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THE
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EDITED BY

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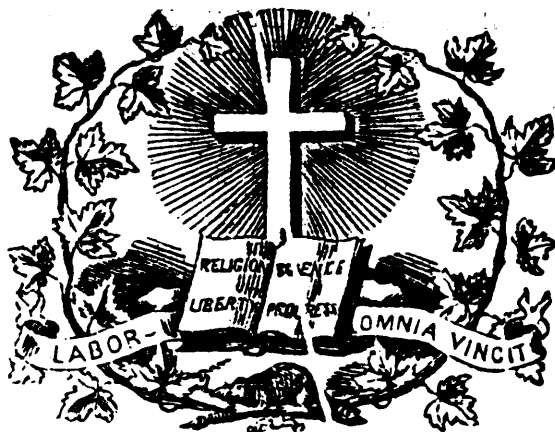
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ensure a pass, yet without detriment to the general school studies. My practice has ranged over many years, during which time I have taught the various branches of physical science and natural philosophy, as well as the elements of mental and moral science, and the diverse subjects of mathematics and practical, plane, and solid geometry. I have taught these subjects to classes of youths and adults, and of both sexes, in day schools and in the evening. By common consent, the classes connected with South Kensington, have arranged their terms from Michaelmas to May, which, deducting a month for Christmas and Easter, gives a period of six months, say 180 days; omitting again Wednesdays and Saturdays as broken days, and Sunday being *dies non*, 104 days remain for the arrangement of science lessons. As a daily lesson in science cannot advantageously extend beyond an hour, this is equivalent to 104 hours, a time in which an efficient teacher, supported by the general good discipline of the school, and supplemented, perhaps, by a few extra hours just preceding the examination, could guarantee to convey so much of elementary science as to ensure his class passing with credit, in *two allied branches*. Thus Animal Physiology and Zoology might be taken together, or Animal and Vegetable Physiology, or Structural, Economic, and Systematic Botany, or two divisions of Natural Philosophy. Similarly Geology links itself with mineralogy, and Physical Geography with Astronomy, or with almost anything; and the alliances could be still further carried out.

To do justice to his functions, therefore, the science teacher demands four hours a week, for half the year, from the thirty hours that his pupils usually attend school. The schoolmaster proper, at the same time, has so many subjects pressing upon his attention, with all the weight of prescription, that, apart from science, his great difficulty is already to apportion his weekly thirty hours to the best advantage. Science also puts forward no secondary pretensions to consideration; nor can it be wedged in to fill up a gap. It claims a primary place in the school routine, and its claims are every day more and more recognized as valid. The skilful administration of our school will be tested and measured ere long, by the way in which science is introduced into their curriculum. That it can be efficiently taught, and that with positive advantage rather than damage to every other subject, is proved by the practice of the most advanced

EDUCATION.

Can Science be Taught in our Day Schools?

The following notes, by A. J., in the *Museum and English Journal of Education*, detailing what may and may not be judiciously attempted, based upon what has and has not been done, might contribute a service to teachers beyond that of the private perusal for which they were written.

I have been asked to give an opinion, founded upon my experience in teaching, as to the length of time necessary to prepare a class for the Government annual examination in science, to

modern schools, where it is an integral part of the discipline, from the preparatory classes upwards.

I may be permitted to sketch what I conceive to be the proper place of science in schools. Let me premise that no one knows better than the science teacher, whose science is the acquisition, as it were, of his lifetime, that nothing like completeness of knowledge in any subject of science can be imparted in 104 hours. The number of lessons is given as a brief and direct answer to the question as to the length of time necessary to prepare a class for the Government examination. All that could be accomplished, or even aimed at, in such a course, would be to furnish the pupils' minds with an interesting and important store of scientific facts, as a nucleus for research, and to direct their future tastes. Examination is not the end of science-teaching in schools. Its purpose is mainly mental discipline. The logic of science, practised in its inductions and deductions, calls into exercise the powers of observation and memory, of reflection, of drawing inferences, and of generalization; exercises as invigorating to the mind as physical exercise to the muscles.

As a consequence, science-teaching should be continuous in school, not merely at certain seasons, or confined to one department. The basis should be laid in the infant school, where so much of the instruction is oral in the form of "object lessons." The time, too often lost through the "objectless" character of loose and promiscuous lessons, becomes invaluable in teaching and training where science directs the course. As examples, the elementary principles of well-being, cannot merely be taught, but can be drawn from quite young children, and in a manner exciting their keenest interest, in a series of lessons on "common things," or more correctly "vital things," such as are suggested by the first few pages of Mr. William Ellis's book, "Progressive Lessons in Social Science." In an equally simple manner, the foundation may be laid for an extended knowledge of physiology, connected with the laws of health, and of natural history. Lessons on a "tooth," a "snail-shell," or a "flower," need but to be mentioned to suggest at once, how much there is of scientific interest, without being so called, connected with their structure and functions, which the skilful teacher would, in the most delightful manner, implant in the young mind as a fertile germ of a desire for further scientific knowledge. Thus science, as science, is not the sole purpose served. *The desire to know* grows into the intensest of our pleasures, and makes happiness even of our difficulties. Where this desire is judiciously educated, the "wearisome bitterness of learning" never appears, but all is eager delight. It is self culture from infancy. In these truths lies a solution of the time table difficulty. In the course of such lessons as I have barely shadowed, young children acquire the power of handling the instruments of knowledge, reading, writing, computing, by a happy instinct. By so much therefore, the time has been profitably diverted from the direct teaching of these dry instruments, while the mind has also been strengthened and furnished with truth. Dr. Hodgson, at the late Social Science Congress, related a simple domestic incident that bears on this point. "Papa," said his little boy, four years of age, "Why does my cousin have lessons to do at night?" "Because," answered papa, "her parents wish her to learn." "But don't I learn," pursued the inquisitive child, "by what you talk to me about, papa? and I don't have any lessons." Children thus equipped will obviously be better prepared and turn to better account, school middle-age, where science-teaching would be extended and more formally systematic. The mental discipline, the same in kind but greater in degree, would proceed, and the collateral advantages of science would tell upon the school work still more than before. In the practice of taking "Notes," and reproducing the science lessons, facility in composition, power of expression, correct grammar, are all acquired, while the improved mind is able to turn to better account the diminished number of lessons in the rules of literature proper.

Reaching the highest classes of a school, the subjects of study

multiply in one direction more rapidly than they diminish in another. The student, however, has become skilful in the use of his tools, and reading, writing, arithmetic, grammar, geography, history, simply as such, are reduced to the minimum of instruction. Language and science combine to apply and to complete the knowledge of these subjects. The influence of the earlier teaching and training develops itself here, in the self-reliance of the pupils, the resultant of all the forces up to this point, called education. The self-reliance, in its turn, makes the last stage of school life a natural link with the after business of the world, and shades off any abrupt transition from the duties of childhood to those of adolescence. Granting that children, in the way of receiving science instruction, are likely to spend four years at school,—and many to their advantage spend more,—the question remains, as to the best mode of spreading science instruction over this period. I have already given an opinion, that two allied subjects could be profitably taught together. If each alliance occupied a year, *i.e.*, a six months' elementary course and six months' examination course, no less than eight subjects of science would be reasonably well acquired, during the four years of school attendance. Meanwhile the mental discipline will have made the power of investigation strong, and with the power will have come the taste to pursue truth for the love of it.

1st, As a community, we have a right to require that our children should be equipped before leaving school with an insight into the laws of conduct, and social well-being founded thereupon, in the conviction that the possession of such knowledge tends to its being acted upon. 2d, That they should know so much of the structure and functions of their own bodies, as to give them an impulse towards obedience to the laws of health. 3rd, That their minds should have become so far disciplined as to develop a self-reliance in adapting their knowledge to their vocations, and also in the further pursuit of truth as the most elevated of their enjoyments.

Let us dwell for a moment upon the conditions surrounding man from birth. Mere existence is eminently material. His wants may be summarized under the heads of food, the means of warmth, and of rest; involving raw materials,—the gift of nature, and labour,—the energy of man. From raw materials we are naturally led to the consideration of the earth of which they are the produce, and to the study of the laws by which nature is governed.

What a wide field of research does this view of the matter open up! We gather from it the true meaning of object lessons, which, in their full significance, should comprise the economic history of produce from the animal, vegetable, and mineral kingdoms, and lay the foundation of the whole range of useful science teaching. Were we to stop short at economic botany, economic zoology, and economic mineralogy, a vast power of usefulness would be put into the possession of our pupils; but we need not stop short. Round such teaching clusters all the physical sciences, and the philosophy of industrial life. Chemistry and familiarity with the microscope, are essential to a real knowledge of a raw substance; and physical geography, the science of sciences, is, as it were, the universal medium,—absorbing and containing both physical science and natural philosophy.

Again, produce, in its raw state, is only at the threshold of its history; processes of manufacture and of after distribution and consumption follow, the methods and reason of which are not less important branches of knowledge than is the nature of the substance itself. Thus we get launched into moral science, for we cannot refer to the subject of human labour, its modes and aims, without confronting the laws of conduct, which enable man to live and labour in communities, and to enjoy the blessings of civilization. In order to vitalize such a science scheme, based upon object lessons and physical geography, every school should be a repository of specimens of raw produce. Man has gained his knowledge of the uses of raw materials by possessing them. No amount of abstract reasoning would have led him to discover the manifold uses of iron, without first seeing, handling,

and examining a piece of iron. We must get our knowledge of things from the things themselves. But as it would be impossible in youth to search over the world, we must learn from specimens brought home to us from the countries where they are indigenous. Books alone could never give this kind of knowledge, but the desire for knowledge, thus acquired, would send students eagerly to books to get more, and by the light shed from the ancillary sciences they would get an insight into nature, unfolding to them, better than any other means, "man's place in creation," and qualifying them to maintain their place. This is to educate the inquiring mind—to lead it into innocent, healthful, and useful pursuits, to the end that a wise habit of mental discipline should control and subdue the mere animal instincts, and justify our claim to be the "lord and king of nature."

I have avoided throughout the ill-chosen term, technical instruction, inasmuch as, applied to schools such as are referred to, it is a misnomer. Except in a few pauper establishments, where there is basket-work, shoemaking, tailoring, marine drill, or other industrial work of the humblest kind, technical instruction properly so-called, is not given in the school room. School life is a preparation, not for special calling, but for every calling. School life, therefore, deals with general principles, and science is taught, not to make surgeons of all our young physiologists, or professors of all our geologists, but for the influence of science teaching upon the mind and character.

Technical schools, such as that for naval architecture, and the school of mines, are really for students who have, in common phrase, left school; and take their ground, much the same as faculties of law, medicine, or divinity, in our colleges. Whether it is desirable to increase the number of these technical schools, is not the question directly presented, although many reasons at once rise up why it is desirable. Even the night classes for artisans, although bearing the character of technical schools, and having a closer relationship to our elementary day schools, are at present beyond our province.

Falling back, then, upon our day schools proper, I have stated what I know, from my own practice and experience, can be done; and at the same time have endeavoured to point out, that while the principles of general science might be taught to school children with unalloyed advantage, technical instruction, strictly so-called, is undesirable in our primary schools, if not impossible.

A First-Class Teacher. (1)

WHAT HE IS WORTH.

We copy a portion of an excellent address, by the Rev. Dr. Moore, delivered some time since in Brooklyn, in aid of the erection of a new building for the Adelphi Academy:

"Having spent some of the best years of my life as an instructor, I think I may, without egotism, claim some knowledge of what a first-class teacher is worth. I think I know something about the difficulties of a teacher's profession. I know something of the delicacy of the material on which he has to work, and of the wonderful results which he is expected to produce. A rare combination of qualities it requires to be a good teacher. I believe it requires a rarer combination of excellencies for a first-class instructor than for any other profession on earth, the ministry of the Gospel not excepted. And when you find a man who has a genuine sympathy with children—especially with boys; who has the ability to enter into their feelings, into their hopes and fears and aspirations, into their boyish pride and boyish sensitiveness, and into all the elements that go to make up boys' life; who has the power to arouse the dormant energies in boys, and awaken their minds to healthful activity; who has the power rightly to direct these energies when awakened; who has the ability to subject boys to a thorough intellectual

discipline, while at the same time he is calling up all the finer qualities of the mind and heart, and cultivating their social affections and inspiring them with noble aims and generous sentiments; who has the ability to lead out and symmetrically develop the powers of boys and make their student-life a delight, so that from day to day they go to their tasks with spring and alacrity and bounding joy as to the choicest recreation; when you find a man so endowed that he is able to so develop the minds of boys as to make them beautiful and gentlemanly in their deportment, the elements being so mixed that when they come to manhood all shall rise up and say they are *men*—when you find such a man, you will find one who is not only worth his weight in gold, but who is worth it ten times over—you will find a first-class teacher. And that community, down in the midst of which is dropped such a teacher as that, ought to get on their knees and thank the Great Giver for such a treasure. Such a teacher lays any community under everlasting obligations.

