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EDUCATION.

Infant Education.

Perhaps in the whole round of human employments there is none so full of true enjoyment, if followed as it should be, as that of infant education. The liveliest joy the mother feels is when her infant prattles its first word, calling her by the sweet maternal name. Well might the poet rank amongst the sweet things of the earth,

> "——————— the song of birds—
> The lisp of children and their earliest words."

But to be followed as it should, infant education must be a labour of love. It will not do to make of it a mere dull routine. It will not do to go through it in a listless manner. It will not do to take it up as a mere task. It will not do to weary of it and long for the day to be over. It will not do to bring into any school-room, but more particularly into the infant school-room, which breathes of heaven, the passions and pride of the world. The man or woman who would have a successful infant-school must give to the task their whole mind—must enter into the true spirit of the innocent little ones, whose hearts they have to form while they are still plastic and uncorrupted.

Cowper has written a dissertation on the vast advantages of home education as compared with public school education. We doubt the wisdom of his preference, but at any rate our state of society is every day becoming so artificial that public schools are an absolute necessity even to those moving in the higher ranks of society. What then is to be done with the children of the poor? Are they to be permitted to inhale from their earliest infancy the foul atmosphere of immorality which is the result of our increasing progress in manufacture and commerce? The poor mother is engaged during the day either attending to household duties, or, in too many instances, hard at work to add to the family earnings a small sum so as to be able to supply the house with those things which were formerly looked upon as luxuries, but which artificial society regards as necessaries. It will not do to delay sending the child to school till its ninth or tenth year, nor is it desirable, where it can be at all avoided, to have children of widely different ages in the same school and receiving instruction from the same teacher. It cramps the efforts of a teacher to be running from an alphabet class of young children to teach a senior draft of advanced pupils; and we speak from experience when we say that it is the general rule in most of our larger schools to neglect the very young children. The teacher feels but little interest in them, for he has elder boys or girls who will very shortly be going into the world to face the battle

of life, and to them he devotes the greater portion of his time and attention. The infants are left to the care of a monitor, perhaps not always the best model they could have before them. But little interest is taken by this embryo teacher of his charge. He, of course, from want of experience, is under the impression that he does his duty if he makes the poor little child learn the names of the few arbitrary signs which it sees before it, and manages to keep his charge from making so much noise as would interfere with the other business of the school. Now, all this is wrong. The business of leading the young mind into the mysteries as reading and writing, and of giving to it its first moral tone should not be entrusted to inexperienced hands. It requires the highest order of adaptability for teaching to implant early impressions on the infant. There is something in it more than a mere mechanical routine. If any occupation requires a knowledge of human nature more than another, it is that of infant teaching. It is an occupation which requires unceasing diligence, a calm temper, a quickness at detecting little moral flaws unseen by the careless eye, a winning manner, and above all a nature full of love for the little ones. These are qualities hard to find, but not impossible. We have seen them, and in the infant school too.

The chief aim of the infant school-teacher should be to try and make the school-room a happy place for the children—to cast around it a halo of enjoyment—to make it in fact a little paradise. Except this is done, the education fails at its very outset. Its chief aim cannot be attained. It becomes a place hateful to the little ones. They long to get out of it, and they go to it with a reluctance amounting to dread. They carry home with them no useful moral lesson, but are left to pick up that commodity on the streets.

Perhaps we may as well say here, as further on, that men should never be employed as infant school-teachers. In saying so it is not to be supposed that we belong to the softer sex. We rank amongst the male *genus*, but nevertheless, we are not of those who would wish to monopolise to the lords of creation any occupation which we believe could be as well or better filled by a woman; and this is one peculiarily adapted to a gentle and loving woman. Women have naturally the very qualities which are most desirable in the infant school. We have been in one or two infant-schools which were presided over by a master, and we could observe a certain amount of harshness of manner in the children which was entirely absent in those conducted by mistresses. Decidedly the best schools of the class we have any acquaintance with are those attached to the District Model schools. The teachers are not hampered with too many forms, but are left to their own judgment in almost every detail of their duties, and so much the better. The moment you begin to lay down rules to the infant school-teacher, that moment you make of her a mere machine. She loses her interest in her occupation, and it becomes to her a mere drudgery. The praise we have accorded does not, however, refer to all the model schools, for we are sorry to say that in some few of them the *surveillance* is somewhat too strict. We mention this, hoping it may catch the eye of some inspectors who, with the best intentions, interfere a little too much in the internal working of the infant schools under their charge. We would, above all things, say to an infant school-mistress—do not attempt to make little prodigies of the tender things committed to your charge;—do not try to force the little intellects, some of which may be, and undoubtedly are, unhealthily precocious;—do not yield to those foolish mothers who are anxious that their little one should shine in the eyes of their acquaintance. If you find precocity, restrain it without seeming to do so, but on no account encourage. There are such things as unhealthy brains—there are such things as children being sent to early graves by a foolish and criminal forcing of their infant intellects. Have we not all seen little prodigies displayed before us? We must confess that in our experience—and it extends over a good many years—we have never known those little geniuses to make any great figure in their after life. The cause is evident. The poor little brain was overworked. Its strings were snapped asunder, if we may so express ourselves, and afterwards yield no sound to the touch. The harmony was gone, and nothing remained but the grosser part of poor humanity.

