire Charbonneau, Virginie D'Acout, Joséphine Derôme, Marie Décary, Euphémie Desrosiers, Elmire Desmarchais, Lia Desmarais, Zéphirine Duhamel, Anne Duhamel, Marie Ernestine Dumontel, Louise Gauthier, Ernestine Gravel, Marie Anne Guenette, Césarine Hervieux, Joséphine Huette, Virginie Jodoin, Angélique Jetté, Marie Calixte Lajoie, Céline Ladouceur, Sophie Valérie Langevin, Marie Félicité Lasalle, Marie Lavallée, Elmire Lavigreur, Marie Honorine Marchesseault, Hortense Maurault, Célanire Messier, Rosalie Ouimette, Marguerite Paré, Marie Emma Pepin, Marie Exerina Pleau, Marie Rose Proulx, Angèle Proulx, Zoé Proulx, Rosalie Honorine Prévost, Caroline Reid, Edwidge Rivard dite Dufresne, Cordélie Robert, Marie Rompré, Céline Sauvé, Virginie Sentenne, Christiana Sheridan, Malvina Thérien, Emma Thibodeau, Lucie Vallée and Marie Elise Villiard.  
ELEMENTARY SCHOOL, 1st class (E):—The Misses Anna Fitzgerald and Hannah Hayes.

ELEMENTARY SCHOOL, 2d class (F):—Messrs. Ignace Riendeau and Israel Dufresne, The Misses Victoire Archambault, Marie Louise Bourgoin, Valérie Chamberlan, Malvina Chevandier dite Lépine, Joséphine Côté, Laure David, Marguerite Demers, Marie Anastasie Dufresne, Georgina Isabelle, Hermine Lafontaine, Olive Monet, Marie Cléphire Nantelle, Marie Eulalie Petit, Eulalie Théoret, Azilda Thibodeau and Exilda Aminta Viger.  
7th, 8th and 10th May, 1872.

F. X. VALADE,  
Secretary.

##### BONAVENTURE BOARD.

ELEMENTARY SCHOOL, 1st class (F and E):—Miss Alice Kimlin.  
ELEMENTARY SCHOOL, 1st class (E):—Miss Marie Louise Arse-neault.

L. P. LEBEL,  
Secretary.



### PROTESTANT BOARD OF EXAMINERS, MONTREAL.

The Lieutenant Governor has been pleased to name, under the date of 15th May instant, the Revd. Charles Chapman, M. A., a member of the Montreal Protestant Board of Examiners for the granting of Teachers' certificates, *vice* the Revd. John Jenkins, D.D.

## McGill University Intelligence.

### ANNUAL CONVOCATION—DISTRIBUTION OF HONOURS TO THE STUDENTS—INTERESTING ADDRESSES.

A meeting of the members of the Convocation was held yesterday, May 1st, at the McGill University for the reading of the minutes and the election of Fellows. The following was the result of the election: Mr. E. Holton, B.C.L., and Mr. J. J. MacLaren, M.A. B.C.L., law Fellows; Dr. Schmidt and Dr. Reddy, Fellows in medicine. Mr. C. P. Davidson, M.A. B.C.L., and Mr. R. A. Ramsay, M.A. B.C.L., Fellows in Arts.

The annual public meeting of the Convocation of the University for the conferring of degrees in arts was held yesterday in the William Molson Hall. The Hon. James Ferrier presided, and there was a numerous and influential attendance of ladies and gentlemen, amongst those present being Messrs. Andrew Robertson, M.A., Q.C., George Moffatt, John Molson, of the board of Governors, the Bishop of Montreal, and Professor Goldwin Smith, the Vice Chancellors Dawson, the Ven. Archdeacon Leach, the Dean of the Faculty of Medicine; Dr. Campbell, Professor Wilkes, Professor McVicar, Mr. R. A. Ramsay, Dr. Reddy, Mr. Schmidt, Professor Scott, Rev. Dr. Jenkins, Mr. Davidson, Fellows of the University, and Mr. W. C. Baynes, the Secretary; Professors Howard, Badgely, Smallwood, Moarkgraf McCallum, Fenwick and Trenholme; Archdeacon Bond, Doctor Baynes, Dr. Bell, Dr. Major. Messrs. Hart, Edward A. Baynes, C. Cushing, W. D. Drummond, R. C. Fisher, F. R. Gilman, Edward Holton, J. J. McLaren, A. A. Brown, J. Cameron, T. Kelley, D. McGregor, J. S. Tupper.

The proceedings were opened by prayers offered up by the Ven. the Archdeacon Leach.

The following list of awards was then read over by the Dean of the Faculty of Arts, who presented those gentlemen who had passed the necessary examinations and performed all the conditions required, to the Vice-Chancellor to receive the degree of Bachelor of Arts.

The following is the list of the winners of honors:—

### FACULTY OF ARTS.

#### PASSED FOR THE DEGREE OF B. A.

##### *In Honours.*

*First Rank*—Ells, R, Cornwallis, N. S.; Hodge, D W B, Eaton, Q; Maxwell, J, Lancaster, O; Naylor, W H, Noyan Q; Wallace, R, Ont.  
*Second Rank*—Crothers, W J, Philipsburg, Q.

##### *Ordinary.*

*Class II*—Allworth, J, Paris, Ont; Christie, J. H. Lachute, Q.  
*Class III*—Torrance, J Fraser, Montreal, Q; Munro, M, Glengarry, Ont; Whillans, R, Ottawa, Ont; McLeod, F.

#### PASSED THE INTERMEDIATE EXAMINATIONS.

*Class I*—Dawson, B, Montreal.  
*Class II*—Allan, J, Leeds, Q, Harvey, C, St. John's, N F; Ward, G, Boundary Line, Q; McKibbin, W M, Montreal, Q; Taylor, A D, Montreal, Q; Hall, J H L, Lachine, Q; Harvey, A, St. John's, N. F.  
*Class III*—Greenshields, S, Montreal, Q; Thomas, H W, Montreal, Q; Dewey, F McN, St Remi, Q; Taylor, E M, Potton, Q; Wellwood, J Gananoque, Q; McLennan, J S, Montreal, Q; Black, J R, Rochester, N Y.  
Weeks, Charlottetown, P E I, Aegr.

#### BACHELORS OF ARTS PROCEEDING TO THE DEGREE OF M. A.

W Clarke, B A, M D: F A Kahler, B A; G T Kennedy, B A.

#### HONOURS AND PRIZES.

##### *Graduating Class.*

*B. A. Honours in Natural Science.*—Ells, R, first honours and Logan gold medal; Maxwell, J, first honours.

*B. A. Honours in English Language, Literature and History.*—Hodge, D W B, first honours and Shakespeare gold medal.

*B. A. Honours in Mental and Moral Philosophy.*—Naylor, W H, first honours; Crothers, W J, second honours.

#### PASSED FOR THE DEGREE OF B. A.

*In Honours.*—Crothers, (W J); Ells, (B); Hodge, (D W); Maxwell, (J), Naylor (W H); Wallace, (R.)  
*Ordinary.*—Allworth, (J); Christies, (J H); Torrance, (T F); Munro, (M); Whillans, (R).

#### THIRD YEAR.

McLeod, (D C).—First honours in Mathematical Physics and Prize; first rank general standing; Murray, (C H), first honours in Classics and College Prize; first rank general standing; prize in Zoology; McDonnell, (R L), first honours in classics, and Professor's prize; McFee, (K N), second honours in Classics; first rank general standing; prize in German, certificate in Zoology; Allan, (J G), prize in Moral Philosophy: certificate in Zoology; Allan, (J G), prize in Moral Philosophy: certificate in Zoology; Reddy, (H L); Prize for collection of plants; (surplus of Logan metal fund.)

#### PASSED THE SESSIONAL EXAMINATIONS.

McFee, McLeod, (D C); Murray, Tunstall,—Allan, McDonnell, Griffith, Reddy.

#### *Second Year.*

Dawson, (W B.), (High School, Montreal), First honours, Mathematics, and prize; first general standing. Harvey, (C), (Dalhousie College), prize, English literature; Ward, (G R), (Lennoxville), prize in French; Allan, (J), (St. Francis College), prize, Botany.