"I speak as a practical teacher. I repeat again, that I know the difficulties which environ a teacher's work; I know how difficult and delicate that work is; and when you know the worth of a finely developed boy—when you know how his development is going to tell upon the value and wealth and blessedness of his life on earth and perhaps in eternity, you can in some measure appreciate the worth of such a teacher. Much as a community may appreciate, and well as they may pay him for his labor, they will forever remain his debtors."—*The Pennsylvania School Journal*.

Wasted Energies.

To a careful observer of man in his varied relations to the world and to society, no fact is more apparent than that of the energy on the part of many well-meaning and hard working men, upon objects or pursuits either trivial in themselves, or unfitted in their nature to the talents, the disposition, or the capabilities of those pursuing them. An exhaustive survey of all the trades, callings, and professions incident to human society would, we believe, prove it to be the case that at least half, if not a majority, of those pursuing them are dissatisfied with their lot, and that a great number of these are justly so, and the legitimate result of their natural unfitness for it. What is the cause of this, and in what manner may so great an evil be alleviated, are questions the practical solution of which could not fail to be of great advantage to the world and to individuals, inasmuch as it would tend to prevent the continuance of the evils alluded to, and would prompt thinking men to turn their attention and energy to those pursuits for which they are best fitted. We believe the cause of these mistakes to be, in a greater or less degree, first a false idea of life, and, consequent upon this, a faulty education for children, and a faulty society for men and women, inducing both to strive for the accomplishment of what seems to be the highest good, but of what is in reality but a disguised evil. Our meaning will be more apparent by calling attention to these facts: first, that at the present time success is made the criterion of merit, regardless of the manner of its attainment; second, that the most beneficial pursuits of life are not the ones held in highest esteem; but that, on the contrary, those professions which are the more immediate result of a man's vices and follies are held in far more respect than those callings which tend to supply his wants and improve his physical condition. Thus we find that the lawyer, the divine, and the physician are the pets and admiration of the society whose quarrels, whose sins, and whose imprudences furnish the means of their support; while the artisan, the farmer, and the man of business are accorded at the best but a secondary position in the society of which they are the actual foundations and support, and which, without their continued exertions, would soon perish from the want of the necessities and conveniences of life. This falsity of the world's idea of true worth is shown more fully in the adulation so freely bestowed upon the successful politician. No matter what his previous character, or by what steps of treach-

(1) This article was in type for our December issue but was unavoidably crowded out.

ery or of dishonesty he may have attained to his position, that position is his passport to the deepest homage of the world's callous heart; society opens to him her doors; purity, worth, and talent stand abased before him; poets sing his praises, and cringing historians perpetuate to future times the story of the talent, the virtue, and the greatness which his immediate acquaintances know to be a sham and a lie. What is the result? Parents having children to educate, and young men desirous of educating themselves, coveting a quick and brilliant success, or preferring the flattery of society to the possession of sterling manliness and independence, all turn to the professions or to politics as likely to soonest secure them what they desire. The result is that the professions are overstocked with second-rate talent, whose exercise scarcely wins the bare necessities of life for its possessor; every office in the gift of the people, or of the government is sought by hundreds of aspirants, all but one of whom must necessarily be disappointed. Thus many a good artisan, farmer, or business man is spoiled to make a bar-room politician or a second-rate lawyer, minister, or doctor, each of whom is naturally disappointed and discontented with his lot, and drags on through life, wasting and misapplying energies which, if directed to some pursuit for which nature fitted him, would have made him wealthy, useful, and respected.

It is often the case, on the other hand that talent and intellect, seeing all the avenues of science, of law, and of government, crowded with ignorant pretenders, placed there by the wealth or influence of relatives, turn in disgust from the disgraceful and unequal competition to the pursuit of an humble and more remunerative vocation, sullen and discontented at its unjust lot, and the world loses the energy and research of a master mind, or the country the services of a patriot and a statesman. The remedy, we think, lies in according to the useful branches of industry their proper value, in respecting the man and not his position, and an education which shall develop the natural powers and inclinations of the mind and not attempt to change the natural tastes and force the inclinations of the child. The young man who by business industry, or by managing the details of the manufactory or the plantation, makes himself useful to his employers or puts himself in the way of amassing a competence, is every inch as good as a man as the effeminate devotee of Æsculapius or Blackstone, and should be so considered and so treated. The poor and studious young man who is preparing himself by a thorough mastery of his profession for actual and permanent usefulness, is worthy of, and should receive more, honor than he whose combined impudence and servility have won him position and honors for which he is unfitted. There is in nearly every child a manifestation of those tastes and aptitudes which will indicate to an observing mind the pursuits for which he is best fitted, and the development of these is the only true and natural system of education, and the one which should be followed as near as circumstances will allow. By proper and general attention to these suggestions we believe much might be done to turn into their proper channels the energies of the rising generation, and to relieve it in some degree from the discontents and inconveniences of unnatural, unnatural, and unsatisfactory callings; the earth needs the fullest and freest energies of all her children, and whatever tends to secure it to them should be the object of society to encourage.—(*New Orleans Price Current*), *Catholic Standard*.

LITERATURE.

British Canadian Poets.

LECTURE BY THE REV. Æ. McDONELL DAWSON.

(Continued from our last.)

MRS. ROSANNA ELEANOR LEPROHON, (née Mullins.) This accomplished lady has won celebrity more by her numerous very beautiful and entertaining tales than by her poetical compositions. None of her poems which are of a high order of poetical excel-

lence, have as yet been published in a separate volume. We are indebted to Mr. Dewart's Selections for some of her best pieces. Her impressions on arriving at the sea-shore from her inland home, are very elegantly conveyed in the following lines :

How oft I've longed to gaze on thee,
Thou proud and mighty deep!
Thy vast horizon, boundless-free
Thy coast so rude and steep;
And now entranced I breathless stand,
Where earth and ocean meet,
Thy billows wash the silver sand,
And break around my feet.

Lovely thou art when dawn's red light,
Sheds o'er thee, its soft hue,
Showing fair ships, a gallant sight,
Upon thy waters blue;
And when the moonbeams softly pour
Their light on wave or glen
And diamond spray leaps on the shore,
How lovely art thou then!

Still as I look, faint shadows steal
O'er thy calm heaving breast,
And there are times I sadly feel
Thou art not thus at rest;
And I bethink me of past tales,
Ships that have left the shore,
And meeting with thy fearful gales,
Have ne'er been heard of more.

They say thy depths hold treasures rare,
Groves of coral—sands of gold—
Pearls fit but for monarch's wear
And gems of worth untold;
But these could not to life restore
The idol of one home,
Nor make brave hearts beat high once more
Who sleep beneath thy foam.

But I must chase such thoughts away,
They mar this happy hour
Remembering thou dost but obey
Thy great Creator's power—
And in my own Canadian home,
Mysterious boundless main,
In dreams I'll see thy snow-white foam
And frowning rocks again.

That literary prodigy, CHARLES HEAVYSEGE of Montreal, may well be classed among Canadian Poets, his works of greatest note having been written and published since he came to settle permanently in Canada. His success is all the more wonderful that his educational advantages were very limited. Such a mind as his could not long be trammelled even by the narrowest education. Nature designed him for a Poet and gifted him accordingly. It remained for him only to cultivate the gift. If it can be said that he owes it to assiduous self-culture, that he is ranked among the Poets of his time, it cannot be averred that he is not endowed with genius far more richly than ever he could have been by the highest worldly fortune. Nor has he dug a pit, as so many do, wherein to bury his talent. He has laboured and not in vain, to render it productive. Whilst on the one hand, he has sought knowledge above all price in the Divine Book, on the other, if we may judge from his productions, Shakespeare has been the chief source of his secular learning. He has endeavoured to penetrate the secret of that fascinating style by which the Bard of Avon has led captive so many generations of his fellow-countrymen. The Muses may well take pride in the care they have bestowed on his initiation, and no Eleusinian or other Mysteries were ever more creditably mastered. The Poem of "SAUL" is the greatest work which Mr. Heavysege has as yet attempted, and it is a bold attempt, but certainly not an unsuccessful one. Hear in regard to it a not unfriendly voice from the *Athens* of our time, but not the *Athens* of King Otho :

"Saul is in three parts, each of five acts,—altogether about 10,000 lines long. In it the greatest subject in the whole range of history for a drama, has been treated with a poetical power and a depth of psychological knowledge which are often quite startling, though we may say, inevitably below the mark of the subject matter, which is too great to be done full justice to, in any but the words in which the original history is related."—(*The North British Review*.)

We cannot fail to be edified by this last remark. And we must always respect the views of those who think that Scripture subjects can be fitly treated only in the language of Scripture. At the same time, we cannot allow ourselves to forget that there are some in the world who have no relish for the higher Poetry of Holy writ. This may be perhaps, (and why not pass on all a favorable judgment?) because it cannot be enjoyed in its pristine beauty of style, measure and harmony. What forbids that such minds should be reached and won by the fascination of verse and rhythm that are suited to the modern ear?

It is impossible to convey an adequate idea of such a Poem as "SAUL," by a short quotation. One might as soon pretend to shew the nice proportions, the solid mason-work and rich architectural decorations of a spacious and elegant edifice, by exhibiting a brick. You will not, however, be displeased if I read a few lines from which you will learn how the Poet represents the unfortunate Monarch contending with his evil genius.

SAUL TO MALZAH.

Creature begone, nor harrow me with horror!
Thine eyes are stars; oh! cover them, oh! wrap
Them up within thy cloudy brows: stand off,
Contend not with me, but say who thou art.
Methinks I know thee,—yes, thou art my demon,
Thou art the demon that tormentest me.
I charge thee, shy, mysterious visitant,
At whose behest thou comest, and for what
Offences deep of mine: nay, nay, stand off;
Confess, malicious goblin, or else leave me;
Leave me oh! goblin, till my hour is come:
I'll meet thee after death; appoint the place;
On Gilead or beside the flowing Jordan;
Or if parts gloomier suit thee, I'll repair
Down into Hinnon or up to the top
Of Horeb in the wilderness, or to the cloud—
Concealed height of Sinai ascend,
Or dwell with thee 'midst darkness in the grave.

Besides the Poem of "SAUL," Mr. Heavysege has written "COUNT FILIPPO, OR THE UNEQUAL MARRIAGE," a drama in five acts, "JEPHTHAH'S DAUGHTER," and "JEZEBEL," which last appeared in the January number, 1868, of the "Dominion Monthly." You will hardly believe that such a poet could descend, if indeed he can be said to descend, from the lofty style of the Drama, to the writing of a sonnet. Such is the fact, however. But he has taken care not to leave his style behind. Hear a specimen:

WINTER NIGHT.

The stars are setting in the frosty sky,
Numerous as pebbles on a broad sea-coast;
While o'er the vault the cloud-like galaxy
Has marshalled its innumerable host.
Alive all Heaven seems: with wondrous glow,
Tenfold refulgent every star appears;
As if some wide celestial gale did blow,
And thrice illumine the ever-kindled spheres.
Orbs with glad orbs rejoicing, burning beam
Ray-crowned, with lambent lustre in their zones;
Till o'er the blue bespangled spaces seem
Angels and great archangels on their thrones;—
A host divine, whose eyes are sparkling gems,
And forms more bright than diamond diadems.

Miss JENNIE E. HAIGHT enjoys great popularity, and not undeservedly among Canadian readers of Poetry. I am not aware that this lady has written any Poem of great length. But her very numerous poetical compositions have appeared in almost all the newspapers of the country as well as other periodical publications. I cannot better impart to you an idea of Miss HAIGHT'S merits as a poetess, than by quoting Mr. SANGSTER'S enlightened appreciation of them.—"There is a genuine womanly sincerity, womanly feeling, and deep sympathy with all that ennobles our nature, in her thoughtful strain; there is a largeness of heart, and a burning desire to assist the fellow-traveller over the rough and intricate paths of the wearisome journey of life." Mr. DEWART, no incompetent judge, is also an admirer of Miss HAIGHT'S poetry.

Mr. DEWART himself (THE REV. EDWARD HARTLEY DEWART) must not be passed over without honorable mention as a poet. The cause of the Muses would be largely indebted to this accomplished gentleman if he had done nothing more than favor the Canadian public

with his "SELECTIONS." He has been singularly judicious in his choice of pieces for quotation; and he often adds critical remarks, always in good taste, which tend to complete what his selections, necessarily few, could only in part accomplish,—the important work of leading the uninitiated to a knowledge of Canadian poetry—of imparting the information so much needed in many places, that there are even in Canada, hitherto reputed "the back-woods," at least a few Poets whose compositions would have conquered for them literary renown in lands where letters were in honor centuries before this 'DOMINION' of British North America had a place or name among the peoples of the earth.