We would also say to the infant school-mistress—punish as seldom as possible. In fact, we believe that except for a breach of truth, the infant should never receive corporal punishment. Always let your punishments be public. Suspend the business and announce to the whole school what you are going to punish for. Point out the enormity of the crime committed in suitable terms, and you are sure to make an impression on the tender minds.—*The Irish Teachers' Journal.*

The Decoration of School-Rooms.

Hitherto, as far as I know, it has either been so difficult to give all the education we wanted to our lads, that we have been obliged to do it, if at all, with cheap furniture in bare walls; or else we have considered that cheap furniture and bare walls are a proper part of the means of education; and supposed that boys learned best when they sat on hard forms, and had nothing but blank plaster about and above them whereupon to employ their spare attention; also, that it was as well they should be accustomed to rough and ugly conditions of things, partly by way of preparing them for the hardships of life, and partly that there might be the least possible damage done to floors and forms, in the event of their becoming, during the master's absence, the fields or instruments of battle. All this is so far well and necessary, as it relates to the training of country lads, and the first training of boys in general. But there certainly comes a period in the life of a well-educated youth, in which one of the principal elements of his education is, or ought to be, to give him refinement of habits; and not only to teach him the strong exercises of which his frame is capable, but also to increase his bodily sensibility and refinement, and show him such small matters as the way of handling things properly, and treating them considerately. Not only so, but I believe the notion of fixing the attention by keeping the room empty, is a wholly mistaken one: I think it is just in the emptiest room that the mind wanders most; for it gets restless like a bird for want of a perch, and casts about for any possible means for getting out and away. And even if it be fixed, by an effort, on the business in hand, that business itself becomes repulsive, more than it need be, by the vileness of its association; and many a study appears dull or painful to a boy, when it is pursued on a blotted deal desk, under a wall with nothing on it but scratches and pegs, which would have been pursued pleasantly enough in a curtained corner of his father's library, or at the latticed window of his cottage. Nay, my own belief is, that the best study of all is the most beautiful; and that the quiet glade of a forest or the nook of a lake-shore, are worth all the school-rooms in Christendom, when once you are past the multiplication table; but be that as it may, there is no question at all but that a time ought to come in the life of a well-trained youth, when he can sit at a writing-table, without wanting to throw the inkstand at his neighbor; and when also, he will feel more capable of certain efforts of mind with beautiful and refined forms about him than with ugly ones. When that time comes he ought to be advanced into the decorated schools; and this advance ought to be one of the important and honorable epochs of his life.

I have not time, however, to insist on the mere serviceableness to our youth of refined architectural decorations, as such; for I want you to consider the probable influence of the particular kind of decoration which I wish you to get for them—namely, historical painting. You know we have hitherto been in the habit of conveying all our historical knowledge, such as it is, by the ear only, never by the eye; all our notions of things being ostensibly derived from verbal description, not from sight. Now, I have no doubt that as we grow gradually wiser—and we are doing so every day—we shall discover at last that the eye is