#### PASSED THE SESSIONAL EXAMINATION.

Dawson, Allan, Harvey (C), Ware, McKibbin, Taylor (A), Hall, Harney, (A), Greenshields, Thomas, Dewey, Taylor (E), Wellwood, McLennan, Black, Weeks, Egrotal.

#### *First Year.*

Chandler, G H (Shefford Academy), first honours in Mathematics and prize; prize in Classics, History, English, Essay French, Chemistry, Hebrew, General Standing; Crothers, R. A. (Clarenceville Academy), second honours Mathematics; Rexford, E, (McGill Normal School), first General Standing.

#### PASSED THE SESSIONAL EXAMINATION.

Chandler, Rexford, Crothers, Campbell, Denovan, Eccles, Mooney, Hawley, Ritchie.

#### DEPARTMENT OF PRACTICAL AND APPLIED SCIENCE.

*MIDDLE YEARS*—Stewart, D A—First honours Mathematics and prize, Prize, Zoology, German.

Wilkins, D F H, B A—First prize honours, Natural Science, prize, Assaying.

McLeod C H—Prize, Civil Engineering.

#### PASSED THE SESSIONAL EXAMINATION.

*Civil Engineering*—Stewart, McLeod and Wicksteed, equal; Wilkins, Torrance, Brodie.

*Mining Engineering and Assaying*—Wilkins, Torrance.

*JUNIOR YEAR*—McLean, A—Prize Surveying and Drawing.

#### PASSED THE SESSIONAL EXAMINATION.

McLean, Rodger, Boswell.

#### FACULTY OF ARTS.

#### SESSIONAL EXAMINATION, 1872.

##### GREEK.

*B A ORDINARY*—Class I—None. Class II—None. Class III—Allworth and Munro and Willans, equal.

*THIRD YEAR*—Class I—Murray, Macdonnell, McFee;—Ritchie (A F) and Tunstall, equal. Class II—Griffith; Allan (J G) and McLeod (D C), equal; Reddy. Class III—Fleet.

*SECOND YEAR*—Class I—Weeks; Harvey (C) and Taylor (A D) and Ward, equal; McKibbin; Dawson and Hall, equal. Class II—Allan (Jno); Dewey and Thomas and Wellwood, equal; Harvey (A), Greenshields. Class III—Black, Taylor (E M), McLennan, Craig.

*FIRST YEAR*—Class I—Chandler (Prize); Crothers (R A). Class II—Mooney, Ritchie (Fred). Campbell and Rexford, equal; Donovan, Eccles. Class III—Hawley, Malcolm.

##### LATIN.

*B A ORDINARY*—Class I—None. Class II—Christie; Allworth and Whillans, equal; Munro. Class III—None.

*THIRD YEAR*—Class I—Murray, Macdonnell, McFee, McLeod (D C). Ritchie (A F) Allan (J G) and Tunstall, equal; Griffith. Class II—Reddy, Fleet. Class III—None.

*SECOND YEAR*—Class I—Weeks and Ward, equal; Dawson, Taylor (A D), McKibbin, Harvey (Chas). Class II—Greenshields, Hall, Harvey (Alf), Allan (Jno), Thomas. Class III—Dewey, Craig; McLennan & Taylor (E M), equal; Black, Wellwood.

FIRST YEAR—Class I—Chandler (Prize); Crothers, (R A), Ritchie (Fred), Class II—Mooney and Rexford, equal; Campbell: Eccles and Hawley, equal; Donovan. Class III—Malcolm, Crowell.

HISTORY.

B A ORDINARY—(History and Modern Languages). Class I—Hodge, Munro. Class II—None. Class III—None.

FIRST YEAR—Class I—Chandler (Prize); Class II—Rexford and Ritchie (Fred), equal, Crothers (R A) and Donovan and Eccles, equal. Class III—Campbell and Crowley and Mooney, equal.

LOGIC, MENTAL AND MORAL PHILOSOPHY.

B A ORDINARY—(Psychology). Class I—Wallace, Naylor. Class II—Hedge, Munro, Crothers. Class III—Whillans, Allworth.

THIRD YEAR—(Moral Philosophy). Class I—Allan, (J G), Griffith, McFee, McLeod (D C). Class II—Murray, Ritchie, Macdonnell, Reddy and Tunstall, equal. Class III—Fleet.

SECOND YEAR—(Logic). Class I—Allan, J (Prize) - Dewey, Wellwood, Ward, McKibbin, Black. Class II—Harvey (C J), Harvey (A) Dawson, Nighswander and McLennan, equal; Taylor (E M) Taylor (A D) and Hall, equal. Class III—Greenshields, Craig, Thomas.

ENGLISH LITERATURE.

B A ORDINARY—Class I—Hodge, Munro Class II—None. Class III—None.

SECOND YEAR—Class I—Harvey (C) (prize); McKibbin, Class II—Taylor (E) Dawson, Thompson; Harvey (A) and Allan, equal; Hall, Craig. Class III—McLennan, Ward, Taylor (A D) Dewey, Black, Greenshields, Wellwood.

FIRST YEAR—Class I—Chandler, prize and prize essay; Rexford, Campbell. Class II—Crothers and Donovan, equal. Class III—Mooney, Ritchie, Hawley, Burgess.

FRENCH.

THIRD YEAR—Class I—Ritchie, Allan, and McFee, equal. Class II—None. Class III—None.

SECOND YEAR—Class I—Ward (prize); Dewey, Dawson, and Harvey C, equal. Class II—Taylor (E), Taylor (A). Class III—Harvey (A), Hall, McLennan, Craig Greenshields, Thomas.

FIRST YEAR—Class I—Chandler (prize); Rexford. Class II—Ritchie, Crothers, Hawley. Class III—Denovan, Robertson, Ecoles.

GERMAN,

THIRD YEAR.—Class I.—McFee (prize), Murray. Class II.—None. Class III.—Ritchie.

HEBREW.

SECOND YEAR.—Class I—Allan. Class II. McKibbin. Class III.—Wellwood.

FIRST YEAR.—Class I.—Chandler (prize); Campbell. Class II. Malcolm. Class III.—Crowell, Burgess.

MATHEMATICAL PHYSICS.

B A Ordinary—Class I—None. Class II—Allworth, Wallace, Christie, Crothers (W J). Class III—McLeod (F), Torrance (J F), Whillans, Munro.

THIRD YEAR—Class I—McLeod (D C), Tunstall, McFee, Murray. Class II—Allan (J G), Boddy. Class III—MacDonnell, Griffith.

MATHEMATICS.

SECOND YEAR—Class I—Dawson. Class II—Allan (J), Taylor (A D) Greenshields, Dewey, Harvey (C). Class III—Hall, Ward, McKibbin, Wellwood, Harvey (A), Taylor (E M), McLennan, Black, Thomas.

FIRST YEAR—Class I—Chandler, Rexford. Class II—Hawley, Mooney, Crothers (R A). Class III—Campbell, Robertson, Eccles, Ritchie, Malcolm, Denovan.

EXPERIMENTAL PHYSICS.

B A ORDINARY—Class I—Elli, Naylor. Class II—Torrance (J F), Maxwell. Class III—Christie.

THIRD YEAR—Class I—McLeod (D C), McFee. Class II—Murray, Allan, Reddy, Ritchie (A F). Class III—Fleet.

Honour Examinations.

THIRD YEAR—(Mathematical Physics)—First Rank—McLeod D C (Prize.)

SECOND YEAR—(Mathematics)—First Rank—Dawson, (Prize) and Stewart (Prize), equal.

FIRST YEAR—(Mathematics)—First Rank—Chandler, (Prize)—Second Rank—Crothers.

NATURAL SCIENCE.

B. A. ORDINARY—(Geology)—Class I—Elli, Maxwell, Christie, Allworth, Torrance. Class II—None. Class III—Whillans, McLeod (F).

THIRD YEAR—(Zoology)—Class I—Murray (prize); Allan (Jas G), and McFee, equal (Certificate); Tunstall, McDonnell. Class II—McLeod (D C), Reddy, Ritchie. Class III—Fleet, Griffith.