I have not had an opportunity of seeing much of MR. DEWART'S own Poetry. What I have seen is of a high order—elegant and classic. The volume of poems which he is preparing for publication, will no doubt, confirm this view of his literary accomplishments and poetical ability.

A lady who sometimes uses the *nom de plume* of TIBBIE WALKER, but whose real name I am not at Liberty to communicate to you, has contributed to the Canadian periodical press, some very beautiful pieces of poetry. She possesses the faculty, now rare, of writing in the Scottish dialect as well as in classical modern English. She was awarded the prize a year or two ago, by her fellow-countrymen of Montreal, for her Poem in honor of Hallowe'en when there were, if I remember well, about thirty competitors, and surely not undeservedly whether we consider the versification which is flowing and harmonious, or the fine feeling and elevated sentiments in which the composition abounds. A stanza or two, I am confident, will not prove unacceptable:

.....

We'll no repine tho' summer's fled,
An' loud the tempests blaw;
For ither joys aye tak the place
O'them that wear awa.
A great assemblage I behold,
The like O't's seldom seen;
For Caledonia's sons are met
To haud their Hallowe'en.

.....

Oh Scotia dear, my native land!
Where-e'er thy bairns may be,
Gin joy or sorrow is their lot,
Their hearts aye warm to Thee.
Land O' wild glens and heather braes
Whar kilted clans hae been.
Land O' Romance and droll auld freaks
That mak a Hallowe'en.

Whar Lassies lilt the legends O'
Ilk castle stern and gray,
Whar warrior Knights lang laid at rest,
Wood Leddies fair and gay;
Whar monie a dale an' lonely muir
Has been a battle scene.
Sic are the aft told stories O'
The land O' Hallowe'en.

An' Canada, we lo'e ye—tho'
Traditions auld as these,
Ne'er tint wi' varied hues your scenes,
As Autumn tints your trees

Your plains are broad, your forests deep
An' happy hames they've gien
To mony a hardy pioneer
Wha there hauds Hallowe'en.

Nae Wizard O' the North has yet
Amang your sons been found,
To tread a while your rugged paths,
Then leave them classic ground.

Nae Ploughman Bard has o'er your Lakes
Thrown Fancy's magic sheen.
Auld superstition shakes her head
To view our Hallowe'en.

She boasts few records O' the past,
 Few deeds O' wondrous Fame;
 But Canada's the land O' hope,
 She yet will win a name;
 An' when her day's O' grandeur come,
 (By us they 'll no be seen)
 We trust her bairns will ne'er forget
 To haud their Hallowe'en.

The allusion to the Atlantic Cable is particularly nice and there is something more than patriotic feeling in the concluding lines.

An' now anither link is forged
 That binds us to our hame;
 Th' Atlantic cable's tethered fast,—
 Despite the stormy main,
 An' ilka day the news is flashed
 The auld an' new world atween;
 It micht hae let us ken gin frien's
 Are haudin Hallowe'en.

We may forget the bonniest face
 Tho' it smiled on us yestreen;
 But we'll ne'er forget our native land.
 Nor dear auld Hallowe'en

ROBERT G. HALIBURTON son of the late celebrated Justice HALIBURTON M. P. of Nova Scotia, (better known as the author of *Sam Slick*) has an undoubted claim to be classed among our Canadian poets. This accomplished gentleman has written more philosophy than poetry. But, I am far from saying that he is more a philosopher than a Poet. His merits in both capacities are beyond dispute, and will yet be more generally appreciated when he chooses to come more prominently before the public. The very titles of some of his works make it apparent how admirably his mind is adapted for philosophical research, and an attentive perusal of them will show that he has not meditated and enquired to no purpose. No doubt our Christian Faith instructs us as to the unity of the human race. But in these our days, there are not wanting men, and men pretending to science too, who do not accept the testimony of our sacred books. Will they alike reject the witness of all history,—of all antiquity? or, will they be able to set aside the reasoning and the conclusions deduced by such men as Mr. Haliburton, from the customs, convictions and practices universally prevalent in ancient as well as more modern nations? If it be found that there are Kalendars and Festivals, particularly "*The Festival of the Dead*," common to all nations, there are few who will deny that these extraordinary coincidences point to a common origin. It would be no great proof of science to pretend that there are no such things. Nothing will be further from the minds of truly scientific men, than to despise the researches of such a writer as Mr. Haliburton. But it is as a poet only, that I can at present consider this distinguished author. He has not, as yet, written much poetry. But, in what he has written quality makes amends for quantity. And besides, that public, which delights in fine octavos and respectable library volumes, has nothing to do with the matter. Mr. Haliburton has not given any of his poems to the public. And if I am now able to tell you anything about them, it is because I have been favored with a reading of a small collection of some charming compositions which have been printed only for private circulation. When these poems are widely given to the world, critics will discourse learnedly on their elegance, pathos purity of sentiment and correct versification. In the meantime, you may take my word for it, that they possess all these qualities. I shall not attempt to say with what delight I perused them, or how much I regret that they are not more numerous. But a writer who is so obviously endowed with the genius of Poetry, and who is skilled in the art of expressing his poetical conceptions with truly classic taste and accuracy, will not cease to seek the favor of the Muses, until they have placed him in the highest niche of the Temple of Fame. Mr. Haliburton was born in 1833, and may yet have time, (I for one most sincerely hope that he will), to compose a great poem,—an Epic that will do honor to our nascent Literature. The most fastidious critic could not require that, it should be more correct or more beautiful, than those lesser Poems, the secret of which I am communicating to you. There is no kind of verse that Mr. Haliburton does not handle with facility,—none that does not afford ready and apt expression to the inspirations of his muse. The stately numbers of Milton are quite familiar to him. He has used them to good purpose in his

most beautiful Poem "*Found Drowned*." The subject of this composition does not, perhaps, admit of the sublimity of Milton; but in pathos, it is certainly not inferior to anything that you or I have ever read:

FOUND DROWNED.

"Glad to death's mystery
 Swift to be hurled—
 Anywhere, anywhere
 Out of the world"

(*Bridge of Sighs.*)

Summer had fled. The autumn tints no more
 Could mock the dying forests. Dull decay
 Sat brooding o'er the sombre earth. The sky,
 Grown strangely drear, its azure mantle doffed
 For sad attire. Over the red sun rolled,
 Like wintry seas, clouds leaden hued, that merged
 The dark'ning Heaven. The fatal wind awoke
 Moaning as if from troubled dreams. The leaves,
 Like fitting spirits of past summer joys,
 Danced in the fleecy air, then sank to sleep
 In winter's cold embrace; while o'er the scene
 The floating snow its pallid mantle flung,
 Until the town's dark roofs, the sombre firs,
 The russet barrens crimson-flecked, grown pale,
 Fast faded from the view; and all once more
 Seemed pure as when the infant earth first woke—
 And wond'ring watched the dawn—save where black lakes
 Drank up the trembling snow-flakes as they fell
 Unnumbered, and still turned unto the sky
 Their greedy gaze, like monsters of the deep,
 That lurk amid the Ocean's foam, and watch
 With ever hungry eyes. Then jealous night,
 That with her shadowy mantle from the day
 Slow veils the wearied, slumbering earth, in haste,
 As if she feared a fairer rival, rushed
 Upon the tempest's wings. At intervals
 "All's well!" was borne upon the fitful gusts,
 That eddying swept the silent streets. The cry
 Seemed to excite the storm's wild revelry;
 And the snow madly whirled o'er hill and dale,
 Far over surging forests and bleak plains,
 Wreathing with hoary crown the writhing pines
 That strove with their tormentor, and in sport
 Wrestling with oaks that struggled in its arms,
 And groaned unheard. Again with muffled tones
 "All's well!" the watchman cried, and shiv'ring saw
 A form that struggled with the deep'ning snow,
 And wearily plunged on amid the drifts.
 He started as he marked the sullen glare
 That lit her sunken eye, the recklessness
 That dared the wintry tempest. She passed by;
 The wind still howled, and still the mocking sound
 "All's well!" re-echoed through the lagging hours.

The wind may rage without, yet round the hearth
 More closely draws the group. The merry chirp
 That cheers the farmer's fireside, is heard
 More blithely tuning its shrill melody,
 As though it strides with feeble strain, to vie
 With the loud moaning wind. Absorbed and still,
 A child with wonder in its earnest eyes,
 Hears oft-told tales beside its grand-dame's knee.
 Absent, and gazing on the glimmering fire,
 The father silent sits; yet oft he steals
 A tearful look at the long-vacant chair,
 That none is there to occupy, and oft
 The maidens still their mirth, lest it may break
 His mournful reverie. At length the clock
 Reminds him of the hour for prayer; then low
 He bows in supplication, and leads on
 The answering group of youthful worshippers:
 Now asking Heaven for blessings on the head
 Of those that journey far o'er land and sea,
 And in compassion to earth's erring ones,
 "To raise up them that fall;" but no voice adds
 Responsively, "Amen." With breathings hush'd,
 Each wond'ring strives to catch once more the sound
 Of the deep groan, that brought their prayer-winged thoughts
 From Heaven to earth again. They listen long:
 Hark! now it comes once more. No! 'Tis the moan
 Of the complaining wind. Again he kneels
 To urge the earnest prayer, and to invoke
 For each around a blessing from on high;

And now his deep voice trembling breathes the name
Of one who is not there, when shrinking close
To its fond mother's breast, the frighten'd child
Hiding its face, in silent terror points
At the strange eyes, that, wildly gazing in,
Glare through the snow-wreathed window.
All look up, and see a haggard, startled face recede,
And vanish in the darkness. From his knees
The father wildly rushes 'mid the storm,
And seeks the wanderer. In vain! The snow
Whirling in chilling wreaths, shuts out the view,
And blinds the eager gaze. He calls her name,
And fondly bids her welcome back again;
But list'ning, hears no answer, save the voice
Of the rude blast that raises up on high
Its howl of mockery. Now when a lull
Comes o'er the tempest's breathings, he again
Wastes his wild cries upon the muffled air:
The dulled tones soon unheard, are drowned beneath
The rising surges of the wind. He sighs,
And silent, long he doubts: "It is not she,
So frail! so gentle! She could never brave
A night like this, when even the forest beasts
Shrink shiv'ring to their deepest lairs. Oh no!
It was a waking dream. The name we breathed,
Has conjured our lost loved one back again;
Or she is not, and her poor spirit seeks
The home of early innocence." He marks
That all around him seemed to strive with death.
The hemlocks shudder 'neath their snowy shroud,
As though they mourn earth's wintry sleep: the first
Rock to and fro, as though they feel his grief,
And wail the hapless wraith. Reluctantly
He homeward turns his lingering steps; yet oft
He pauses on his way to gaze again
Through the thick night. Again he wildly calls
Her name, then listens to the forest din
As the trees battle with the storm. At length
He slowly shuts the door. The drifting sleet
Beats on the frozen windows, and the wind
Still sings its ceaseless dirge.

None heed the form
That struggles down the narrow path and stops
Where the black stream moves silently along
Beneath the forest's bending boughs: none hear
A voice, that mingled with the forest's wail,
Now raised aloft to Heaven, now sinking low
Into a murmuring sigh:

"This is the spot!
I know it well. Fit resting place for me!
I'll lay my load of sin and sorrow here;
And from life's heavy chains at length shall burst,
And free my wearied spirit. Here at length
I'll cease to think—to be. No more I'll sue
For slumber's sweet forgetfulness in vain!
Oh cruel sleep, thou partial visitor!
Unasked thy drowsy wings are wont to fan
Joy's lazy lids, yet shun the aching eyes
Of waking misery. A heaven art thou
To wearied souls whose hell has been on earth.
I will not wait thy wooing, but will burst
Into thy home of endless dreams; no more
Shalt thou escape me; I will hug thee close
For ever to my longing breast. I come!
Welcome, sweet sleep!"

.....
The waters closed around
And silently flowed onward. And the wind
Stilled its loud breathings, as though fain to hear
The breaking heart throb 'neath the agony
Of dissolution, and the fevered pulse
Beat wildly as if struggling to elude
Death's cold, congealing hand. Beneath the veil
Of misty clouds, the stars peeped out,
And saw no form amid the darkened deep,
Save their own image. And the Pleiades
Clasped in each other's arms, mused mournfully
Upon earth's erring daughter, and recalled
Their own lost sister, that had strayed and fallen
From 'mid her kindred stars. And now the frost
Breathing upon the stream, with silent chains
Stole o'er the waves, and in their ice-bound depths
Long held the wearied sleeper; and when months
Had rolled upon their course, and the warm winds

Of spring had loosed the waters, a pale form
Was borne far on their bosom, and was laid
By stranger's hands within a nameless grave;
But still the vacant chair, that once was hers,
Is placed beside the hearth; and still the prayer
Is breathed for her, the loved one and the lost.