a nobler organ than the ear; and that through the eye we must, in reality, obtain, or put into form, nearly all the useful information we have about this world. Even as the matter stands, you will find that the knowledge which a boy is supposed to receive from verbal description is only available to him so far as in any underhand way he gets a sight of the thing you are talking about. I remember well that, for many years of my life, the only notion I had of the look of a Greek knight, was complicated between the recollection of a small engraving in my pocket Pope's Homer and a reverent study of the Horse-Guards. And though I believe that most boys collect their ideas from more varied sources, and arrange them more carefully than I did, still, whatever sources they seek, must always be ocular: if they are clever boys they will go and look at the Greek vases and sculptures in the British Museum, and at the weapons in our armories,—they will see what real armor is like in lustre, and what Greek armor was like in form, and so put a fairly true image together, but still not, in ordinary cases, a very living or interesting one. Now, the use of your decorative painting would be, in myriads of ways, to animate their history for them, and to put the living aspect of past things before their eyes as faithfully as intelligent invention can; so that the master shall have nothing to do but once to point to the school room walls, and for ever afterward the meaning of any word would be fixed in the boy's mind in the best possible way. Is it a question of classical dress—what a tunic was like, or a chlamys, or a peplus? At this day, you have to point to some wood-cut, in the middle of a dictionary page, representing the thing hung upon a stick; but then, you would point to a hundred figures, wearing the actual dress, in its fiery colors, in all actions of various stateliness of strength; you would understand at once how it fell around the people's limbs as they stood, how it drifted from their shoulders as they went, how it veiled their faces as they wept, how it covered their heads in the day of battle. *Now*, if you want to see what a weapon is like, you refer, in like manner, to a numbered page, in which there are spearheads in rows, and swordhilts in symmetrical groups; and gradually the boy gets a dim mathematical notion how one cimeter is hooked to the right and another to the left, and one javelin has a knob to it, and another none: while one glance at your good picture would show him,—and the first rainy afternoon in the school-room would forever fix in his mind,—the look of the sword and spear as they fell or flew; and how they pierced or bent, or shattered—how men wielded them, and how men died by them. But far more than all this, it is a question not of clothes or weapons, but of men? how can we sufficiently estimate the effect on the mind of a noble youth, at the time when the world opens to him, of having faithful and touching representations put before him of the acts and presence of great men—how many a resolution, which would alter and exalt the whole course of his after-life, might be formed, when in some dreamy twilight, he met, through his own tears, the fixed eyes of those shadows of the great dead, unescapable and calm, piercing to his soul; or fancied that their lips moved in dread reproof or soundless exhortation. And if for but one out of many this were true—if yet, in a few, you could be sure that such influences had indeed changed their thoughts and destinies, and turned the eager and reckless youth, who would have cast away his energies on the race-horse or the gaming-table, to that noble life-race, that holy life-hazard which should win all glory to himself and all good to his country—would not that, to some purpose, be "political economy of art?"—*Ruskin's "Political Economy of Art."*

Truth and Honor in School Training.

—Many teachers believe, and act upon the belief, that their sole duty is to develop, discipline, and store with knowledge their pupils' minds: that the inculcation of right principles of action and the development of character, are not their business or any part of their business. *Life*-culture is set aside by such teachers for *mind*-culture, instead of the two being carried on together; and this is done honestly, with no intentional neglect of duty.

Other teachers—and these form perhaps the larger class—find themselves in schools the working principles of which are such that the teacher has no choice; he is compelled to restrict his efforts to the intellectual culture of his pupils. And there are other schools, in high repute often for thorough discipline and scholarship—wherein great pretence is made, it may be, of giving religious instruction—yet whose machinery is such as to create a most unhealthy moral atmosphere: schools in which the constant discrepancy between promise and performance exerts as constant a corrupting influence upon the general character of the pupils.

Now the conditions of healthful school-life, not to mention life-culture, are as plain and as easily controlled as the conditions of physical health. The difficulty is, they are too little regarded, frequently too little understood by the conductors of schools. The master of Uppingham School, England, in a recent work, entitled "Education and School" (London: Macmillan &Co.), lays great stress upon these conditions, in describing what he calls "the machinery of a first rate school:" having in mind an ideal institution for the training of boys, in which the right thing should always be done at the right time, and in the right way.

There is a double object, he insists, in school training: first, the training of the life; secondly, the training of the intellect and the body: the first, setting the loving and hating on the right track; the second, training the instrumental powers rightly.

The first can be done, he believes, only indirectly; for the formation of character and a right spirit is only in a very slight degree capable of being made a matter of imparted knowledge. Boys or men become brave and hardy and true, not by being told to be so but by being nurtured in a brave and hardy and true way, surrounded with objects likely to excite these feelings in a manner calculated to draw them out unconsciously: for all true feeling is unconscious in proportion to its perfection. And as there is no moment in which habits are not in process of formation, there is nothing whatever which cannot be made to bear on this process; nothing indeed which does not of necessity bear on it. In a school, therefore, it is of the utmost importance that the whole government and machinery should, in its minutest particulars, do this by perfect truth and perfect freedom.