SECOND YEAR.—(Botany)—Class I—Allan (Jno) (prize); Dawson, Dewey, Taylor, (E), Nighswander, Harvey, (A). Class II—Harvey, (C), Craig, McKibbin, Taylor (A), Wellwood. Class III—(Alphabetically arranged), Black, Greenshields, Hall, McLennan, Thomas, Ward

FIRST YEAR—(Chemistry)—Class I—Chandler (prize); Rexford, Class II—Campbell, Robertson, Mooney, Hawley, Denovan. Class III—Crothers, Eccles.

DEPARTMENT OF PRACTICAL AND APPLIED SCIENCE.

Sessional Examinations.

SURVEYING, ENGINEERING AND DRAWING.

MIDDLE YEAR—Class I—McLeod (prize): Stewart, Wickstead. Class II—Wilkins and Brodie, equal; Torrance, Kennedy, Steven son. Class III—None.

JUNIOR YEAR—Class I—McLean (prize); Batchellier. Class II—Rodger, Boswell. Class III—Yule, Frothingham.

ASSAYING AND USE OF THE BLOWPIPE.

MIDDLE YEAR—Class I—Wilkins (prize); Class II—Torrance. Class III—None.

MATHEMATICAL PHYSICS.

MIDDLE YEAR—Class I—Stewart. Class II—McLeod (C H), Wil kins, Class III—Wickstead, Torrance, (J F) Brodie.

MATHEMATICS.

MIDDLE YEAR—Class I—Stewart, McLeod (C H), Wilkins—Class II—None. Class III—Brodie.

JUNIOR YEAR—Class I—Rodger. Class II—Boswell, MacLean. Class III—Batchellier.

EXPERIMENTAL PHYSICS.

MIDDLE YEAR—Class I—Stewart, Wilkins, Wickstead. Class II —McLeod, (C H) Class III—Brodie, Kennedy.

GEOLOGY.

MIDDLE YEAR—Class I—Wilkins, Torrance. Classes II and III —None.

ZOOLOGY.

MIDDLE YEAR—Class I—Stewart (prize); Wilkins. Class II—Stevenson, Wickstead. Class III—Brodie, McLeod.

CHEMISTRY.

JUNIOR YEAR—Class I—None. Class II—Boswell. Classes III—Batchellier, Frothingham, McLean, Yule, Rodger.

ENGLISH.

JUNIOR YEAR—Class I—None. Class II—McLean, Frothingham. Class III—Boswell, Yule, Rodger.

FRENCH.

MIDDLE YEAR—Class I—None. Class II—Torrance, Stevenson. Class III—McLeod, Wilkins.

JUNIOR YEAR—Class I—None. Class II—Rodgers, Boswell, Class III—Yule, McLean, Batchellier, Frothingham.

GERMAN.

MIDDLE YEAR—Class I—Stewart (prize.) Class II—Torrance. Class III—Stevenson, Brodie.

FIRST YEAR—Class III—Frothingham.

The prizes and certificates having been handed to the Honour Men, the obligation was administered to the graduates who were severally capped and presented with their diplomas.

Mr. D. W. R. HODGE delivered the usual valedictory address, in which he enlarged upon the pleasure and profit to be derived from the study of arts, and urged the students to exertion because the credit of the University depended upon the men whom she sent forth to the world.

It was then announced that Messrs. Willis Clarke, Frederick Taylor, and George T. Kennedy had passed for the degree of M. A. and the Vice-Chancellor admitted the third to the honour, the other two being excused from personal attendance by reason of the great distance from the University at which they reside.

Professor JOHNSON then delivered an address to the newly admitted bachelors of arts, and after expressing the heartiest wishes for their welfare, he went on to say that the degrees which had been conferred naturally suggested to him the topics of the new degrees which had been created that session, those of Bachelor and Master of applied science, of the latter of which master of engineering was only a special form, and therefore he would take advantage of the opportunity to discuss the relation of the new and old degrees, and of the course of instruction of which they were the goal to the other courses in the University. He could not but express the pleasure which was felt by the people of Montreal and Canada, that the establishment of a

school of practical science had at length rolled away the reproach, which long rested upon the country, of slothfulness in training the minds of its people to the development of the great gifts with which nature had so beautifully endowed it. We, in Montreal had special reason to be gratified at that fact, inasmuch as this city was the first to lead the march of education in that direction, waiting for no Government aid and relying on no Government promises, a few of its private citizens took upon themselves the burden of the expenditure necessary for so grand a scheme. Not only had the school been established, but it had been established in the most effective way by being connected with the University, which give it the prestige which the other professional schools enjoyed, as the entrances to the learned professions. The title of bachelor of applied science was altogether new, being made so by the introduction of the word "applied," but it was the only one that was suitable for their purpose. The school contained three branches of applied science, civil engineering, mining engineering and assaying combined with practical chemistry, but they were ambitious and desired to leave themselves free to cover a still larger field in the future; and to create a new degree for it new branch as it might be added would have introduced a bewildering and piebald maze of titles. These difficulties had been well met by the insertion of the word applied in the older degree of bachelor of science. Though the new school was called at present a department of the Faculty of Arts, the creation of the new degree virtually marked the beginning of a new faculty which in course of time would rank with the other faculties of the University, and the new faculty would have assigned to it the subject of man's contest with the external material world in exercising his dominion over all the earth and subduing it. It was obvious that the new faculty should have the same relation to that of arts as the other faculties had, and that students in it should have previously completed their arts course, or at least so much of it that the remainder could be followed simultaneously with professional studies, by which means they would receive what was emphatically called a University education. At present, however, in the circumstances of this country it could not be hoped that they could induce many students to delay even for two years their entrance into the practical labors of life, and therefore they had made the second best arrangement, by which it was indispensable that every student in practical science should obtain some training in literature, and they offered certain exemptions to those who went through the regular course in arts. Unfortunately there was a widely spread notion that the study of language was not what was called a practical study, and study of language for its own sake, compelling them to attend to the exact meaning and force of words, and make them the masters of words and not their slaves was supposed to be of little practical account. But there was a practical illustration of the importance of attention to the use of words that would come home to them all. It was only four or five days ago that the British Ambassador at Washington said in a public meeting that the wording of the treaty now so much discussed entirely excluded certain claims put in by our neighbours. Their representatives asserted the contrary. The immensity of the interests involved in the dispute surely made that matter sufficiently practical. To take another instance, what irritation had been kept alive, what perpetual hazards of war between kindred nations had been encountered for many years, owing to disagreements as to the meaning of the word "bay" in the Fisheries Treaty? That importance ran through all the relations of life, and he had no doubt that the greater part of the litigation that took place was due to what Locke called the "ill use of words." By words man communicated his thoughts to man; by words God had sent us his revelation. It was said that the study of Latin and Greek was of little value, but he was profoundly convinced of the absolute necessity and even paramount importance of the study of the classics as part of the higher education, and in that opinion he was supported by Dr. Airey, the Astronomer Royal, Mr. Max Muller, Professor Tyndall, Professor Pillan, of Edinburgh, and the Prime Minister of England. But whilst he did not call an exclusive study of the classics and literature generally, an education, he considered that the exclusive study of physical science was positively dangerous to the harmonious development of the mental faculties, especially at the present day, because it gave a tendency to believe in nothing unless it could be practically demonstrated, the result of which would be that they would have a very circumscribed knowledge and be launched headlong into materialism. Professor Johnson concluded by briefly combatting the Darwinian theory.

The Vice-Chancellor announced that the Corporation had conferred the degree of L.L.D., upon the Rev. Professor Cornish.

The Rev. Chas. Chapman, M. A., of London University, and the Rev. R. McAlpine Thompson, of Toronto, were admitted to *ad eundem* degrees in the University.