The late JOHN BREAKENRIDGE, a Barrister of the Province of Ontario published a volume of Poetry (327 pages) entitled "*The Crusades and other Poems*" (1).

One of our ablest critics, Mr. Dewart, says that "the compositions of this Author are distinguished by martial and chivalrous sentiments." This is worthy of a Poet, and essential especially to a Poet who undertakes to celebrate the Crusades. I would add that he also shews great power of imagination, and that his versification is flowing and correct, and in the true style of epic Poetry. The following passage from "*Napoleon Bonaparte and the French Revolution*," will enable you to judge for yourselves. The Poet in describing the passage of the Beresina so fatal to the fortunes of Napoleon, concludes with these magnificent lines:

Onward! still on! for now before their view
The sullen river rolls its darkling flood;
The clang of war behind them bursts anew;
No time have they o'er sad defeat to brood.
Onward, o'er dying friends so late who stood
The sharers of their toil—for life, for life,
The madd'ning race begins! in that dark wave,
With every horror fraught—with danger rife,
Who dreamt of kindred ties, or felt sweet friendship's power?

And fast, and wild, in gathering crowds they come;
And shrieks and groans from out that mingling mass
Tell that the anguished spirit wingeth home
Its weary flight! They win that narrow pass,
But ever and anon the thund'ring bass
Of guns that, rumbling in the distance, boom—
Waking to one continuous peal! alas!
Is there no hope for that once victor host?
The despot's arm, earth's scourge, and Gaul's triumphant boast?

None! For the tempest-breath of heaven awakes,
And darkly green the swollen waters flow;
The Wintry blast upon them coldly breaks—
The rear guard yields to the victorious foe!
It heaves,—it yawns—O God! with one dread throe,
The crowded bridge beneath the pressure shakes,
And thrice ten thousand souls are hurled below
Into that "hell of waters," fierce and strong,
Whose waves relentless bear the flower of France along!

Ay! and her vine-clad valleys long shall hear
The voice of mourning for her sons who lie,
Thrown by the sated wave on deserts drear;
And long shall ring "that agonizing cry,"
And haunt his dreams when none to soothe is nigh!
And fortune flown shall thunder in his ear
'Mid Courts and Camps—the worm that ne'er shall die;
And tell to every age like Heaven's own wrath,
The vengeance dire that waits on the invader's path!

That accomplished scholar, MR. GANE, better known in Canada,

(1) The author himself feels that this title is not the most appropriate; and he does not do himself justice in adopting it. "The Crusades" are not a Poem, but a series of Poems, or detached pieces bearing relation to the great subject of the Crusades, such as "The Battle of Dorylœum," "The Crusader's Hymn before Jerusalem," "The Siege of Antioch," "The Troubadour to the Captive RICHARD CŒUR DE LION," "The Battle of Tiberias," "The Amulet"—"Orient Pearls," indeed, but, "at random strung," and by no means a consecutive epic poem, although decidedly belonging to the epic style of Poetry. The author in his preface apologizes, for what a too rigid critic might call *setting sail under false colours*, by informing his readers that his greater Poem "LAÏZA," a Tale of slavery in three Cantos, remained unfinished when the Prospectus was published.

It may be objected to this beautiful Poem, that it is all in octosyllabic lines. It must in justice, however, be admitted that they are the best which have appeared as yet in a Poem of equal length. Now that the Abyssinian expedition has accustomed us to read of things barbaric and Ethiopian, this finely written tale must afford great pleasure to the English reader, and he will be delighted to find that the heroic Laïza meets with a destiny very different from the richly deserved fate of the cruel and blood-thirsty King Theodore.

as "*The Lowe Farmer*" has contributed many elegant and truly classical pieces of verse to the periodical press of these Provinces.

MISS MARY ANN McIVOR of Ottawa, MR. LETT, the City Clerk of the Canadian Capital, and MR. CARROLL RYAN of the Ottawa *Volunteer Review*, a native of Toronto, have given proof of a poetical mind, but have not, as yet, published so extensively as to attract general attention, or to command that of the critics who are, to a certain extent, the exponents of public opinion.

(*The French Canadian Poets in our next.*)

Latin Version of a Popular Song.

We present for the delectation of our classical readers the following stanzas in which a well known and popular song has been rendered into Latin verse. Who the paraphrast is we know not, but he signs himself J. S. W., in the London *Educational Times*, from the December number of which we extract the verses. The moral of the song itself, the words of which we append as now commonly sung by our Canadian Youth, with whom it is a decided favourite, is so excellent that we offer no apology for its reproduction in our columns.

CYMBAM REGAS IPSE TUAM.

Per varios casus mihi contigit usque vagari,
Per varias turbas heu! mala multa tuli;
Sed mihi vita fluit semper gratissima, quando
Mi propriam cymbam propria dextra regit.

2

Haud egeo multis, nec quid mea pectora vexat,
Debita si tantum solvere cuncta queam;
Et strepitus fugio, commota per æquora vitæ,
Dum propriam cymbam propria dextra regit.

3

Nulla mihi conjux, quæ litibus omnia turbet,
Nullaque, quæ pactam fallat, amica, fidem;
Perque diem totum, dum ridens carmina canto,
Mi propriam cymbam propria dextra regit.

4

Occiduum ad solem, ex horâ quâ surgit alauda,
Assiduum perago, quæ peragenda, manu;
Non ego divitias cupio, si sit modò robur
Quo propriam cymbam propria dextra regat.

5

Haud nocet interdum certo confidere amico,
Si tibi reverâ certus amicus erit;
At tibi res melius multo, mihi crede, gerentur,
Si propriam dextram propria cymba regat.

6

Empta tibi constant, quàm mutua sumpta, minoris:
Hoc vetus est carmen; sed tibi vera canit;
Nunquam tristis eris, si vi conabere summâ
Ut propriam cymbam propria dextra regat.

7

Si consurgat hyems, cum sol medio axe coruscat,
Et nitidum condunt nubilâ densa diem,
Tu tamen in rectum pergas, tu lumine certo,
Et propriam cymbam propria dextra regat.

8

Aspice quot flores decorant viridantia rura!
Hæc tibi (sic libeat credere) rura nitent:
Sic tibi spes adsit semper, cura omnis abesto,
Dum propriam cymbam propria dextra regit.

9

Teque ut amas ipsum, tibi sic vicinus ametur,
Mortales inter dum brevè tendis iter;
Nec tibi deturpent rugæ, nec lacryma, vultum,
Sed propriam cymbam propria dextra regat.

PADDLE YOUR OWN CANOE.

1

I've travell'd about a bit in my time,
And of troubles I've seen a few,
But I've found it best in every clime
To paddle my own canoe.

2

My wants are small, I care not at all
If my debts are paid when due;
I drive away strife in the ocean of life,
While I paddle my own canoe.

3

I have no wife to bother my life,
No lover to prove untrue,
But the whole day long, with a laugh and a song,
I paddle my own canoe.

4

I rise with the lark, and from daylight till dark
I do what I have to do;
I'm careless of wealth, if I have only health
To paddle my own canoe.

5

'Tis well on a friend now and then to depend,
That is, if you've proved him true;
But you'll find it better by far in the end
To paddle your own canoe.

6

To borrow is dearer by far than to buy,
A maxim, though old, still true;
You never will sigh, if you only will try
To paddle your own canoe.

7

If a hurricane rise in the mid-day skies,
And the sun is lost to view,
Move steadily by, with a steadfast eye,
And paddle your own canoe.

8

The daisies that spring in the bright green fields,
Are blooming so sweet for you;
So hope for the best, and drive care from your breast,
While you paddle your own canoe.

9

And love your neighbour as yourself
While the world you go travelling through,
And never sit down with a tear or a frown,
But paddle your own canoe.

SCIENCE.

The Primeval Flora.

Principal Dawson's Lecture before the American Institute.

The fifth lecture of the course of scientific lectures before the American Institute was delivered by Principal Dawson of the McGill University of Montreal, and was illustrated by a series of charts representing the vegetation in the periods of the earth's history before the creation of man, as revealed by their fossil remains.

Principal Dawson said:— An eminent authority has defined geologists to be a class of amiable and harmless enthusiasts, who are happy and grateful if you will only consent to give them an unlimited quantity of that which to them has perhaps, the most value of all things, namely, past time. I confess to this definition of geologists, so far as my subject of this evening is concerned, for I shall have to make a large demand upon your faith as to the extent of the past time, and shall have to ask you to give me all of it that you can, reasonably and conscientiously. Geology, indeed, works strange revelations in views of things, new and old. The primitive forests, and even the gray rocks and hills themselves, are things not primitive and unchanging, but things, comparatively, of yesterday, the successors of olden forests and olden rocks that in dim and ghost-like procession recede from our view into the past of an antiquity, compared with which all human antiquities are things

of yesterday. The murmuring pines, and the hemlock, bearded with moss and in garments green, indistinct in the twilight, may stand like Druids of old with voices sad and prophetic, but they belong not to the forest primeval of the earth's younger days, though they may point backwards to perished predecessors of truly old date, of truly primitive and geological antiquity. It is to them that I must try to carry you back in imagination this evening, to awaken those slumbering ages and make them green in your eyes and vocal in your ears. Transferring our thoughts to these old forests, and imagining their strange fantastic forms, and the singular creatures that lived beneath their shade, we shall find ourselves in a new world different from that which we inhabit, and differently peopled. Could we marshal in one view four or five planets, each clothed with the peculiar flora, and inhabited by the peculiar fauna of a distinct geologic period, we should truly have before us so many distinct worlds with nothing to connect them with each other save only certain similarities of plan and conception. But when we view these several worlds as successive, and destined the one to prepare the way for the other, we can perceive relations of the most remarkable and unexpected character, and have presented to us a long, protracted scheme of creation, too vast to be contained on the surface of our planet at any one period, and representing with our present flora all the possibilities of vegetable existence, and all the uses, present and past, which plants can serve. I have selected as the subject of this lecture one small department of peculiar interest as relating to the oldest known plants, and which, as a special and favorite study of my own, I must endeavor to make attractive to you. But I must not rest contented with this, but in justice to the subject must try also to present it in an orderly and systematic manner. I must endeavor to give you something like a connected sketch of that primeval flora which is the subject of this lecture; and 1st, in order to do this, I must say a few words on the relations of their primeval flora to existing plants; 2nd, I shall say something of their relations to the geologic time; 3rd, I shall enter upon the subject proper by describing to you some of the more remarkable plants that flourished in that primeval age; and 4th, I shall conclude with noticing some of the uses of this primeval flora to us, the practical use it serves to our present race; and I shall endeavor to give you if possible, some idea of the light which geology gives us as to the first appearance of plants on our planet, and how far back they can be traced in geologic time. First, then, I shall speak for the benefit of those who may not have pursued the study of botany, of the relations of existing plants, and the relations of the fossil flora to them. Taking the whole of the plants known to us, we shall find upon examination that they may all be divided into two great series: first, the series of plants in which we observe distinct flowers, and fruit containing seeds proper, seeds with the embryo of future plants. These are the highest plants, and constitute the phænogamous plants of the botanist. Then we have a great class of plants of a lower and humbler organization, which are destitute of true flower, and which, instead of producing seed, produce little microscopic spores. These are the cryptogamous plants of the botanist. The whole vegetable kingdom is divided into these two great classes. Now, taking the first, phænogams, we shall find three classes of them. We have, first, that group of plants to which all our trees and shrubs and the greater part of our cultivated plants and weeds belong, — the exogens which have a distinct pith, and wood, and bark. This is the highest group. Then we have a class in which there is no distinction of wood and bark, represented in the tropical regions by the palms, and in our climates by some of the grasses. These are the endogens. And, lastly, we have a class in which the pith, bark, and wood are all composed of similar material, — the gymnosperms, represented here by our pines and in the tropical region by the sago. Thus the phænogams are divided in three groups, represented respectively by the oak or maple tree, the palm tree, and the pine tree. In the cryptogams, we may also make a threefold division, — the acro-

gens or ferns and club mosses; the anophytes or the common mosses; and the thallophytes or lichens, fungi, and seaweed. Next let us see what relation the primeval flora bears to those of modern times. The relations are possible: First, that the primeval flora may belong to a different classification altogether; and second, which is the true supposition, that the whole flora of the earth, from the earliest geologic times, comes under classification. This shows that, from the beginning of geologic time, one plan has been followed out in the construction of the vegetable kingdom, and that the whole vegetable kingdom, consists not of the plants now living upon the earth, but includes all the plants that have ever lived upon it.