It follows, then, that no falseness in the government, no falseness in the working-plan, in or out of school, can make boys true. Whatever is professed must be done.

If a school professes to teach, then every boy must have his share of teaching. There must be no knowledge-scramble, or the untruth will make itself felt.

If a school professes to train, then every boy must really be known, his wants supplied, and his character consulted, or the untruth will make itself felt.

If a school professes to board boys, then every boy must find proper food and proper lodging, and no meanness; or the untruth will make itself felt.

A sufficient number of masters, a feeling of being known and cared for, a spot free from intrusion, however small, are necessities in a good school: and the want of these, or any of the other real requirements for training and teaching properly, is a sort of acted falsehood; for that which is professed is not done. It does not the least follow that this is the fault of the men engaged in these schools. The constitution and legal status of a very large number of schools absolutely compels this kind of imperfect system. And even where it is not the case, immemorial custom and popular opinion—at least as far as hearty support is an evidence of popular opinion—contribute to maintain such defects, and are almost as strong as law. It is not possible for the wisest or bravest men, individually, to break through the systems in which they find themselves working-units. They can but toil and toil, as they do, to make the best of it, and lament their own helplessness to do more.

But the fact remains, whatever may be the cause; and a lower standard of truth and efficiency must be looked for, wherever the theory of a school is at variance with its practice. It is a certainty that the continual presence of any false influence in a society must have a great effect for evil, even when the cause is not known or suspected. To train the life truly requires a thorough atmosphere of truth. Like mountain air, the lungs should expand to drink it in, and the limbs will feel the freshness: whilst a languid step and feeble breathing are too surely the consequence of living over sewers, however hidden they may be. Poison is not less poison because it is invisible, or life less life for the same reason. Good air is always invisible, and the subtle working of a great principle of life and truth can no more be caught and labelled than the virtue of the air itself. But some of the necessary conditions, in the absence of which truth cannot exist, may be laid down without difficulty.

The training of the life depends on the conditions under which the life is passed, and is affected for good or evil by everything with which the living being is brought in contact. If truth and honor are required in a school, all things must be framed in such a way as to work out the object professed with thorough truth; and any want of truth, anything that is false, will inevitably find its way into the life of the boys and taint it. And no wonder: nothing is detected so soon as inconsistency, and eyes looking upward see sharply. Those who stand low on the ladder, observe the dirt under the boots of those above them, and are apt to care little for preachments dropped down from aloft, telling them to keep clean and good. Those who look up ought to see no dirt. Truth is required to produce truth, and when the machinery is right, and all things are worked truly, truth may be expected in return, and boys may be trusted, and can be trusted safely.

There is no more tendency in boys to betray their friends than there is in men; nay, far less tendency. But then who are their friends? The whole plan and practice of a school must convince the boys that they and their governors truly form one body, and that the government is their friend. The boy-idea, too commonly, has been that there are two rival powers side by side, *masters* and *boys*, with divided interests; and school-life therefore has resolved itself into a match between the two-bodies, in a sort of Spartan fashion—power on the one side, endurance and cunning on the other. So the fox has never left off preying on their vitals as they stand with false appearance of innocence before their masters. And there is a sham nobility in this; if the masters are indeed their enemies, in an enemy's country all things are fair, and war knows no nice distinctions. Supposing, however, that parents love their children and send them to school because they love them, and school is therefore for a time a better place than home, and masters are men who do parents' work better than they can do it themselves, how absurd, how pitiful, this state of warfare is—the antagonism of the boys to those whom their parents trust; an antagonism not of personal dislike merely (very often quite the contrary), but of intention, systematic and overruling feeling: *a principle of opposition.* The marvel is how this can be considered a training for true life, when honor comes to mean liberty to deceive any master, provided the secret society bond is held fast. (1) Theoretically, the masters are training boys to be true, whilst practically, to be false to the trainers of truth becomes the recognized code of honor among the boys who are to be trained; and must do so, as long as there are divided interests. Now there is much excuse for this falsehood. Wherever teaching has got to mean bringing forward the clever, and training enforced obedience to some rigid general laws that fall on all alike, giving, as all general laws do, great opportunity of license to the bad who evade them, combined with great hardship to the good who keep them—where mob-law of this kind is training, and pouring knowledge into troughs is teaching, and other double purposes exist, it seems right for a boy to stick to *his* flag. It is the less of two evils for him to be true to his companions at the expense, if need be, of the powers that deal so strangely with them.