Professor Goldwin Smith was loudly cheered on rising to address the assembly. He said that he had once before the honor of being present at the convocation of that University; he was then entirely a stranger, but he was not so now, for the Corporation had been kind enough to invite him to give a course of history lectures in the autumn, an invitation that he had gladly accepted. So that he trusted in a short time to be connected with the staff of the University (applause). A special interest attached to the operations of that University from its connection with the great and wealthy city of Montreal, which though it could not be said of her as it was of Venice "that she held the gorgeous East in fee," yet had a commerce which rivalled the Venetian. From the report that had been placed in his hand he regretted to see that the liberality of the city hardly kept pace with the usefulness of that institution; the subscriptions for the general endowment had not advanced beyond the point indicated in last year's report. That might possibly make that University envy the position of others which were connected with the State, and which received large annual allowance, but he believed that on the whole the position of that University was better than that of the others. In course of time private munificence would be awakened, and it must be recollected that private munificence could hardly find a place in institutions supported by the State because in that case it did not more, in fact, than displace a certain amount of State appropriations. The great colleges of the old country to which they looked back with something of envy as well as love, had grown up by private beneficence. His own college was University College. He was afraid that their connection with King Alfred was legendary, but they might reckon certainly as their founder an ecclesiastic of the thirteenth century, who, connecting his name with an undying corporation, had share its immortality, and whose name would, in all probability, be gratefully remembered to the end of time. (Applause.) To his first foundation numerous other benefactors had made additions, and that college had grown up to its present wealth and honor. There could be no reason for despairing of a similar course of things in Montreal. Here was wealth, which in a new country and in early times was perhaps not often dedicated in any large measure to intellectual objects, but which, in course of time, would be. He did not think, therefore, that there was any reason to talk with despondency of the future of that University, for already a great many benefactions had been made. He had seen a contribution of a very valuable addition to the library, made by Mr. Peter Redpath, of works of history of a very valuable kind. (Applause.) Professor Johnson had adverted to the fact that the subjects of a liberal education were still in a course of transition: the faculty of arts, the faculty of a liberal education, was still agitated by some doubts and perplexities relative to the value of the subjects of instruction; physical science had only lately claimed its share in education, and it had already had its claim adjusted in connection with the old university subjects. No one, he thought, would doubt that the system adopted by the corporation of that university was sufficiently liberal and comprehensive, and that all valuable subjects of instruction were really recognized. There was one gentleman that day had received prizes, and had studied a circle of subjects, almost commensurate with the circle of human knowledge. (Applause.) That reminded him of the Spanish *hidalgo* who arrived alone at an inn and asked for a bed, giving such a bead roll of titles, that he was told there was not room for half so many people in the inn. (Laughter.) It seemed to him also that there was sufficient liberality of choice of subjects given to the students, but it was possible to have to much liberality of choice, and the student might be perplexed and his time wasted if the university afforded him no guidance in the earlier period of his career. They had, practically, adopted the same course which had been adopted by the Universities of Oxford and Cambridge, that of guiding the student at the earlier period of his course, and leaving him to take his choice during the later period. He rejoiced to see amongst the subjects mentioned in the report, as being in a hopeful condition, that of the higher education of women. It was to the part in that movement, for which he felt the most hearty sympathy, that he came this time to Montreal. Perhaps he was rather disposed to take a timid view of the general question which was so widely agitated at present; but he believed that woman was not "undeveloped man," but diverse, and if she were converted into undeveloped man, or even into developed man, "female man," as one of the apostles of the movement had said, it would be a great loss.

instead of a great gain to society. (Applause). Nor had he any great faith in any sudden, instantaneous change in human nature, either male or female. One great ground of complaint by some was that women were so frivolous as to adorn their persons. Now looking over the evidence of history, monumental and documental, from the time of the early Egyptians to our own, they had proof that for at least 5000 years woman had gone on adorning her person, and he was afraid she would not be cured in a day. (Applause). But all sensible people were agreed that some improvements were now required in the education of women, and that all studies which could elevate them should be free and open to them, and he was very glad that the Montreal University was taking an active part in that work. There was one point that he confessed he was glad to see that the authorities of the University were conservative in, and that was that they pronounced Latin and Greek in the old way. Now some universities had with a great flourish, notably that of Harvard, adopted what they called the real Latin and Greek pronunciation. If they got the real pronunciation no doubt it would be a good thing, but what chance was there of their doing so? No doubt they could make certain discoveries as to the pronunciation of certain letters—such discoveries had been made, but let them consider this fact, from the time of Chaucer up to the present time in England there had been no great addition to the population from external sources, during the whole time there had been an unbroken current of literature, but he should like to know who would now undertake to pronounce English as it was pronounced in the times of Chaucer? In Italy and Greece there had been immense irruptions of the barbarian nations, a perfect deluge, who could not pronounce the delicate inflexions of the tongues, and what reason could there be for believing that they ever preserved the true pronunciation? Unless they could recover the real Latin and Greek pronunciation where was the use of twisting their mouths in pronouncing the language as now proposed [hear, hear]. Supposing a Harvard student were to meet Cicero, as no doubt many would, in the Elysian fields, and were to address him in Latin, did not they think that Cicero would say, "You speak Latin perfectly, but with a strong New England brogue?" [Laughter and applause]. He might add that the mode of pronouncing a language was not fixed; it was in constant flux like everything else that was human, and they had no reason to believe but on the contrary every reason for doubting that the pronunciation in the time of Statius was the same as in the time of Cicero. If they could recover the proper pronunciation it would be well, but Latin and Greek were such perfect languages, so transcendently superior in all the qualities of language to the modern tongues, that though they were literally dead, yet he suspected they were not buried, and might again be of very great practical utility. It was not chimerical to say that of Latin its excellence in all writings on government and law was so marked that it was not absurd to say that it might again have a practical use. French was, or aspired to be, the universal tongue, but it carried the ideas of the French nation, which it was neither diplomatically nor morally desirable should be promulgated at present. He was glad that the Corporation had included the study of history in their course, because it might have a beneficial effect upon their politics, as it would give more elevation and breadth of view, and tend to make broad national considerations, considerations of humanity, paramount over those of mere faction. We in Canada had adopted the British constitution, but we had adopted it somewhat in the same way as the Chinese shipbuilder did: he had an English merchant ship as a model, and he reproduced it dry rot and all. (Laughter). We had adopted party government. That kind of Government was a very natural thing where there had been all along strong dividing interests, but here there were no really broad distinguishing lines, and the consequence might be that we should sink more into a government of faction, with more and more danger of submitting at no very distant time to the domination of scoundrels. (Laughter and applause.) That was to be averted mainly by the instruction of Canadian youth, to whom a great part of the formation of the institutions of this country and the development of the national character was assigned, and something might be done by elevating and liberalising the studies of the Universities. History was the study that had most to do with politics, and if studied in a proper spirit, it was that which was most calculated to form liberal minded, honest minded, and honest politicians. They had an instance of that on the other side of the line. When he first came to the United States, he was told by the Americans that the Anti-British

feeling was neither deep nor likely to be lasting, but he was sorry to say that his residence there led him to the opposite conclusion. In the Western States the feeling was comparatively weak, but in the Eastern States he was afraid that it was still strong. There was the memory of the old quarrel; we had forgotten it, and had even removed Washington, the patriot of his time, into the English Pantheon, but the American did not lose sight of it, and seemed to have lost one virtue of the English character, the power to forgive and forget. Then there was the Fenian element which increased the feeling and still more the temptation on the part of politicians to display it; but he was convinced that one considerable cause of that ill feeling was to be found in the ordinary school histories. They consisted almost entirely of exaggerated, malignant representations of the two quarrels between America and England, and beyond that the American child hardly knew any history at all. He grew up with a mind imbued with these views, and when he took part in politics he carried into effect the feelings which, in his childhood, he had imbibed. They, at Montreal, would try to study history in a different spirit, they would not forget that they were a nation and connected with a nation on the other side of the Atlantic: they would not forget that they had national duties, and that above all nations there was humanity and above humanity, there was God (loud applause.)