Again, there is another possibility, that the primitive flora may include representatives of all our modern classes of plants, or only some of them. The fact is, that it includes mainly representatives of some of them, and those of a medium grade, neither the lowest nor the highest, so far as the land flora is concerned. The fossil plants are not chiefly exogens or endogens, but gymnosperms. On the other hand, the acrogens, or the highest group of the cryptogamous plants in our day, were then the most abundant. The primeval flora therefore embraced the higher cryptogams and the lower phænogams. If we had known nothing of vegetation but that manifested by the primeval flora, we should not have known the possibilities of the vegetable kingdom, either in its highest ranks or its lowest ranks, but only in the middle of the scale. Next let us glance at the relation of the primeval flora to geologic time. The oldest rocks we know, the eozoic, have afforded no plants at all, so far as we know. The next stratum, the palæozoic, includes the oldest land plants we know. But in the mesozoic period we arrive at a different flora, and in the cainozoic, or modern period, we have two other floras. It is the palæozoic flora only of which I shall speak to-night. During the whole of the palæozoic period, the seaweeds have existed. In the earlier periods the classes of acrogens and gymnosperms far exceeded the exogens and endogens, while the reverse is the fact at the present day. The warm and moist climate of portions of the southern hemisphere at the present day now have a flora more nearly resembling the early epochs than any other portions of the earth. The uniformity of the flora of that early period indicates a temperature nearly uniform throughout the earth. At present we have in our atmosphere but a small quantity of carbonic acid gas. If we had more, it would tend to make the climate more uniform, by preventing the radiation of heat from the earth. The carbon locked up in our coal mines, and then existing in the atmosphere, may therefore have been at least one reason for the uniformity of climate on the earth in the palæozoic period, the flora of that day, indicating a warm and moist climate. Next, looking to the flora of the plants we will turn to the carboniferous period, when there was a vast amount of vegetation, afterwards made fossil and becoming coal. In that moist, warm but unwholesome atmosphere, we find the sigillaria or sea-tree, — one of those most abundant in the swamps of the carboniferous period. Here we have a large tall stalk, without branches, covered with large leaves; or perhaps divided into a few branches. We have remains showing the ribbed structure of the stalk, and the scars of the leaves. There are no trees in our latitude resembling it in structure. We know of the fruit of the sigillaria only by the abundance of a certain nut found around them. Trees of two and three feet in diameter were not uncommon. The root of this tree is more remarkable even than its stem, having attracted the attention of geologists before the stem, and obtained the name of stigmaria. These roots are bifurcated and spread out in a remarkably regular way, all the little rootlets spreading as regularly as leaves. These roots occur very often in the coal formation without the stems; and at first it was supposed that they were the whole of the plant. The first process in the formation of a bed of coal was usually the growth of a forest of sigillaria. The next class of plants is the calamites. Some one called upon a botanist, and said he had been shown his "calamities and felici-

ties." Those calamities were the calamites. They seem to have grown on muddy flats along the margin of the sigillarian woods, resembling brakes or mares' tails; and they are still preserved in coal formations in large numbers. The calamites seemed to have preserved the sigillarian forests from the effects of inundation by causing the mud to settle before the waters passed into the forests. The calamites thus contributed very much to the purity of our coal beds. The next plant is lepidodendron, or scale-tree, of a size equal to the sigillaria, resembling our ground pines or club-mosses. This tree was more plentiful in the earlier coal formations than in later periods. Other plants, also found in beds of coal, were described by Prof. D., and drawings of them shown upon the charts. The plants of the carboniferous period would have presented to our eyes a very monotonous appearance; for it was characteristic of the flora of that period that there was a large number of species but few genera. There were also some plants more familiar to our eyes. The ferns are to be found in the coal bed, preserved as beautifully as they could have been preserved in an herbarium. They resembled more closely the ferns of New Zealand or the Hebrides than the ferns with which we are familiar. Some of those ferns grew to the dignity and beauty of the palm tree itself. One species was peculiar, having only two leaves at a time. We find sometimes in the coal beds things looking like enormous brooms, which are tree-ferns, with roots sent out to straighten the stems. We also find in the coal formation varieties of pine, the wood of which much resembled our modern pines. It is remarkable that the pine is very widely diffused at the present day; and it is not wonderful, therefore, that they should have existed in the carboniferous period. Those pines have features more nearly resembling those of Australia and New Zealand than those of our climate. When wood is buried in the earth, and its cells filled with water holding silica or lime in solution, they become filled with stone and the wood becomes coal; and this is the form in which we find these fossil remains. By removing the mineral, we can observe the vegetable structure of the plants, and determine their character. Next to the soil on which we tread, the most valuable substance we have is mineral coal, which is derived from the plants of the carboniferous period. A bed of coal is usually composed of the remains of the trunks and bark of sigillaria trees. Examining coal with a microscope, after preparation, we can see the structure of the wood from which the coal was derived. Of eighty-one distinct seams of coal in Nova Scotia, every one but two or three had sigillaria, either in the coal or immediately above or beneath it. The top of a coal seam is merely the débris of the last forest that grew on the swamp where the coal was produced. Great Britain annually consumes 100,000,000 tons of coal, and we know of nothing that will supply its place. The consumption of coal in America is already equal to the labor of 150,000,000 horses, and our coal-beds are as yet hardly opened. All this power is extracted from the sunbeams of the palæozoic period. What did these magnificent forests grow for? There seem to have been no higher animals to enjoy them. We know of no birds that lived among their branches. We know of a few insignificant reptiles that crawled beneath them, but we know of nothing higher in that age. What were they created for? For two great purposes. First to purify the atmosphere, so that it might be made suitable for the higher animals that were to live in a future geologic period; and the very process of purifying the atmosphere was made the means of laying up those enormous stores of fossil fuel upon which so much of our modern civilization is based. See how grand are the economics of nature, preparing far back in geologic periods before men existed, for the existence of the present state of the arts in the world. Next to the coal, in its value, comes iron; and although we are not so dependent upon the coal formation for iron as we are for coal, still we get an immense quantity of iron from the carboniferous rocks, accumulated by the agency of these very plants; for as they went to decay, and were converted into coal, they

helped to gather together the particles of iron out of the clays and sands, and to store them up for us in beds of iron ore. Therefore we owe to the growth of those old forests not only our coal, but a large portion of our iron. And whether we look to the value of the coal in boiling the tea-kettle, of which Prof. Silliman spoke to you in the last lecture, or to the use of the iron which makes our iron horse, and the steam engine of our factories, we owe it all to the primeval plants, or rather to the Maker and Creator of these old plants. Now let me trace these plants a little further back than the period of the coal formation. If we go back from the carboniferous rocks to the Devonian, we shall find a different flora, which no doubt helped to purify the air, and prepare the world for the carboniferous flora. We have in Canada a bed of coal two or three inches thick, belonging to that epoch, and it is the only one I know of in America. In this drawing, some of the plants of that period are represented; and here you find the sigillaria, the lepidodendron, the calamites, the pines, &c., as in the latter period; so that you see that the Devonian flora was really not very different from that of the carboniferous period. The species are mostly different; but the generic forms are the same. As a whole the Devonian flora may be characterized as less massive and magnificent, more delicate and slender in its proportions; not less beautiful, but less useful perhaps in the accumulation for us of vast stores of fuel. If we go down below the Devonian rocks into the Silurian, we find a few plants; but in the lower Silurian formation we hardly find any trace of plants. Nearly all the rocks known to us of that age were marine rocks. Prof. D. was not hopeless of the eozoic period even. We have as yet found no plants there; but we have found caroon. We have found plumbago; and even in later formations the remains of plants have sometimes been converted into black-lead. We have immense quantities of graphite or blacklead in the eozoic strata occurring in beds, so much as to resemble the remains of plants. They may have been sea-plants. If they were land-plants we may guess what they were,—anophytes and thallophytes, gigantic mosses and gigantic lichens. If we were to walk among those ancient forests of mosses, if they really did exist, we should be in a world something like what this would appear to an insect creeping upon the mosses of our woods. I have given but a faint outline of a great subject, on which treatises might be and have been written, which would afford the material for a course of lectures more interesting than a single one can possibly be. The chief interest of the subject, no doubt, is to the botanist and geologist. The vegetable kingdom now is the most beautiful and most varied, especially when we look at it as presenting forms of plants adapted to every climate and every situation upon the earth, all of them finding their proper place and there own due season. But the subject before us carries us back into geologic times, and shows us a plan too large to be realized on one earth. The plan of the Creator was so vast that the whole surface of the earth was not big enough to hold it. It required a series of earths, one after the other, to develop it, just as it has required a series of ages to develop the history of the human race. We have in these old plants something that adds enormously to the variety of the vegetable kingdom; something that shows us how small is our own knowledge, and how great and capable of extension is the plan of the vegetable kingdom. And when we consider further that we know of these fossil plants only what their remnants have taught us, it affords a widening field of wonder and of thought. As it is more interesting to the botanist to go out and collect plants for himself than to study them in the class-books, so this subject is of the deepest interest to those who will examine the primeval flora and the coal formations, who will split open the rocks and see the forms that no one ever saw before, and perhaps make discoveries of facts which the world never knew before concerning that remote period of time. I must plead guilty as a fossil botanist,—I mean a botanist studying fossils,—to having the deepest interest in this subject. And it arises in part from the very fact that different names are sometimes given to the same plant,—as the

tree is called sigillaria, the root stigmara, and the nut still another name; and it requires much observation and study to discover and to show that these different names all belong to what was really one and the same plant. As our knowledge increases, we may be able to dispense with many of those old names, which is more than can be said for modern botany. What would we have been without these old plants, without this great provision made for us in primitive times before man existed upon the earth? These plants form a part of the same plan to which we belong, and undoubtedly that plan existed at the time these old palæozoic plants grew. And not, I may say, even in this Christmas time, as we gather round the hearth, although our coal fire does not roar and crackle and blaze like the old yule log of our ancestors, yet the trunks of our old sigillaria, burning upon our hearths to-night, send forth a quiet, kindly glow, befitting their great age and long burial in the earth. And the happy hearts that gather around the Christmas fireside may thank God that we have had these great stores prepared for us in the times of old, and that we have hearts and minds fitted to enter somewhat into that great plan which stored them up, and for the enjoyment in a measure even of the beauty of the plants that lived so long ago.—*Daily News*.

A R T.

The Albert Memorial Chapel.

Within the last few days several of the grand marble *tableaux* executed in inlaid work by Baron Triqueti, and intended for the decoration of the Albert Memorial Chapel, have arrived at Windsor Castle. Two of these beautiful works of art have been placed in their proper position on the south side of the interior of the chapel. The first to be noticed is that contributed by Her Royal Highness Princess Louis of Hesse (Princess Alice of Great Britain and Ireland.) The subject is Pharaoh creating Joseph Viceroy of Egypt. The Egyptian King and Queen are represented sitting upon a throne in the palace, and the monarch is placing a jewelled chain and badge around the neck of Joseph, while an attendant officer is arraying the newly created Viceroy with a mantle. Under the throne are these words: "According unto thy word shall my people be ruled. Only in the throne will I be greater than thou." The dresses of the four figures and the architecture of the palace show a careful study of the early Egyptian costume and style of building. The picture is set, as it were, in a frame of costly coloured marbles. In the upper part of the border is a beautiful medallion portrait of Princess Louis executed in white marble, and around it, in gold letters upon a black ground, are the words: "Alicé ætat. s. xxx." Immediately beneath the *tableau* itself is a medallion representing Joseph in prison, with the motto "Purity and Prudence" below it. The history of Joseph himself is very prettily told in a series of white marble medallions set in other parts of the border; and the portions selected for illustration are those to which the Bible texts, "And they cast him into a pit," "He hanged the chief baker," "He restored the chief butler," and "I am Joseph," refer. Next to Princess Alice's gift is a bas-relief, in white marble, of Ruth gleaning in the fields of Boaz, who stands watching the Moabites gathering the fallen ears. Below the figures is the inscription: "Let her glean even among the sheaves, and let fall also some of the handfuls that she may glean them."—Ruth ii. 15." Underneath the panel is the word "Charity," in golden old English characters. The next *tableau*, upon the south wall, is the offering of the firstborn of the Queen and the Prince Consort. It is the picture presented by her Royal Highness the Crown Princess of Prussia (Princess Royal of Great Britain and Ireland), who with her Royal husband, Prince Frederick Wilhelm, is now a guest at Windsor

Castle. The subject selected for Princess Victoria's *tableau* is "Jacob blessing the sons of Joseph." There is the tent with the aged patriarch seated. Before him kneel the sons of Joseph, and his hands—for he is in the act of blessing them—rest upon them. This touching scene in the early history of Israel is beautifully rendered. The text attached to the picture is, "Behold, I die, but God shall be with you.—Genesis, xlviii. 21." The story of Jacob is shown in a series of white marble medallions, upon the border. Above the *tableau* is a marble bas-relief portrait of Her Royal Highness the Princess of Prussia, surrounded by the inscription, "Victoria ætat. s. xxviii," in gold letters upon a black ground, and beneath it is the motto, "Love and Piety." Only a portion of the Princess of Wales's offering has yet reached the Castle. The medallion portrait in white marble has around it the inscription, "Alexandra ætat. s. xxiii." This, with the other portions of the border, has arrived safely, and the *tableau* itself is shortly expected.