Nothing but truth in the main plain, and thorough completeness in the school machinery, both in-doors and out, can make boys feel that the school is one body, one army; that masters and boys are united in one life, with one standard round which they rally, one battle-cry—truth and honor for all; one object—true progress and true power. But let this be the case, and then the boy-allegiance becomes due to the common standard, not to the traitor who betrays it: to the good cause, not to the mean coward who deserts it: to the true friends and true men who work with him, not to the tap-room heroes whose ideal is a tapster; then the boys will uphold amongst themselves their laws, just as men uphold theirs, and think it no shame to make thieves and traitors know their place.

If there is opposition between the boys and their teachers, there will be similar opposition between work and play, though the two are equally parts of education. No great progress can be made until the conviction of oneness is stamped on the school heart and becomes its creed. Then the antagonism between in-school and out-of-school, between work and play, between body, intellect, and heart, disappears, and all is in harmony. For the young, learning to have faith in the old, believe with them that life is one piece, and each good helps every other good: health of body, health of intellect, health of heart, all uniting to form the true man, and being the common object of teachers and taught.—*The American Educational Monthly.*

1 His honor rooted in dishonor stood,
And faith unfaithful kept him falsely true.

Guinevere. TENNYSON.

Corporal Punishment in School.

The teacher of a District School, in Indiana, had occasion, a few weeks since, to whip, severely, an obstinate and incorrigible boy, of some ten or twelve years of age. The boy's father took exception to the punishment, and prosecuted the teacher for an assault and battery. The case was tried at the last term of the Common Pleas Court of Johnson County. The case created a considerable interest among the teachers, for the time – they all being anxious to know whether corporal punishment was to be the *law* in Johnson County. The jury was composed of sturdy old farmers, brought up under the dispensation of "Spare the rod and spoil the child." The verdict of the jury was "not guilty," as a matter of course. The following is the instruction of Judge Woolen to the jury:

"1. A school-teacher, while in the school-room, is responsible for maintaining good order, and he must be the judge to some extent, of the degree and nature of the punishment required when his authority is set at defiance, and although he will be held amenable to the law, for any abuse of this discretion, still he will not be held liable on the ground of excessive punishment, unless the punishment is clearly excessive, and would be held so in the judgement of reasonable men.

"2. A teacher, in the exercise of the power of corporal punishment, must not make such power a pretext for cruelty and oppression; but the cause must be sufficient, the instrument suitable, and the manner and extent of the correction, the part of the person to which it is applied, and the temper in which it is inflicted, should be distinguished with the kindness, prudence and propriety which became the station.

"3. A school-teacher is liable criminally if, in inflicting punishment upon his pupil, he goes beyond the limit of reasonable castigation, and, either in the mode or degree of correction, is guilty of any unreasonable or disproportionate violence of force, and whether the punishment was excessive under the circumstances, is a question for the jury.

"4. A parent is justified in correcting his child by administering corporal punishment, and a school-master, under whose care and instruction a parent has placed his child is equally jus-

tified in similar correction : but the correction in both cases must be moderate and in a proper manner.

"5. As to the spirit in which the punishment must be administered by the teacher, I would say that it should not be done in malice, and for the purpose of gratifying a malicious feeling, but in a proper spirit with the sole object of maintaining his authority and preserving the order and decorum of his school; and even when inflicted in this spirit, it must not be excessive or inhuman; for such excess, the party inflicting it, will be guilty of assault and battery.

"6. In this case, the defendant is presumed to be innocent until proved guilty by evidence beyond a reasonable doubt; and you are the judges of the law and the facts governing the case." —*Indiana Teacher.*

Teachers as Successful Business Men.

The impression is quite prevalent in society that teachers, as a class, are of inferior business capacity — that, in other words, no man is a teacher who can do anything else. This is gradually wearing away; it is true, but it still has a strong hold upon the public mind, and teachers meet it every day and every where. Popular authors have caricatured the teacher, and held him up to the world's laughter; and the very outréness of their delineations has given them a stronger hold upon the mind.