Principal DAWSON said: I had hoped that the Chancellor could have honored us with his presence to-day, and would have undertaken that review of the progress of the University during the past year, which now falls to me, in so far as it has not been entered into by the previous speakers. In one important respect our work may be measured by our number of students and graduates. In the past session the number of students in arts has exceeded that in previous sessions, having reached very nearly to one hundred, and the total number in our three faculties has amounted to two hundred and seventy-five, without reckoning students in affiliated colleges. In the meetings of Convocation in March and to-day, we have given fifty-one degrees in course,—namely, thirty-five in Law and Medicine, and sixteen in Arts. Another measure of our work may be taken from our provision of the means and appliances of instruction. I need not here refer to the enlargement of our Faculty of Law, or to the magnificent provision for the work of the Medical Faculty being made in the new building for its accommodation. These points have already been referred to in our previous meeting. In the Faculty of Arts our progress has not been less conspicuous. In the past session we have organized and brought into successful operation the first regular school of Practical and Applied Science in Canada. In connection with this we have to speak of Endowments to the amount of \$8,000, annual contributions to the amount of \$1,450, and aid granted by the Legislature of Quebec to the amount of \$1,000, the appointment of two additional instructing officers, and the attendance of 19 students in the classes of Civil Engineering and of Mining Engineering and Assaying. Above all we can speak for the first time of one of our greatest educational wants supplied, and of facilities offered to our young men to arm themselves with all the appliances of modern Science for the development of the resources of our country. (Applause.) The University has been fortunate in securing the services of men so gifted as Prof. Armstrong and Dr. Harrington. It has been encouraged by the influx of students to the new department; and this new effort has called forth the cordial and substantial support of the wealthy and liberal citizens of Montreal, as well as of the Government of the Province of Quebec. I have been surprised at the readiness with which aid is given to the enterprise: and as an illustration have only yesterday received a letter from one of our graduates containing a spontaneous offering on his part toward the provision of apparatus for the school. [Applause.] These things augur well for the cause of applied Science among us, so long neglected, but now evidently attracting some share of the attention which it deserves. I trust that in the next session we shall see still larger numbers of our talented and ambitious young men flocking to our department of science to be trained for usefulness as surveyors, engineers, explorers and managers of mines, assayers and practical chemists. Connected equally with this new school and with the regular course in Arts, is an endowment received this year of which any university might be proud, that of the "Logan Chair of Geology." The veteran Geologist who has for so many years been labouring with untiring energy and consummate skill in laying the foundations of the structure and mineral resources of this country on a foundation as firm as our

old Laurentian rocks themselves, adds this most appropriate and fruitful of all benefactions, the foundation of a chair by means of which young Canadians may in all coming time be trained to follow his example and to carry forward with success what he has so well begun. The gift is timely and valuable, but it is doubly valuable from its association with the name and fame of the giver. (Applause.) Another benefaction of the past year deserves more than a passing mention. It is the endowment by the Caledonian Society of Montreal of the Scott Exhibition in commemoration of the centenary of Scotland's great Novelist and Poet. It is a cheering indication of the higher taste and tendencies of our time and country that an expression of feeling which in other circumstances might have evaporated in the effervescence of after dinner speeches, thus becomes crystallized into a permanent endowment equally creditable to the donors and useful to the young men who may compete for its benefits. The Shakespeare Medal and the Scott Exhibition furnish beautiful instances of the interest of a prosperous mercantile community in the cause of higher education (applause). In the past session this University has for the first time practically interested itself in the work of the higher education of women, except in so far as it has already cultivated this field in connection with that most useful institution, the McGill Normal School. In the past session several of its professors have laboured in this cause, in connection with the Ladies' Educational Association. The pupils of the late Miss Lyman have also placed under our administration the fund in aid of the education of women which they have contributed as an expression of gratitude and regard to the memory of their lamented and gifted teacher. I have reason to believe that other endowments and benefactions in aid of this work will shortly be announced, and that the time for the organization of a regular college for women may not be so distant as some suppose. One gentleman of this city has already devoted a handsome property to this object, and another has authorized me to say that he is prepared to begin a subscription with \$5,000, if others will co operate so as to secure a sufficient sum to render the plans of the first mentioned gentleman immediately operative. This is a challenge which should at once be taken up, and I hope to hear something more of it at the meeting of the Ladies' Educational Association on the 14th [applause]. Enterprises like ours are not without their losses. The war against ignorance has its victims as well as other less justifiable wars. We mourn to-day the loss of one of our elective Fellows of last year, one ever active in the cause of the University. We have also to lament the loss of one whose connection with the University though short was full of promise. Prof. Forbes, this time last year barely able to finish his college work, was obliged to return to his native land in search of health, in God's mysterious Providence not to be restored. The loss of such a man should teach our students to improve the advantages which they have. They do not know how soon those who by long culture have been fitted to instruct them, may be removed. The filling of the vacancy caused by the death of Prof. Forbes has been a matter of anxious care to the Board of Governors, and they have sought to make an appointment fitted to shed lustre on the University and to promote the interests of the students in this important subject. In the appointment of Prof. Murray, I believe they have fully secured both ends, and that our students may look forward with hope to the work of the class next session. In the meantime our thanks are due to the Venerable Dean of the Faculty and to Dr. Wilkes and Dr. MacVicar for their kindness in devoting a portion of their time to this work in the past session, and for the earnest and efficient manner in which this duty was discharged. The University sustains a loss of a different kind in the departure of Dr. Sterry Hunt from amongst us, to occupy an important educational place in the United States. But he leaves us in the zenith of his fame and power, and we have the consolation of knowing that, if lost more immediately to us, his labours will not be lost to the sciences he has done so much to advance, and that his scientific name must ever remain permanently connected with the Survey of Canada and with this University. [Applause.] Finally, death has been unusually busy in our fair city in the past winter; but his hand has fallen comparatively lightly upon us. I cannot, however, forbear an allusion to the unusual circumstance of our losing by death two of our students in Arts, — both young men of much promise. One had devoted himself to the Christian Ministry, and promised to be a kind and loving yet firm and energetic bearer of the standard of God's truth in the world. The other was one of the few young men in this

country who have pursued the higher studies of the University with the view of elevating our Canadian agriculture to the rank of a scientific profession. They are gone to a better land, where there are neither moral nor natural wastes to cultivate; but their call to those who remain is to press forward and fill their places in the still thin ranks of Canadian culture and higher usefulness. They are not wholly lost to us, while their example remains. On the whole, our review of the past year affords reason for thankfulness and encouragement, and I would now close with thanks to our friends for their aid and countenance, and with the expression of our acknowledgments to our guest, Prof. Goldwin Smith, for the good words he has given us on this occasion, and still more for his kindly acceding to our request to deliver a course of lectures in the next session under the auspices of this University. [Applause.]

The proceedings then closed.—[*Montreal Gazette.*]

## ADVERTISEMENTS.

### Teachers Wanted.

For the Model School at Percé, a Teacher with good recommendations, competent to teach French and English, and who has already taught for at least four years. Applications, stating salary, to be addressed to

WILLIAM FLYNN,  
Secretary Treasurer.

Percé, 29th April, 1872.

For an Elementary School at Hope, County of Bonaventure, an English Teacher holding a Diploma.

Apply to

JOHN D. ROSS,  
Secretary Treasurer.

## OFFICIAL DOCUMENTS.

DISTRIBUTION of the Grant for superior education to Catholic Institutions for the year 1871, in accordance with the Act 18 Vict. Chap. 54.

### LIST No. 1.—CLASSICAL COLLEGES.

NOME.	Number of scholars.	Grant for 1870.		Grant for 1871.	
		\$	cts.	\$	cts.
Nicolet.....	280	1646	1597		
St. Hyacinthe.....	254	1646	1597		
Ste. Thérèse.....	155	1338	1488		
Ste. Anne Lapocatière.....	238	1688	1637		
L'Assomption.....	210	1338	1488		
St. Marie, Montreal.....	325	1338	1488		
Trois-Rivières.....	130	1176	1276		
Ste. Marie de Mounoir.....	151	732	710		
Rimouski.....	118	1338	1438		
<b>Total.....</b>		<b>\$12240</b>	<b>\$12719</b>		

### LIST No. 2.—COLLEGES OF INDUSTRY.

Joliette.....	169	810	786
Laval.....	132	354	344
Longueuil.....	250	358	348
Masson.....	247	1176	1276
Notre-Dame de Lévis.....	180	810	786
Rigaud.....	136	810	786
Sherbrooke.....	78	277	269
St. Laurent.....	325	641	622
St. Michel, Bellechasse.....		626	607
Varannes.....	90	277	269
Verchères.....		354	344
St. Marie, Beauce.....		354	454
Schools of applied science.....		2500	2500
<b>Total.....</b>		<b>\$9347</b>	<b>\$9391</b>



LIST No. 3.—ACADEMIES FOR BOYS OR MIXED.