OFFICIAL NOTICES.



Ministry of Public Instruction.

APPOINTMENTS.

The Lieutenant-Governor of the Province of Quebec, by an Order in Council dated 11th December 1868, was pleased to make the following appointments:

SCHOOL COMMISSIONERS.

The following Gentlemen to be School Commissioners for the herein-after mentioned Municipalities:

Grenville, Co. of Argenteuil: Messrs. Daniel Reeves and James Campbell in the room and stead of Messrs. James Campbell and the Revd. F. S. Neive whose terms of office had expired,—the election not having been held within the legal time.

Chénier, Co. of Arthabaska: Mr. Philippe Hébert in the room and stead of Mr. Joseph Décoteau who has finally quitted the Municipality,—the election not having taken place within the prescribed time.

Village of Bagotville, Co. of Chicoutimi: Mr. Jacques Girard in the room and stead of the Revd. Mr. Narcisse Gauvin who has finally left the Municipality,—the election not having been held within the prescribed time.

Ste. Rose, Co. of Laval: Mr. Jean Baptiste Dagenais in the room and stead of Mr. Philippe Gravelle who has finally left the Municipality,—the election not having been held within the legal time.

St. Paulin, Co. of Maskinongé: Mr. Honoré Plourde in the room and stead of Mr. Jean Boucher, deceased,—the election not having been held within the legal time.

Ste. Sophie de Lacorne, Co. of Terrebonne: Mr. John Green in the room and stead of Mr. Alexander McDonald who has finally left the Municipality,—the election not having been held within the legal time.

Grenville No. 3, Co. of Argenteuil: Mr. James McNeal in the room and stead of Mr. John McCallum who has finally left the Municipality,—the election not having been held within the legal time.

Cranbourne, Co. of Dorchester: The Revd. Mr. Patrick Kelly in the room and stead of the Revd. Mr. A. Gagnon who has finally left the Municipality,—the election not having been held within the prescribed time.

DIPLOMAS GRANTED BY BOARDS OF EXAMINERS.

QUEBEC CATHOLIC BOARD.

Session of November 3rd 1868.

MODEL SCHOOL DIPLOMA, (Fr.) 2nd Class:—Miss M. Eléas Chaillé.

ELEMENTARY SCHOOL DIPLOMA, (Fr.) 1st Class:—Misses M. Georgina Gagnon, M. Odile Herménie Lamontagne, M. Sophie Nadeau, and Margaret Cecilia Deehan (Eng.).

2nd Class:—Misses Anastasie Allaire, M. Louise Bédard, M. Caroline Gingras, M. Geneviève Lebrun dit Carrier, M. Délima Eléonore Nadeau, Marie Paradis, and Margaret Cecilia Dechan.

N. LACASSE,
Secretary.

THREE RIVERS BOARD.

Adjourned Session of May 22nd 1868.

ELEMENTARY SCHOOL DIPLOMA, *1st Class*:—Miss M. Charlotte F. L. Girard (Fr. and Eng.) and Miss M. E. Pétronille Bourque (Eng.).

J. M. DÉSILETS,
Secretary.

Session of August 4th 1868.

MODEL SCHOOL DIPLOMA, (Fr.) *1st Class*:—Miss Elise Larivière.

2nd Class:—Misses M. Lumina Bourbeau and M. Hedwige Lacerte.

ELEMENTARY SCHOOL DIPLOMA, (Fr.) *1st Class*:—Misses Philie Baril, M. Victorine Bourk, M. Emma Bourk, M. Cézarine Ebacher, M. Emilie Lefebvre, M. Arthémise Lemire, Louise Lescadre, M. A. Egypte Lanouette, M. Clarisse Lottinville, M. Célinie Massé, M. Flore Plante, Flavie Poitras, M. Rose de Lima Picher, M. Delphine Picher, Virginie Rhéau, M. Virginie Robida, Marie Thirza St. Laurent, M. Philie Thiffreau, and M. Clarisse Tourigny.

2nd Class:—Misses M. Oliva Bellemare, Julie Boisvert, M. Eugénie Châteauneuf, Léocadie Dubuc, Adéline Faucher, M. Edwidge Lacerte, M. Desneiges Lavigne, and Odile Mathon.

J. M. DÉSILETS,
Secretary.

Session of November 3rd 1868.

MODEL SCHOOL DIPLOMA, (Fr.) *1st Class*:—Miss M. Dina Ducharme.

ELEMENTARY SCHOOL DIPLOMA, (Fr.) *1st Class*:—Misses M. L. Boudreau, M. Léa Brière, Marie Cloutier, Eléonore Duplessis, M. Emma Germain, M. Emma Lacharité, Marie Leblanc, and M. Célestine Raiche.

2nd Class:—Misses Adéline Grimard, and M. C. Alphonsine Mayrand.

J. M. DÉSILETS,
Secretary.

THE JOURNAL OF EDUCATION.

QUEBEC, PROVINCE OF QUEBEC, JANUARY, 1869.

Payment of Teachers' Salaries by School Commissioners and School Trustees.

While it is admitted that properly qualified instructors ought to be more liberally remunerated than they generally are, it is obvious that the evil to the teachers themselves must be most vexatiously enhanced when delays occur in the payment of salaries earned. It is difficult to perceive on what grounds School Commissioners and Trustees can set up any rational defence in behalf of a practice which, it is to be feared, is sadly too common, especially in the country municipalities. Sometimes, in defiance of the terms of a perfectly clear and written agreement, the teacher is obliged to wait six months or more for his or her money; and, when at length, the specified amount is forthcoming, it is not unfrequently handed over in *silver*. Complaints often reach the Department of Public Instruction on this subject. We know of cases in which the hopes, long deferred, of receiving just dues, have been over and over again disappointed after express promises, as frequently renewed and broken. It is indeed sad to reflect that after six months of arduous and faithfully performed work in the school room any teacher should feel unable to participate in the pleasures of family reunions, to

which all are prone at the season of Christmas and New Year, merely because of the laxity and indifference of School Commissioners and Secretary-Treasurers, who render it impossible for them to pay small travelling expenses out of their own money. Yet even this hardship, together with others attendant upon the delay here referred to, is known to be inflicted.

Every teacher should be promptly paid the stipulated salary at least quarterly. The School Trustees and Commissioners possess ample powers for raising the money required for the support of their schools, including, of course, the payment of their teachers; and, we trust that the observations here made may have some effect and render a more pointed analysis of this subject unnecessary. It is only necessary, at present, to add one remark. The teachers themselves are naturally reluctant to resort to legal proceedings in extreme cases, or even to lodge grievances of this nature with the Département of Public Instruction, which, they know, would promptly take up their cause, since by so doing they might encounter the enmity of their employers—a consideration which aggravates the evil while it augments the moral responsibility of the School Commissioners and Trustees.

Examination of Candidates for Employment in the Civil Service of the Province of Quebec.

Amongst the clauses of the Act respecting the organization of the Civil Service is one which provides that no person shall be appointed as a permanent employé unless he holds a certificate from the Board of Examiners for the Civil Service. For the information of the readers of the Journal, and more especially of those who may desire to become Candidates, the regulations in full are printed below. In the Official Gazette, also, of which the first issue was published on Saturday the 16th instant, is contained a notice of a meeting of the Board to be held on the 27th of this month.

Regulations for the Government of the Civil Service Board Established in Virtue of the Act 31st. Vict., ch. 8.

1. The Board shall meet at the Office of the Secretary of the Province on the fourth Wednesday of every month unless it is a legal holiday, in which case the Board will meet on the following day, and shall commence its deliberations at ten o'clock in the forenoon.
2. Five members of the Board shall form a quorum.
3. The proceedings of the Board shall be, at all its meetings, opened by the reading of the minutes of the last meeting.
4. The Board shall from time to time appoint one of its members as Secretary.
5. The Board may adjourn its meetings from time to time.
6. It shall be the duty of the Chairman to call a meeting of the Board for the examination of the certificates of Candidates (if any have been received) on the Wednesday before such regular monthly meeting; and immediately after such meeting, the Secretary of the Board of Examiners shall notify each Candidate, in writing, of the decision of the Board relative to his certificate.
7. The Chairman shall have power to call special meetings of the Board giving at least two days' notice thereof to each member.
8. The Secretary of the Board of Examiners shall lay before the Board all the applications for admission to examination which shall have been received and all correspondence in reference to the applications and all documents accompanying the same, and shall give preference to the applications made by

bearers of Diplomas from the Incorporated Universities or Normal Schools of this Province.

9. Every proposal, measure, or question to be submitted by the Chairman for the decision of the Board, shall be put in writing.

10. The Chairman shall maintain order at every meeting of the Board, and if during a discussion two members claim at the same time the right of speaking, shall decide which shall be first heard.

11. Every vote as to the granting of certificates to Candidates shall be taken by rising and sitting and the names shall be enregistered.

12. In the event of an equality of votes on the question of granting a certificate the application shall be held to be rejected.

13. In the event of an equality of votes upon all other questions the Chairman in addition to his vote as a member of the Board shall have a casting vote.

14. A summary of the regulations, indicating the days of meeting and the rules to be followed by Candidates shall be published every six months in the Official Gazette, the *Journal de l'Instruction Publique* and *The Journal of Education* of the Province of Quebec.

15. The circulars and other forms necessary for the regulation of the affairs of the Board shall be prepared by the Secretary who is authorized to cause them to be printed after they shall have been approved by the Board.

16. The certificates and diplomas of the Board shall be signed by the Chairman and the Secretary.

Regulations Concerning the Examinations for the Civil Service.

I.

APPLICATIONS FOR ADMISSION TO THE EXAMINATIONS.

1. The Candidate for the Civil Service is required to produce at the office of the Board an application for admission to the examination, in his own handwriting, mentioning his age his place of birth and his present place of residence, the length of time he has been resident in the Province, and the nature of his previous occupation, declaring his desire to enter the Civil Service and indicating if he thinks proper, the branch of the service for which he considers himself best adapted.

2. The application of the Candidate must be accompanied by satisfactory certificates as to age, health and character.

3. No Candidate under seventeen years of age shall be admitted to the examination.

4. Every Candidate in order to show that he is of the required age shall produce an extract from the registers of the parish in which he was baptised, and if, for reasons which he must explain to the satisfaction of the Board, it should be impossible for him to do so, he shall furnish the best proof possible by certificates from credible persons, to the satisfaction of the Board.

5. The certificate of health must be in the subjoined form A signed by a practising Physician, and bearing date within one month of the date of the application for admission to examination.

6. Notwithstanding the production of a certificate of good character, the Board may require such additional evidence as to the moral character of the Candidate as it may deem expedient and may take action in accordance therewith.

7. Candidates previously employed in the Public Service must state the Department in which they were so employed and the length of time they served.

8. The Candidate must be recommended by at least two persons who must be householders, each of whom shall answer in writing and over his own signature, the questions submitted in form B, which answers shall be produced with application for admission. When the Candidate has been previously in the employment of private individuals, commercial houses or companies or in any office or department, such private individual, or

some person on behalf of such house, company, office or department, must be one of those who sign the recommendation, and when this condition is not complied with the Candidate must explain the reason.

9. In the case of a Candidate who has left school or college or other educational establishment in the year preceding his application for admission, the principal or one of the professors or teachers of the school or institution he attended last, must sign the answers to the questions in form B, and if this condition is not complied with satisfactory reasons must be given by the Candidate.

10. The five preceding articles do not apply to the actual employés.

11. Forms may be obtained by application to the Secretary of the Board.

12. The Candidate must produce his application and certificates before the third Wednesday of the month when they will be examined and the Secretary will notify him of any objection that may be made to them.

II.

EXAMINATIONS AND CERTIFICATES.