If there was ever any foundation for this, not also pertaining to all other professions and callings,—which we do not believe, — there is none now. It is getting to be understood by business men that the quickness, decision, knowledge of character and accuracy of knowledge requisite for a successful teacher are the very qualifications requisite for a business man. Hence able teachers are continually called away to agencies, etc., that require shrewdness, activity, and honesty. And such persons invariably take the lead in their new positions. We have in mind many such in our own and adjoining states, and all can recall such. We are glad to hear of such cases; for, though we miss them from the profession, they help to break down this disabling prejudice. But it is not confined to agencies alone. Almost all of our lawyers, ministers, physicians, and many of our leading business men, have at some time in their lives been teachers.

Now it is certain that, in all such cases, the better teacher each person was, the better he succeeded in his after calling; and the poorer teacher he was, the less successful. The fact is, it requires the highest order of talent to make an able and successful teacher; and many of those, who now sneer at the teacher and his calling, would find, if places were changed, that it would tax all their powers of body and mind to maintain a respectable standing in their new positions.— *Illinois Teacher.*

Why Do Not Farmers' Boys Stay at Home?

Four fifths of the country-born boys of to-day are planning to leave home just as soon as the law releases them from parental obligation. They propose to go to insurance business, be clerks or book-keepers in some village or city store, conductors or drivers of street railroad-cars, baggage-masters, freight-checkers, or brakesmen—in short, to be one of the million scramblers for some place that they deem preferable to a life on a farm.

Why is this? We attribute it mainly to the unattractiveness of our country homes, and the endless toil and meagre pay that the business of farming seems to involve.

Your restless boy of sixteen occasionally goes to the village or city. He sees in both neat, well-painted, well-kept houses, made more or less attractive and beautiful by a surrounding of fruit and ornamental trees, with here and there a patch of flowers. He sees men that begin their work for the day at seven o'clock and end it at six, reading their daily paper, or chatting on the street, neatly dressed, and apparently in the full enjoyment of a happy and hopeful life. More than this, he sees other boys of his own age, and those older grown, that supply from pockets full of money all the little needs that boys as well as men always have.

At home all is different. The house, inside and out, is unattractive. The parlor has the furniture in it that was a part of his mother's dower, placed there twenty or thirty years ago. Nothing has been added or changed, and, dismal as it is, it is never opened more than two or three times a year. The sitting room is a poor edition of the parlor. Half a dozen stiff, wood-bottomed chairs, standing in exactly the same position, hold silent court on the rag-carpet-covered floor three hundred and sixty-five days in the year. The kitchen, usually the living-room, where the meals are all and always taken, is dingy with smoke and redolent of the fumes of burnt grease or boiled cabbage, and hot from the heat of a cooking-stove and the steam of boiling kettles. His sleeping-room is uncarpeted, unadorned, and utterly unattractive; his bedstead one that his great-great-grandmother had given her out of her great-great-grandfather's portion, that came to him from the division of the household stuff that came over in the Mayflower. There is not a picture, or a pleasant, attractive, or beautiful thing in the whole house.

Outside, the look is little if any better. There are few if any trees; no flowers except marigolds and hollyhocks; no neat door, yard, fence, or spacious lawn—in fact, nothing, inside or out, to attract the boy, born with more or less of the nineteenth century in him, to his country home.

Generally at break of day he his called up. Milking and other chores fill up his time till the breakfast hour—probably before six—and then stern, relentless work till milking and chores again, and then night, with its brief and burdened rest.

If all this toil purchased respite by and by, or the means to gratify some healthy desire or taste, it could be cheerfully endured; but usually the work is all but endless, and when he has some little wants of his own that it would take but a few shillings or a few dollars to satisfy, he is many and most times forced to forego the good or pleasure for lack of funds.

Why should the boy remain at home? What is there among its belongings or its surroundings to call forth his love? What gratification to-day or hope for to-morrow does it bring him? The truth is, he would be a fool if he did not go.

How can he be kept at home? By giving him there all and more than he can find elsewhere. Begin with the inside of the house. Make the parlor a place of beauty. Paint, and whitewash, and wall-paper, and bordering, and a pretty carpet, and a few chairs, with a few fancy things, and here and there a picture well hung—costing, in all, but a few dollars—will make your stiff and unattractive room something that has about it a cheerful, pleasant look; and when it is thus fixed, at the risk of letting in a particle of dust, let the door sometimes stand ajar, and if your boy occasionally looks in or walks in to read a book for a minute, or look at the pictures, with his dirty boots even, let him. It will not hurt the carpet as much as it will him if he is kept out. And so of the other rooms; give them an air of something above —at least different—from a prison or a dead-house.