NAME.	Number of scholars.	Grant for 1871.	Grant for 1872.
Aylmer.....	57	210	204
Baie du Febvre.....	98	140	136
Baie St. Paul.....	102	155	151
Beauharnois.....	232	210	204
Belœil.....	72	312	303
Berthier, en haut.....	180	312	303
Bonin, St. André d'Argenteuil.....	95	210	204
Buckingham.....	130	140	138
Chambly.....	103	164	159
St. Columban de Sillery.....	177	240	233
St. Cyprien.....	125	140	136
Dufresne, St. Thomas Montmagny.....	47	240	233
St. Eustache.....	136	210	204
Farnham.....	235	185	179
Gentilly.....	146	140	136
Girouard.....	220	142	138
St. Grégoire.....	135	140	138
L'Islet.....	144	210	204
St. Jean.....	160	437	424
St. Jean Montmorency.....	116	140	136
Kamouraska.....	92	310	301
Laprairie.....	128	185	179
Lotbinière.....	19	124	120
St. Marthe.....	96	140	136
Montmagny, St. Thomas.....	210	232	225
Montréal, Commercial Academy.....	267	1739	1687
Pointe-aux-Trembles, Hochelaga.....	60	277	269
Quebec, Com. & Liter. Academy, St. Roch.....	64	140	136
Roxton.....	403	122	118
Sorel.....	350	364	353
St. Timothée.....	140	204	198
Vaudreuil.....	88	140	136
Yamachiche.....	115	210	204
Princeville.....	.....	300	291
Total.....	.....	\$8564	\$8312

LIST No. 4.—GIRLS' ACADEMIES.—(Continued.)

NAME.	Number of scholars.	Grant for 1871.	Grant for 1872.
Cacouna.....	103	157	152
Kamouraska.....	96	141	137
Laprairie.....	191	89	89
St. Laurent, Jacques-Cartier.....	193	187	181
St. Lin.....	160	89	89
Longueuil.....	308	200	272
Longue-Pointe, convent of Hochelaga.....	36	141	137
Lachine.....	294	194	189
N. D. de la Victoire.....	256	111	108
Ste. Marie Beauce.....	146	157	152
Ste. Marie Monnoir.....	144	141	137
St. Martin.....	98	89	89
St. Michel Bellechasse.....	118	212	206
Deaf Mutes de la Providence.....	135	200	194
Academy, St. Denis, Congrégation.....	178	174	169
St. Nicholas.....	91	89	89
St. Paul, l'Industrie.....	95	89	89
Pointe Claire.....	95	89	89
Pointe aux Trembles, Hochelaga.....	112	187	181
do. Portneuf.....	98	187	181
Rimouski.....	167	212	206
Rivière Ouelle.....	89	162	157
Ste. Scholastic.....	107	97	97
Sherbrooke.....	295	280	272
Sorel.....	635	323	314
Terrebonne.....	110	89	89
Ste. Thérèse.....	141	89	89
Ste. Timothée.....	97	125	121
St. Thomas de Pierreville.....	.....	141	137
do. Montmagny.....	228	212	206
Trois Pistoles.....	110	124	120
Trois Rivières.....	300	212	206
Vaudreuil.....	114	89	89
Varennes.....	83	157	152
Yamachiche.....	140	141	137
Youville.....	85	141	137
Total.....	.....	\$9959	\$9721

LIST No. 4.—GIRLS' ACADEMIES.

St. Aimé.....	180	106	103
St. Ambroise de Kildare.....	100	89	89
Ste. Anne de la Pérade.....	150	126	122
L'Assomption.....	179	126	122
Baie St. Paul.....	130	106	103
Belœil.....	104	89	89
Berthier.....	131	96	96
Boucherville.....	111	89	89
Chambly.....	160	141	137
St. Charles de l'Industrie.....	339	187	181
Châteauguay.....	140	89	89
Les Cèdres.....	77	89	89
St. Césaire.....	172	119	116
St. Clément.....	243	141	137
Ste. Croix.....	94	141	137
St. Cyprien.....	174	89	89
St. Denis, (St. Hyacinthe).....	140	89	89
Ste. Elisabeth, (Joliette).....	135	187	181
St. Eustache.....	125	94	94
Ste. Famille.....	62	179	174
Ste. Geneviève, Jacques-Cartier.....	104	139	135
St. Grégoire, Nicolet.....	253	212	206
St. Henri de Mascouche.....	97	89	89
St. Hilaire.....	77	89	89
St. Hyacinthe, Sisters of Charity.....	220	126	122
do. Sisters of la Presentation.....	209	123	122
L'Islet.....	72	126	122
Isle Verte.....	111	124	120
St. Jacques l'Achigan.....	190	187	181
St. Jean Dorchester.....	437	212	206
St. Hugues.....	95	280	272
St. Joseph, Lévis.....	331	280	272

LIST No. 5.—MODEL SCHOOL.

Society of education, Quebec.....	515	973	944
do. Three Rivers.....	372	471	457
Lorette Indians, boys.....	.....	162.50	162.50
do do girls.....	.....	162.50	162.50
do do St. François.....	.....	155	152
St. Jacques, Montréal.....	622	780	757
Catholic Commissioners.....	.....	.....	.....
Quebec.....	.....	313	304
Acton Vale, Convent.....	200	150	146
Artabaskaville.....	50	56	56
Aylmer Convent.....	83	150	146
Ange Gardien.....	66	73	73
Bagotville.....	95	56	56
Beaumont.....	76	73	73
Beauport.....	150	73	73
Berthier (Montmagny).....	105	73	73
Bécancour.....	78	125	121
Boucherville.....	115	73	73
Baie du Febvre.....	167	73	73
Bastiscan.....	99	56	56
Cap St. Ignace.....	109	100	100
Cap Rouge.....	137	100	100
Carleton.....	73	103	100
Châteauguay.....	65	73	73
Château Richer, boys.....	74	73	73
do. girls.....	84	51	51
Chicoutimi.....	95	166	166
Côte des Neiges.....	97	73	73



LIST No. 5.—MODEL SCHOOLS.—(Continued.)

NAME.	Number of scholars.	Grant for 1871.	Grant for 1872.
Côteau du Lac, boys	80	73	73
do girls	80	56	56
Côteau St. Louis	173	73	73
Chicoutimi, Convent	63	150	146
Carleton, do	45	200	194
D'Eschambeault, boys	60	140	136
do girls	90	73	73
Champlain	124	73	73
Coaticook	80	100	100
Eboulements	64	73	73
Escureuils	127	56	66
Escoumins	57	73	73
Etchemin, Village	242	100	100
Grande Baie, boys	32	73	73
do girls	44	56	56
Grande Rivière	56	73	73
Grondines	75	56	56
Henryville	57	56	56
do Convent	135	56	56
Hurtingdon	79	73	73
Hébertville	105	100	100
Iberville	145	73	73
do girls	118	56	56
Lacadie	86	73	73
Lacolle	96	73	73
Lachine	130	73	73
Lotbinière	21	73	73
do Convent	64	73	73
Maîtrise St. Pierre Montreal	175	100	200
La Pesche	68	56	56
Maria	40	73	73
Malbaie	60	73	73
Matane	89	56	56
Girls' school, Visitation street	1000	73	73
Cath. Commrs. School, Montreal		975	946
Nicolet, girls	162	56	56
N. D. de Bonsecours, Convent	158	150	146
N. D. de Hull	220	73	73
N. D. du Portage	60	56	56
Nouvelle	53	100	100
Percé	65	56	56
Pointe Claire	66	140	136
Pointe-aux-Trembles, Portneuf	72	73	73
Pointe du Lac	86	73	73
Portneuf, garçons	95	56	56
do filles	72	56	56
Quebec, St. Roch South	340	173	168
do do Convent	620	73	73
do St. John's Suberbs		73	73
Rawdon, dissentients	37	73	73
do Convent	29	73	73
Rigaud, Girls Academy	106	73	73
Rivière Ouelle	62	73	73
Rivière des Prairies	32	56	56
Rivière du Loup	89	73	73
Fraserville, boys, Témiscouata		73	73
Rivière du Loup, Maskinongé	80	73	73
Rivière du Loup, Fraserville		73	73
Témiscouata, Convent	150	73	73
Sault au Récollet	65	73	73
Sherrington	92	89	89
Somerset de Plessisville	24	190	185
Stanford	29	56	56
Soulanges	40	73	73
Shawinegan	102	56	56
Ste. Aimé	122	173	168
St. Alexandre, Iberville Convent	115	56	56
do Kamouraska	90	73	73
do Iberville	68	73	73
St. Anicet	115	56	56

LIST No. 5.—MODEL SCHOOLS.—(Continued.)