13. The examinations shall be conducted partly orally and partly in writing.

14. The time allowed for the answer to every written question shall be indicated underneath the same.

15. The certificates shall be divided into two classes, those of the first class will render the holder eligible for any employment in the Civil Service with the exception of that of book-keeper, if the Candidate has not passed a satisfactory examination on that subject: the certificates of the second class only render the holder eligible for employment as copying clerk and also as book-keeper, if the candidate has undergone a satisfactory examination on this subject.

16. In order to obtain a second class certificate the Candidate must:

1. Give proof of good handwriting;
2. Write correctly from dictation in French or in English;
3. Copy correctly in both languages;
4. Pass an examination in Arithmetic as for as the Rule of Three, inclusive. He may also if he desires it undergo an examination in book-keeping.

17. For a first class certificate, the Candidate must in addition to what is required for a second class certificate;

1. Translate in writing from English into French and from French into English;
2. Write from dictation in both languages;
3. Transcribe and make abstracts of documents in both languages;
4. Pass an examination on the following subjects: 1. Arithmetic in all its branches; 2. Geography; 3. History of England, the History of Canada and the Elements of General History; he may also if he desires it undergo an examination in book-keeping.

18. The actual employés shall be exempt from examination in No. one of the preceding article and in Nos. two and three shall only be required to pass an examination in one or other language.

19. A Candidate for a first class diploma may if he desires it, undergo a more extended examination: but in this case he must in his application for admission mention the other subjects upon which he wishes to be interrogated and the board shall decide whether or not he may conveniently be examined upon such subjects and he shall at the same time be notified of the decision of the board on his certificates.

20. There shall be endorsed upon the certificate of examination a list of all the subjects upon which the examination has been held, with number 1 or number 2 opposite each of them: the number 1 indicating that the result of the examination on that subject was excellent, number 2 indicating merely a satisfactory result. If number one has been obtained on two thirds

of the subjects of examination it shall be stated in the body of the certificate that the examination has been passed "with distinction," and in the first class certificates if in addition to this, the Candidate has passed in a satisfactory manner an examination on one or more of the optional subjects, it shall be stated that the examination has been passed "with great distinction."

21. There shall be published every three months under the signature of the Secretary of the Province, in the Official Gazette, the *Journal de l'Instruction Publique* and in *The Journal of Education*, a list of the Candidates who have obtained certificates at the three last meetings, indicating exactly the classes and the nature of the certificates.

(FORM A.)

I certify by these presents that I have this day examined Mr. _____ and that I find him free from defects and physical or mental maladies which would prevent him from efficiently discharging the functions of an employé in the Civil Service.

(Signature.)

(Address.)

(Date.)

(FORM B.)

Statement concerning Mr.

a Candidate for the Civil Service of the Province of Quebec :

1. Are you related to the Candidate and if so in what degree ?
2. Are you acquainted with the Candidate ?
3. Under what circumstances did you become acquainted with him ?
4. How long have you been acquainted with him ?
5. Is he strictly honest, sober and laborious ?
6. What do you know concerning his education and his mental capacity ?
7. In so far as you are able to judge of his character, is it such as to render him fit for public employment ?

(Signature.)

(Address.)

(Date.)

Publications Received.

1. Sixth Report of the Board of Education of Victoria, N. S. W., 1867-68, presented to both Houses of the Parliament of Victoria.
 2. The Kentucky Journal of Education, devoted to Popular Instruction and Literature, edited and published by Z. F. Smith, Superintendent of Education—Vol. 1, No. 1, January, 1869.
 3. Annual Report of the Common, Superior, Academic, and Normal and Model Schools in Nova Scotia, for the School year ended October 31st 1867—By the Superintendent of Education.
 4. Leisure Hours, A Monthly Magazine, devoted to History, Biography, Prose, Poetry, Wit, Romance, Reality, and Useful Information—Vol. 1. No. 4, January, 1869, O'Dwyer & Co., Publishers, Pittsburg, Pennsylvania.
 5. Picciola, Nouvelle Edition, Appleton & Co., New-York, 1869.
 6. Ellsworth's Book-Keeping, Single and Double Entry, a Business Manual for Schools, &c., Appleton & Co., 1868.
 7. Isaiah, with notes, designed for both Pastors and People by Rev. Henry Cowles, D. D., Appleton & Co., New-York, 1869.
- Mem.*—Notices of "Cameos of English History" and other books, crowded out of this number of the Journal.

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

— *Institution for the Protestant Deaf Mutes and the Blind of the Province of Quebec.*—The undersigned propose to establish an Institution in or near the city of Montreal for the instruction and training of the Protestant and non-Roman Catholic Deaf Mutes and the Blind in the Province of Quebec, and make the present appeal to the public for aid on the following grounds :—

It is estimated that the number at present of the Deaf Mutes alone, whom it is thus proposed to benefit, is at the least 200, who are virtually deprived of the pleasures of social life and of all the enlightening and purifying influences of education and religion, and in consequence the lives of these silent sufferers are sad and well nigh cheerless. The worst feature of their deplorable condition, however, is, that in the vast majority of cases they are left exposed to all the influence of a tendency to evil and to the terrible danger of becoming confirmed in sin, and, consequently, degraded and miserable.

An Institution such as it is proposed to establish, for their secular and religious education, will confer upon them incalculable benefit and happiness, will be the means of bringing to their darkened souls what will indeed be "good tidings of great joy," and will thus promote the highest welfare of a large number of our fellow creatures. It is also intended, if it can be accomplished, to extend similar blessings to the Blind, of whom there is a large number in this Province, in the same urgent want of careful education, as those who are deprived of the sense of hearing.

The Committee therefore earnestly request the liberal support of the public of this Province, in order that there may be no longer delay in making provision for the pressing wants of these suffering classes in this community.

Some gentlemen of the Committee have undertaken to solicit subscriptions personally, in order to obtain a sufficient amount to purchase a suitable property for the Institution, and the subscribers will be called together hereafter to decide upon the selection of a suitable property.

(Signed) — Mrs. P. Redpath, Mrs. Andrew Allan, Mrs. J. W. Dawson, Mrs. Major, Mrs. Bond, Mrs. Cramp, Mrs. Fleet, Mrs. George Moffatt, Mrs. Brydges, Mrs. P. D. Browne, Mrs. E. S. Freer, Mrs. Reddy, Mrs. Thomas Workman, Mrs. J. Thompson, Mrs. Dow, Mrs. James Torrance, Mrs. G. S. Brown, Miss Frothingham, Miss Day, Miss Matthewson, Miss Stuart, Miss Wood, and Miss Ross.

Thomas Workman, M. P. ; A. M. Foster, Charles Alexander, Thomas Cramp, John Dougall, William Lunn, G. Moffatt, Thomas Morland, J. A. Matthewson, J. H. R. Molson, Hon. J. J. C. Abbott, E. Carter, Q. C., P. D. Browne, W. H. Benyon, J. F. Barnard, John Leeming, S. J. Lyman, and F. Mackenzie.

— On last Thanksgiving-day the Revd. F. W. Beecher made the family the theme of his discourse, and amongst other topics relating thereto touched on the following :

Education and Recreation.—Education is another matter of primary importance in the family, and he would say generally, govern a child so as he will learn to govern himself,—that when the parental government is withdrawn he may suffer from no reaction. Give children every proper liberty in the day-time, but not to stay out in the dark. This is not safe even for grown men. Above all, make home cheerful and attractive to children and join with them in innocent amusement at home. In recreation abroad, always prefer those in which the family can go together. He liked the German beer-gardens for this purpose, but without the beer. The beautiful garden, the delightful music, the low price of admittance, the economical refreshments, the hundreds of families enjoying themselves of a fine evening and going home early,—all appeared to him worthy of imitation except the drinking. For that God's well would never be out of date. It was good enough for us all. The other drinks are ensnaring and debauching. He advocated cheap amusements, but they should all be in clean places, free from intoxicating drinks, and where young men may take their sisters and mothers.

The family idea was so important that all efforts to alleviate human suffering which left it out of view were a mistake. Thanksgiving-day was eminently a family day,—it was not a political holiday like the 4th of July, nor did it commemorate any religious event. It was intended to gather the family together to rejoice over the good gifts of God and thank the Great Giver.

—The Duke of Abercorn has filled up one of the vacancies in the National Board of Education by appointing the Revd. J. H. Jellet, Professor of Natural Philosophy in the University of Dublin.

LITERARY INTELLIGENCE.

—Sir Charles Eastlake's art library, one of the best in existence, has been purchased for the National Gallery, where it is intended to form a reading-room, in the place of the Royal Academy Library.

—The late Archbishop of Canterbury's library was lately brought to the hammer in Chancery lane. While acting as Bishop of Ripon, Bishop of Durham, and Archbishop of York his Grace appears to have collected some valuable works relating to ecclesiastical and other antiquities in the north of England. Amongst those offered for sale this morning were Raine's "North Durham;" "The Roman Wall and Watling-street, in Northumberland," by M'Lauchlan;" Browne's "Church of St Peter, York;" Hutchinson's "Durham;" Whittaker's "Deanery of Craven," &c. Amongst other books were Skelton's "Oxonia Antiqua Restaurata" and "Pietas Oxoniensis," Smyth's "Ædes Hartwellianæ," Kennet's "Parochial Antiquities," Hasted's "Kent," the Manx Society's publications "The Ecclesiastical History Society's publications," "The Library of the Fathers," "The Library of Anglo-Catholic Theology," Neale's "Westminster Abbey," and the works of the most eminent writers, on theology, ecclesiastical history, church polity, and other subjects, a very carefully selected collection of sermons, charges, and tracts, with standard books on English literature, topographical works, classics and privately printed books.

—The Senate of Glasgow University has conferred the degree of LL. D. on his Grace the Archbishop of Canterbury, the Right Hon. John Inglis, Lord Justice-General and Chancellor of the University of Edinburgh, and John Campbell Shairp, B.A., Principal of the United College of St. Salvador and University of St. Leonard's, St. Andrew's, all distinguished alumni of the University of Glasgow.

SCIENTIFIC INTELLIGENCE.

(Letter of Capt. Ashe on Celestial Photography.)

As I am asking the Dominion Government to build a "National Observatory," it is but proper that the public should know what are the duties to be performed, and the necessity of such an establishment.

Besides carrying on the observations usually taken in an Observatory, I propose to drop "time Balls," at St. John, N. B., Halifax, N. S., and at any other place that the shipping may require, to control all public clocks in the Dominion, (by Jones' patent,) and to take advantage of our beautiful climate to advance science by celestial photography.

When we consider the splendid observatories that are in the Colonies, all of which are advancing our knowledge of the heavens, and also that the finest equatorial in the world is now on its way to "Melbourne," then it is surely time that British North America should awaken to her duty, and build a "National Observatory."

The principal instruments for such an establishment are already mounted, and it only requires that the present staff should be increased, and buildings erected on the beautiful site given by the late Canadian Government.

The following letter from the Astronomer Royal will shew that with the small means at my disposal, Quebec has attained a position, in the first class of celestial photography—a branch of astronomy that promises the richest results:

{ Royal Observatory, Greenwich,
LONDON, S. E., Dec. 9, 1868.

DEAR SIR,—I duly received your letter of Sept. 25th, with the "negative photographs" of the sun about the time of the August eclipse. I immediately took measures for procuring good positives from them, and this has been, in some degree, the reason for my delay in acknowledging them, for after they had gone out of my hands I began to doubt whether I had seen on them any mark of North or East, which could fix with precision the places of the spots and faculæ, as possible to be compared with the red prominences.

I have had two positives taken on albumen upon glass; they are very good, but I think that I may obtain better. Meantime, I am well able to see that the negatives are extremely beautiful, and that you are in all probability justified in saying that you can see everything in them which can be seen in a good telescope.

I hope that you will keep up this *invaluable art*, and especially that you will arrange all that is necessary for defining the astronomical position of the objects photographed.

I am, dear sir,
Fathfully yours,

C. B. AIRY.

Capt. ASHE, R. N., &c.

To establish a photoheliograph would cost \$2,500, but by the assistance of a clever tinsmith (Kane), and a combination of lenses bought from the burnt-out effects of Mr. Ellison, I have succeeded in fitting the equatorial, so that in one minute I can change it into a photoheliograph, and thus my telescope,

"Contrives a double debt to pay
"An Equatorial by night,
"A Photoheliograph by day."

I am confident, when the country sees that Canada can be of such use in advancing the most noble of sciences, I shall have the public voice in recommending the Government to build a National Observatory.

I am your obdt., &c.,

E. D. ASHE,
Commander, R. N.

ARTS INTELLIGENCE.

—The work of restoring the ancient and beautiful Cathedral of Gloucester, England, formerly the Church of a Benedictine Abbey, and dating back to about A.D., 1047, is going forward successfully. The external of the south transept is now completed; the south porch has been begun, and the choir will be forthwith restored, at an expense of some \$75,000. The whole restoration will probably cost \$200,000.