And, then, in the matter of eating. Unless your kitchen is large, and suitable, and inviting, set your meals always elsewhere. We know of a family that set their table for at least five months in the year on an ample veranda, shielded only from the outside world by honeysuckle and running roses, and other climbing plants. If you have no veranda, appropriate the shade of your nearest tree, when the weather is inviting, for your dinner, if for no other meal; and if you sit at the table or roll on the grass for an hour or two hours in the middle of a hot day, the time will not be lost. It is these rays of sunshine, shot into the gloom, that make life anywhere endurable, much more to be coveted. As to your child's sleeping-room, make it as pleasant as possible —not with any lavish expenditure of money, but a liberal expenditure of taste.

And, then, as to work. We of the farm do not give ourselves the leisure that the body (and the mind none the less) demands.

Ten hours wisely appropriated in field labor, in this era of labor-saving machines, is all that is ever needed, and as much as should be ever given; and the week's work, when it can be, should be finished by Saturday noon at that. One thing about our houses that we lack is fish-poles, and the last afternoon in the week is a good time to use them.

And, then, in the domain of money. There are better places for it than the savings bank—as much of it, at least, as can be wisely appropriated in satisfying every rational and proper desire. A farmer's boy should have as good clothes as the son of the merchant or mechanic wears. His hands and face will be darker, but they should be, and will be, his glory rather than his shame, if he is his superior in other respects. He should have money, always have it, and be taught its wise and appropriate use.

All this is practical, but it needs thought and plan, and sometimes sacrifice on the parts of parents, who, seeing the good in future, should be content with the present evil. It were better to take a few extra steps now than to be obliged to follow the shadow of an irreparable loss for a lifetime.

To do all this, the farm must be made to yield a better return than it ever has. And that time is coming. The best counsel for to-day is—let every farmer do what he can with the help of his family, and let what they cannot do go undone. Plant fewer acres, and manure them better. Raise grain that does not need so much work with the hoe. Set out fruit-trees. Stock your farm-yard with hens and turkeys, things that are pretty as well as profitable.

Pursuing this plan, you will not be compelled to ceaseless work in order to make your hired man "earn his money," and, what is better, that which you sell will be yours, and not his. Thus, with beauty and comfort in-doors and out, leisure for reading, and plenty of papers and books to read, a good and reliable return for labor done, why should your boy desire to make an exchange that can bring him no greater good or joy, and may involve him in remediless ruin?—*Hearth and Home.*

Liverpool Catholic Training School for Young Women.

The Liverpool Training College for the education of Teachers of Primary Schools, was founded in 1856 under the following circumstances:

The Catholic Poor School-Committee having decided on accepting Government grants for the education of the Catholic poor, it became necessary to fulfil the conditions on which the grants were made to depend. These conditions included the training of teachers who, after a course of five years' apprenticeship in primary schools as pupils, teachers, or monitors, and two years in a Training College as students, were to receive, on passing the required examination, certificates of merit, qualifying them to teach in schools under Government inspection.

On the part of the Privy Council it was agreed that the teachers so trained would be paid during their apprenticeship an annual stipend, and that at the age of eighteen, when their apprenticeship concludes, they should be eligible for Queen's scholarships, and entitled to two years' education in a Training College under inspection.

On the part of the Training College it was agreed that the Queen's scholars would be admitted for a two year's residence, during which time they would be lodged, boarded, and taught, in return for the grants allowed on their behalf. It was further agreed that a Practising School should be attached to the College wherein the Queen's scholars should study and practice the art of teaching, that, at the end of each year, they should be presented to Her Majesty's Inspector for examination in the subjects named by the Privy Council.

It was understood that all the students so trained would devote themselves to the work of teaching in Elementary Schools, for the children of the laboring classes. To secure the fulfilment of the latter part of the agreement, every student is required to sign a paper when she enters, declaring her intention of following her profession as a teacher of the poor. And should any one break her engagement, after leaving the college, her certificate is withheld, and the institution loses all grants on her account.