NAME.	Number of scholars.	Grant for 1871.	Grant for 1872.
St. André, Kamouraska	51	73	73
Ste. Anne de la Pérade	117	73	160
do des Plaines	108	73	73
do No. 2, Kamouraska	110	73	200
St. Anselme, Convent	84	73	73
Ste. Antoine de Tilly	32	73	73
St. Apollinaire	80	73	73
St. Anne de Bellevue	78	73	73
St. Ambroise, Quebec	55	73	73
Ste. Angélique, Papineauville		56	56
Ste. Brigitte, Iberville	72	56	56
St. Calixte de Somerset, Convent	150	73	
Somerset, Convent, (already paid.)		50	
Ste. Croix	63	56	56
Ste. Cécile	222	173	73
do Convent	266	206	103
St. Césaire	204	00	194
St. Charles Bellechasse, boys	52	73	73
do do girls	69	73	73
do de St. Hyacinthe	120	73	73
Ste. Claire	87	73	73
St. Célestin, Nicolet Convent	124	156	160
St. Constant	111	206	103
St. Christophe	140	00	194
St. Denis, Kamouraska	96	73	73
do No. 1, St. Hyacinthe	80	173	73
St. David	80	00	100
St. Dunstan	41	73	73
St. Edouard, Napierville	112	73	73
St. Elizabeth	78	73	73
Ste. Flavie	90	56	56
St. François du Lac, parish	94	56	56
Ste. Famille	45	73	73
Ste. Foye	100	73	73
St. François du Lac, village	115	73	73
St. Frédéric, Drummond		73	73
St. Ferdinand d'Halifax	25	56	56
Ste. Geneviève, Batiscan	65	73	73
Ste. Geneviève, Jacques-Cartier	70	56	56
St. George, Cacouna	58	56	56
Ste. Gertrude	46	73	73
St. Gervais, Convent	65	73	73
do boys	48	173	73
St. Grégoire le Grand	56	100	100
St. Gabriel de Brandon	79	00	100
do Convent	86	56	56
St. Henri de Mascouche	34	73	73
St. Henri, Hochelaga	387	173	73
do de Lauzon	90	50	146
St. Hermas	74	73	73
St. Hilaire	78	73	73
St. Hubert	35	56	56
St. Hélène, Kamouraska	78	56	56
St. Henri, Hochelaga Convent	1228	56	56
St. Irénée	47	73	73
St. Isidore	99	73	73
St. Jacques de l'Achigan		173	73
do le Mineur	118	06	103
St. Jean Bte. Village	253	73	73
do Chrysostôme			
Châteauguay	120	56	56
St. Jean Chrysostôme, Lévis	46	56	56
do des Chaillons	60	73	73
St. Jean Port Joly	52	73	73
do do girls	54	73	73
St. Jérôme, Convent	164	173	73
do boys	165	50	146
St. Joachim, Deux-Montagnes	97	73	73
St. Joseph, Chicoutimi	77	56	56
Ste. Julie, Somerset	67	56	56

LIST No. 5.—MODEL SCHOOLS.—(Continued.)

NAME.	Number of scholars.	Grant for 1871.	Grant for 1872.
St. Joseph, Lévis.....	200	73	150
St. Lambert.....	54	97	97
St. Laurent, Montmorency.....	85	73	73
St. Léon.....	56	56	56
St. Lin.....	118	73	73
St. Louis de Gonzague.....	125	56	56
do. do. Convent.....	135	56	56
St. Luc, St. Jean.....	49	56	56
Ste. Lucé.....	96	56	56
St. Liguori.....	110	150	146
St. Mathias, Rouville.....	100	56	56
St. Martin.....	95	73	73
St. Martine, boys.....	108	56	56
do. girls.....	100	56	56
St. Michel Archange, boys.....	70	56	56
St. Monique.....	121	73	73
St. Michel Archange, girls.....	108	73	73
St. Maurice.....	70	73	73
St. Narcisse.....	107	73	73
St. Nicolas.....	40	73	73
St. Norbert, Arthabaska.....	65	56	56
do. du Cap Chatte.....	73	73	73
St. Octave de Métis.....	92	56	56
St. Ours, Convent, town.....	118	73	73
St. Ours, boys, town.....	70	73	73
St. Paschal.....	109	73	73
St. Pierre Isle d'Orléans Montmorency.....	86	56	56
St. Philomène.....	78	73	73
St. Pierre de Durham.....	56	56	56
St. Philippe.....	85	73	73
St. Pierre les Becquets.....	61	56	56
St. Polycarpe.....	70	73	73
do. Convent.....	150	73	73
St. Roch de l'Achigan.....	93	73	73
St. Romuald de Lévis.....	208	73	73
St. Rose.....	105	73	73
St. Raphaël.....	88	56	56
St. Sévère.....	78	73	73
St. Scholastique.....	84	73	73
St. Stanislas, Champlain.....	160	73	73
do. Beauharnois.....	117	73	73
St. Sulpice.....	53	56	56
Trois-Pistoles, No. 1, Témiscouata.....	72	73	73
St. Ursule.....	87	56	56
St. Urbain.....	56	56	56
St. Valentin.....	80	56	56
St. Vincent de Paul, Convent.....	142	73	73
do. boys.....	64	56	56
St. Valier.....	50	73	73
Waterloo, Shefford.....	120	100	100
Wotton.....	36	200	194
Victoriaville.....	130	56	56
St. Zotique.....	105	56	56
St. Paschal.....	73	73	73
Deaf Mutes, Province of Montreal.....	618	.....	.....
Total.....	.....	.....	\$20,390

NEW DEMANDS.	Number of scholars.	Grant for 1871.	
Buckingham, Ottawa.....	40	\$73	
St. Pierre de Charlesbourg, Quebec, Convent.....	75	56	
Charlesbourg, girls.....	48	56	
do. boys.....	77	56	
Champlain, Convent.....	124	73	
Cap Santé.....	78	73	
Côteau St. Louis, Convent.....	118	73	
Drummondville.....	50	73	
Kingsey French Village.....	67	56	
Longue Pointe, Hochelaga, boys.....	30	73	
N.-Dame de Hull, Ottawa, Model school there already.....	104	72	
N.-D. de toutes grâces, Ottawa, Convent.....	52	72	
St. Anne, Conv., Hemmingford.....	92	72	
St. Thomas de Pierreville.....	75	72	
St. Vallier Bellechasse, boys.....	50	72	
St. Sylvestre Lottinière.....	70	56	
St. Roch des Aulnets, girls.....	28	56	
St. François, Rivière du Sud, Montmagny, Convent.....	60	72	
St. Joseph, Beauce.....	40	73	
St. Colomb de Sillery.....	80	200	
St. Barthélemy, Berthier.....	60	72	
St. Marc, Verchères.....	75	72	
St. Cécile du Bic.....	126	56	
Sœurs de la Providence, 3 Riv.....	128	100	
Waterloo, Templeton.....	163	72	
St. Félix de Valois, Joliette.....	55	72	
St. Félix du Cap Rouge.....	15	56	
S. Jean, Sisters of Charity.....	140	100	
St. Agnès, Charlevoix.....	45	56	
St. Ambroise, Quebec.....	50	56	
St. Agapit.....	66	56	
Total.....	.....	\$2253	\$2253 00

DISTRIBUTION of the Grant for Superior Education to Protestant Institutions for 1871, in accordance with 10th October, Cap. 54.

LIST No. 1.—UNIVERSITIES.

NAME.	No. of scholars.	Grant for 1870.	Grant for 1871.
McGill College.....	274	\$ cts. 1369 49	\$ cts.
Contingent expenses.....	.....	271 00	.....
Bishop's College.....	62	979 18	.....
Total.....	.....	2619 67	2619 67

LIST No. 2.—CLASSICAL COLLEGES.

St. Francis, Richmond.....	119	587 66	.....
Morin.....	6	369 98	.....
Total.....	.....	957 64	957 64

LIST No. 3.—COLLEGES OF INDUSTRY.