—The Court Circular states that the Royal mausoleum at Frogmore is now completed, the granite sarcophagus being placed in the centre of the floor of the building, with the marble recumbent statue of His Royal Highness the Prince Consort, by the late Baron Marochetti, resting on its cover. The sarcophagus, which is of Scotch grey granite, stands upon a black marble plinth, with four bronze angels (also the work of Baron Marochetti), one at each angle. The black marble is from Belgium, and the gift of the late and the present King of the Belgians. All that now remains to complete the decorations of the building is to place three more pictures and three more statues in the vacant nichet.

—The solemn ceremony of removing the remains of the late Prince Consort to their last resting-place in the sarcophagus of polished Aberdeen granite, took place on the 26th ult., in the presence of the principal officials in attendance in the Castle, the architect, and contractor. The mausoleum will be complete very shortly. In the afternoon the Queen and members of the Royal Family visited the mausoleum, and placed wreaths of immortelles on the Prince's tomb.

—One of the most remarkable discoveries in the manner of producing stereotypical printing has just been made in France and bids fair to prove a wonderful progressive step in the arts, which will revolutionize within a short time the whole system of engraving, lithographing, etching and printing. The author of this discovery has passed many years in the abstruse science of measuring light. Being well conversant with the systems of Arago in France and Brewster in England, he has succeeded in measuring the intensity of the lights and shadows of a countenance and to transfer that with mathematical certainty upon the plate which is to receive the impression. When the plate is ready to be placed in the form an ordinary first-class printer would only be able to draw off from it a wretched piece of work, which in the inventor's hands will produce an engraving which will be taken either for a fine pencil drawing or a photograph. It will enable the public to be in possession of an engraving which shall be most thoroughly artistic at a price of the commonest wood cuts.

—A statue to Charles XII. is to be erected in Stockholm on the one hundred and fiftieth anniversary of his death.

—A monument, destined for the Cathedral of Calcutta, has been executed at the expense of the Government, in memory of the services of the Earl of Elgin and Kincardine. The design is by Professor G. G. Scott, R.A., and the monument has been executed by Mr. J. Birnie Philip, of Hans Place, London, in a manner quite worthy of that gentleman's distinguished reputation. It is a mural monument, Italian Gothic style, raised upon a table, or rather semi-table. The inscription runs thus— "In memory of the Right Honorable James Bruce, Earl of Elgin and Kincardine, K.T., G. C. B., Viceroy and Governor General of India, who died in the execution of his office at Dhurmasia, in Northern India, and there lies buried. This is erected by the Government of her Majesty, Queen Victoria, in recognition of the many services rendered by him to his country in Jamaica, Canada, China, and India. Born July 20th, 1811; died Nov. 20th, 1863." The inscription is incised gilt lettering. The cost of the monument, we understand, will be about \$4,000.

MISCELLANEOUS INTELLIGENCE.

—*The New Baronets.*—Her majesty has been pleased to create several new Baronets. The following notice of each of the objects of this act of royal favour may be welcome:—1. Sir Francis Arthur Knox-Gore, of Belleekmanor, in the County Mayo, is a gentleman of large property in that County and the adjacent County of Sligo, of which he is Lieutenant and Custos Rotulorum. He is the eldest son of the late Mr. James Knox, M. P., of Belleekmanor, (who assumed the additional name of Gore), by Lady Maria Louisa, daughter of Arthur second Earl of Arran. He was born in 1804, and educated at Eton and at Trinity College, Dublin, where he took the degrees of B. A. and M. A. Sir Francis, as we learn from the *County Families*, is also a magistrate for the County Mayo, of which he was High Sheriff in 1840 and he is colonel of the Sligo Rifle Regiment of Militia. He married in 1829, Sarah, daughter of colonel Charles Nesbit. 2. Sir Smith Child, of Newfield and Stallington-hall, Staffordshire, is a gentleman who has just re-entered the House of Commons as M. P.

for West Staffordshire, having represented the Northern division of the same County in Parliament as a strong Conservative from 1851 to 1859. He is a son of the late Mr. John George Child, by Elizabeth, daughter of Mr. T. Parsons, of the United States of America, and was born in 1808. He was educated at St. John's College, Cambridge, where he graduated B. A. in 1831, and proceeded M. A. in 1834. He is a magistrate and Deputy-Lieutenant for Staffordshire, of which County he served as High Sheriff about three years ago. He married in 1835 Sarah, daughter and heir of the late Mr. Richard Clarke Hill, of Stallington-hall, and it is through this marriage that he acquired the Stallington estate. He also owns another property in Argyleshire—Glen Losset, in Islay. 3. Sir Robert John H. Harvey, of Crown Point, Norfolk, is the eldest son of the late General Sir Robert John H. Harvey, C. B., of Monsehold, near Norwich, who was a magistrate and Deputy-Lieutenant for Norfolk, by Charlotte Mary, only daughter and heiress of the late Mr. Robert Harvey, of Watton, Norfolk; he was born in 1817, and sat in the Conservative interest in the last Parliament for Theford, which is now disfranchised by Mr. Disraeli's Reform Act. He is a magistrate and Deputy-Lieutenant for Norfolk, of which County he served as High Sheriff in 1862. Soon after coming into his father's property, Sir Robert married in 1845 Lady Henrietta Augusta, eldest daughter of George Viscount Kilcoursie, and sister of the earl of Cavan. 4. Sir James Walker, of Sand Hutton, Yorkshire, and of Beachampton, Buckinghamshire, according to the *County Families*, is the only son of the late Mr. James Walker, of Beverly, Yorkshire, by Jane, only daughter and heiress of Mr. John Porter, of Kingston-upon-Hull. He was born in 1803, educated at Rngby, and at Trinity College, Oxford, where he took his B. A. degree in 1824, and is a magistrate and Deputy-Lieutenant for the East and North Ridings of Yorkshire, of which County he served as High Sheriff in 1846. Sir James has been twice married,—firstly, to Mary, fourth daughter of Mr. Robert Denison, of Kilnwick Percy, Yorkshire; and secondly, to Maria, daughter of the Rev. Robert Stephen Thompson, of Bilbrough, in the same County. His eldest son, by his first marriage, is Mr. James Robert Walker, the late Conservative member for Beverly, who is a magistrate and Deputy-Lieutenant for the North Riding of Yorkshire, and an officer in the Yorkshire Yeomanry Hussars. He was born in 1829, and is married to a daughter of Sir John Heron Faxwell, by whom he has issue. 5. Sir George Etienne Cartier of Montreal, Canada, who has also been recently raised to the honour of a baronetcy in recognition of his services as Minister of Militia in the Privy Council of Canada, is a gentleman of French Canadian extraction. He is a son of the late Mr. Jacques Cartier of St. Antoine by Marguerite, daughter of Mr. Joseph Paradis, and was born in 1814; he is a member of the bar of Quebec, and Member of the House of Commons. He married, in 1846, Hortense, daughter of the late Mr. Edouard Raymond Fabre of Montreal.

—The *London Spectator* says of the four gentlemen who received baronetcies from the retiring English Ministry, that "George Etienne Cartier deserves the label for real services, and none of the other gentlemen have done any particular harm."

—The Queen who always devotes the 14th December, which is the anniversary of the Prince Consort's death, to retirement, paid a visit on Monday to the Mausoleum where the remains of the Prince Consort are deposited. The Queen was accompanied by all the members of the Royal family at Windsor Castle and Frogmore House.

METEOROLOGICAL INTELLIGENCE.

—Meteorological observations at Quebec—Latitude 46°48'30" N.; Longitude 71°12'15" W.; height above St. Lawrence, 230 feet; taken, during the month of Dec, 1868, By Sergt. J. Thurling, A. H. C., Quebec.

Barometer, highest reading on the 27th.....	30 312 inches.
" lowest 8th.....	28.592
" range of pressure.....	1.948
" mean for month reduced to 32°.....	29 676
Thermometer, highest reading on the 7th.....	31.0 degrees.
" lowest 25th.....	-12.0
" range in month.....	43.0
Mean of highest.....	19.1
" lowest.....	7.6
" daily range.....	11.5
" for month.....	13.3
Hygrometer, mean of dry bulb.....	13.8
" wet bulb.....	12.5
" dew point.....	2.3
Elastic force of vapour.....	.049 inches.
Vapour in a cubic foot of air.....	0.6 grains.
" required to saturate, do.....	0.4 " "
Mean degree of humidity (Sat. 100).....	60
Cloud, mean amount of (0-10).....	7.0 " "
Ozone " ".....	1.0 " "
Wind, general direction.....	North West.
" mean daily horizontal movement.....	161.0 miles.
Snow, number of days it fell.....	18

—From the Records of the Montreal Observatory,—lat. 45°31 North; Long., 4h 54m. 11 sec. West of Greenwich, and 182 feet above mean sea level,—for December, 1868,—by Chas. Smallwood, M.D., LL.D., D.C.L.

DAYS	Barometer corrected 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	29.300	26.355	29.431	14.2	26.3	12.4	w byn	w byn	w byn	80 20a
2	.575	.719	.813	7.1	21.1	14.0	w byn	w byn	w byn	24 40
3	.937	.941	.960	14.3	21.2	22.1	w byn	w byn	w byn	47.27
4	30.011	.997	.901	20.0	23.2	18.0	w byn	n by e	w byn	101.23
5	29.870	.811	.784	18.0	21.9	19.4	w byn	n e	n e	61.10
6	.950	.952	.951	20.0	24.1	18.1	w byn	w byn	w byn	61.10
7	.749	.351	.025	10.0	24.0	22.7	n e	n e	n e	55.29b
8	28.691	28.750	28.900	21.1	20.0	18.9	w	w	w	211.14c
9	29.275	29.439	29.500	4.2	8.0	3.1	w	w	w	197.10
10	.500	.524	.576	-0.5	15.1	6.9	w	w byn	w byn	204.24
11	.565	.587	.562	3.8	14.2	9.9	w byn	w	w	191.20
12	.450	.574	.699	6.9	21.7	17.9	w	w	w	97.67d
13	.863	.861	.682	17.9	28.0	21.9	w	w	w	101.24
14	.749	.655	.601	20.1	25.0	22.0	w	w	w	97.27e
15	.701	.815	.876	17.8	32.1	22.0	w	w	w	55.21
16	.699	.501	.899	20.0	29.0	22.6	s w	s w	s w	61.11
17	28.998	28.849	28.900	24.7	31.0	32.4	s w	s w	s w	54.10f
18	29.212	29.463	29.748	21.1	23.8	8.2	n n w	n n w	w	91.74
19	30.112	30.194	30.212	-3.4	12.2	3.1	w	w	w	66.21
20	29.747	29.525	29.854	8.0	20.8	19.7	n e	s w	w	88.24g
21	.349	.375	.451	19.2	26.7	31.2	s w	w	w	67.10h
22	.609	.748	.700	28.9	25.3	24.3	w	w	w	55.17i
23	.630	.546	.547	19.1	19.1	11.1	n e	n e	w	61.10j
24	.660	.617	.617	-3.9	9.9	-8.1	w	w	w	147.21
25	.442	.349	.531	-1.0	-2.0	0.0	n e	n e	w	89.84k
26	.850	30.047	30.180	-3.9	15.9	3.0	w	w	w	109.70
27	30.150	29.917	29.889	-9.5	3.0	10.0	n	n e	n e	39.21*
28	29.781	.850	.949	24.7	30.6	28.9	s w	w	w	90.00
29	.691	.636	.700	23.3	28.4	23.0	w	w	w	55.10†
30	30.100	30.055	30.050	5.6	12.2	6.2	n	n e	n e	67.89
31	29.859	29.951	.101	9.2	23.2	8.2	w	w	w	57.29‡

RAIN IN INCHES.—§ Inapp.

SNOW IN INCHES.—a, Inapp.; b, 5 21; c, 3 14; d, Inapp.; e, 0.20; f, 1.13; g, 3.25; h, 1.20; i, 0.20; j, 3 80; k, 3 21; * 3.37; † 3.25; ‡ Inapp.

The Barometer was marked by several great fluctuations. The highest reading was on the 19th day, and indicated 30.212 inches; the lowest reading occurred at 5 a. m. on the morning of the 8th day, and indicated 28.687 inches, showing a range of 1.525 inches. Another low reading was on the 17th day.

The mean temperature of the month was 16.00 degrees, which is about two degrees lower than the *Isotherm* for Montreal deduced from observations during a series of years.

Rain fell on one day in an inappreciable quantity.

Snow fell on 14 days amounting to 27.96 inches.

Winter fairly set in on the 7th day. The crossing on the St. Lawrence was generally good on Christmas Day.

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