Lachute.....	146	184 99	.....
Total.....	.....	.....	184 99

LIST No. 4.—ACADEMIES FOR BOYS OR MIXED

NAME.	No. of scholars.	Grant for 1870.	Grant for 1871.
Aylmer.....	66	129 52	
St. Andrew.....	60	57 37	
Barnston.....	38	86 35	
Bedford.....	109	90 06	
Casseville.....		86 35	
Charleston.....	126	173 91	
Clarenceville.....	54	170 82	
Clarendon.....	50	86 35	
Coaticook.....	72	75 91	
Compton.....	120	86 35	
Cookshire.....	45	86 35	
Danville.....	162	129 52	
Dudswell.....	43	86 35	
Dunham.....	73	170 82	
Eaton.....	60	45 66	
Farnham.....	67	129 51	
Ste. Foye.....	51	86 35	
Freighsburg.....	60	114 07	
Georgeville.....	49	88 14	
Granby.....	135	170 83	
Huntingdon.....	97	191 18	
St. Jean.....	71	205 39	
Knowlton.....	62	170 83	
Missisquoi.....	60 & 70	131 98	
Phillipsburg.....	63	89 14	
Shefford.....	80	197 96	
Sorel.....	65	76 49	
Stanbridge.....	73	133 22	
Stanstead.....	110	305 86	
Sutton.....	89	107 13	
Sherbrooke.....	81	189 33	
Cowansville.....	65	86 95	
Total.....		4035 06	\$4035.06

LIST No. 5.—MODEL SCHOOLS

NAME.	Number of scholars.	Grant for 1871.	Grant for 1872.
St. Andrews School, Quebec.....	35	193 63	
Colonial School Society, Sherbrooke.....	89	96 86	
British & Canad. School Society, Quebec.....	198	421 78	
National School, Quebec.....	196	213 99	
Pointe St. Charles, Montreal.....	83	142 47	
Amer. Presbty. School Society, Montreal..	125	193 02	
Col. Church & School Society, Montreal..	774	384 80	
Infant School Lower Town, Quebec.....	45	96 23	
“ Upper Town, Quebec.....	90	96 23	
Berthier, (Diss).....	29	34 57	
Bury.....	45	45 05	
Coteau Landing.....	32	34 57	
Durham.....	96	61 76	
Lacolle, (Diss).....	161	45 05	
Lachine, (Diss).....	84	45 05	
Leeds.....	88	45 05	
Magog.....	71	45 05	
Montreal, Ecole Allemande.....	80	34 57	
St. Mathew, Pointe St. Charles.....	50	34 57	
St. Etienne, Ottawa.....	106	45 05	
Montreal, Ecole Protest. rue Ste. Anne..	310	45 05	
Rawdon.....	50	45 05	
St. Henri, Hochelaga.....	86	45 05	
Chambly.....	42	34 57	
Trois-Rivières.....	66	34 57	
Total.....			\$2513 64

Meteorological Observations.

From the Records of the Montreal Observatory, Lat. 45° 31 North, Long. 4h. 54m. 11 sec. west of Greenwich. Height above the level of the sea, 182 feet. For the month of April, 1872. By CHARLES SMALLWOOD, M.D., LL.D., D.C.L.

DAYS.	Barometer at 32°			Temperature of the Air.			Direction of Wind.			Miles in 24 hours.
	7 a. m.	2 p. m.	9 p. m.	7 a. m.	2 p. m.	9 p. m.	7 a. m.	2 p. m.	9 p. m.	
1	29.249	29.324	29.548	31.0	31.0	30.0	W	W	W	129.12
2	.810	.877	.930	26.2	43.7	32.0	W	W	W	206.17
3	.920	.925	30.010	27.2	47.6	35.0	W	W	W	209.27
4	30.075	30.060	.050	33.6	51.1	37.2	W	W	W	104.16
5	.100	.04	.825	30.6	56.2	38.7	N	W	W	84.12
6	29.975	29.000	29.024	37.1	61.0	47.0	W	W	W	116.71
7	30.000	.982	.759	32.3	53.0	41.8	N	E	N	87.40
8	29.962	.951	.950	39.2	52.6	43.0	S	S	E	61.12
9	.762	.587	.530	42.0	49.8	47.0	S	W	W	59.24
10	.472	.56	.531	42.3	43.2	33.0	W	W	W	81.11
11	.811	30.001	30.176	34.0	54.1	37.3	W	W	W	24.18
12	30.250	.029	29.825	32.2	46.5	40.6	N	W	N	104.19
13	29.770	29.650	.748	40.2	60.7	42.1	W	W	W	97.81
14	.776	.820	.076	54.2	46.2	34.1	W	W	W	264.71
15	.971	.864	.800	30.4	48.2	37.0	W	N	W	189.74
16	.900	30.009	30.061	80.2	49.9	39.0	N	W	W	106.61
17	30.131	29.999	29.980	35.0	57.1	43.6	W	W	W	89.50
18	29.875	.64	.601	35.2	66.3	45.5	W	S	S	75.44
19	.550	.502	.650	40.2	63.1	51.2	W	W	W	65.20
20	.900	.961	.987	34.8	59.4	46.8	N	E	N	80.09
21	30.050	30.898	30.800	41.0	70.4	53.0	W	N	N	101.19
22	20.711	29.904	29.970	43.7	35.0	32.6	W	W	W	91.71
23	.921	.879	.859	29.8	43.0	38.1	W	W	W	247.12
24	.850	.861	.900	35.0	58.2	46.3	W	W	W	196.29
25	.958	.911	.812	39.9	50.4	42.2	N	E	W	74.20
26	.642	.702	.51	41.0	80.0	55.2	W	N	W	80.00
27	.875	.984	30.060	43.1	71.2	48.4	N	W	N	106.24
28	30.151	30.110	.181	35.2	68.1	46.2	N	W	N	208.70
29	.279	.250	.289	39.8	69.2	54.3	N	W	N	162.18
30	.271	.310	.031	46.0	73.1	58.7	S	W	S	54.29
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

REMARKS.

The highest reading of the Barometer was on the 30th day, and was 30.310 inches the lowest on the 1st day, 29.249 inches, giving a monthly range of 1.061 inches. The monthly mean was 29.813 inches.  
 The highest reading of the Thermometer was on the 30th day, and was 75° 1; the lowest temperature was on the 2nd day and was 25° 4. The mean of the month was 45° 06.  
 Rain fell on 6 days, amounting to 0.550 inches. Snow fell on 4 days, amounting to 8.44 inches.  
 The mean temperature of the month was 8° lower than the Isotherm for the month of April deduced from a long series of years.

—Observations taken at Halifax, N. S. during the month of April, 1872 Lat. 44° 39' N.; long. 63° 36' W.; height above the sea 175 feet; by Sergt. Thurling A. H. C. Halifax.

Barometer, highest reading on the 30th.....	30.100 inches
“ lowest “ “ 2nd.....	29.100
“ range of pressure.....	1.088
“ mean for month (reduced to 32°).....	29.634
Thermometer, highest in shade on the 20th.....	60.0 degrees
“ lowest “ “ 6th.....	16.3
“ range in month.....	43.7
“ mean of all highest.....	48.8
“ mean of all lowest.....	27.8
“ mean daily range.....	21.0
“ mean for month.....	38.3
“ highest reading in sun's rays.....	110.0
“ lowest on grass.....	11.8
Hygrometer, mean of dry bulb.....	42.2
“ mean of wet bulb.....	38.5
“ mean dew point.....	34.0
“ elastic force of vapour.....	.196
“ weight of vapour in a cubic foot of air....	2.3 grains.
“ weight required to saturate do.....	0.8
“ the figure of humidity (Sat. 100).....	72
“ average weight of a cubic foot of air.....	547.3
Wind, mean direction of North.....	16.00 days.
“ “ East.....	3.75
“ “ South.....	6.50
“ “ West.....	4.25
“ daily force.....	2.3
“ daily horizontal movement.....	226.8 miles.
Cloud, mean amount of, (0-10).....	6.8
Ozone, mean amount of, (0-10).....	4.2
Rain, number of days it fell.....	6
Snow, number of days it fell.....	4
Amount of rain and melted snow collected.....	4.33 inches.
Fog.....	3 days.
Hail fell.....	2