Under conditions similar to these (for the Revised Code of 1863 introduced some modifications) the Sisters of Notre Dame offered to carry out the training of such candidates as should prove eligible for Queen's scholarships, and desirous of qualifying themselves for Government certificates.

A large and commodious building was erected in 1856 at the expense of the Sisterhood, for the reception of seventy students, and to this were added, a little later, Practising Girls and Infants' Schools, planned and fitted up in such a manner as to render them model institutions of their kind.

The first examination of candidates for admission was held in December 1855 by Her Majesty's Inspector, S. N. Stokes, Esq., and in January 1856, twenty-two Queen's scholars entered the College as resident students. The following year, the number of students was more than doubled, and since then the average number in residence has been seventy.

The students are divided into two classes—the students of the second year and those of the first. Both of these classes have to undergo special examinations to test their efficiency and progress.

1. An examination in Religious Knowledge (viz: Christian doctrine, Scripture and Church History) is held every October by the Ecclesiastical Inspector, appointed by the bishop of the diocese. Passing in this examination entitles a student to a religious certificate issued by the Diocesan Inspector:

2. An examination in Secular Kowledge (viz: in all the subjects described in the Government syllabus) is held every December by Her Majesty's Inspector of schools. Passing in this entitles a student to a certificate of merit from the Privy Council of the first, second, or third class, the issue of which is deferred till the student has completed her course of study, and has taught for two years successfully in a school under inspection.

3. An examination of the students of the second year only, in the practice of teaching is held every September by two of Her Majesty's Inspectors, who hear each student in turn, and give a lesson to a class of children on some prescribed subjects.

4. An examination in Drawing, Perspective and Geometry is held every November by one of the Inspectors from the Department of Science and Art.

The examination to which the Privy Council attaches the greatest importance is that in the Art of teaching. To prepare themselves for this, the students spend a considerable portion of their time in the different Primary schools of Liverpool, taught by the Sisters of Notre Dame. Here their methods of teaching are first formed, then corrected and watched by the mistress in charge. Once or twice a week, model lessons are given in the Practising School to which they listen, and they are expected to give "Criticism Lessons," which are listened to and criticized by the students themselves, under the superintendence of the mistress of method.

The number of students trained at Liverpool since 1856 amounts to 424 (including 29 who are now finishing their course). Of these ninety have entered religion and have carried their certificates to different teaching Orders in England and Scotland. A few have married. Several, after exercising their profession for some years in Poor-schools, have become governesses in Convent boarding schools, and in private families. But the great majority of the students trained are still engaged teaching Catholic poor schools in Great Britain. The last published report in the official Blue Book, 1863, thus testifies to their success:

"To the influence of the Liverpool Female Training College, as far as regards Catholic schools, are mainly due the increase of teachers, the strengthening of teaching communities, the

adoption of the best organization and most successful methods, intelligent accuracy in keeping school records, and the maintenance of a high and generous tone of feeling among school mistresses. My examination does not extend to religion but the manager of schools assures me, that the teaching and example of Liverpool students are as valuable in a religious sense, as I know them to be in all that relates to the secular conduct of schools."—*Catholic Telegraph.*

Education.

It has been held that *education*, according to its etymology, means a *drawing out* of the faculties of the mind, not a mere accumulation of things in the memory: and this is probably substantially true. But yet the etymology of *education* is not, directly at least, *educere* but *educare*. Again, *education* has been distinguished from *information*, which may well be done, as the word information is now used; but yet the word *informare* at first implied as fundamental an operation on the mind as *educare*,—the forming and giving a defined form and scheme to a mere rude susceptibility of thought in the human mind. Again, we use the word *learn*, both of the teacher and the scholar. (Thus we have, Psalm cxix, 66,71, *Learn me true understanding and knowledge, and I will learn thy laws.*) But the German distinguishes these two aspects of the same fundamental notion by different forms — *lehren* and *leruen;* and in a more exact stage of English, one of these is replaced by another word, to *teach*, which though it is not the representative of a word used in this sense in German, is connected with the German verb *zeigen*, to show, and *zeichen*, a sign or mark, and thus directs us to the French and other daughters of the Latin language, in which the same action is expressed by *enseigner*, *insegnare*, *ensenar*, which comes from the Latin *insignire*, and are connected with *signum.*—*W. Whewell.*

LITERATURE.

POETRY.

MAY.

BY HERMINE.

With rosy garlands round her feet,
With starry buds above her brow,
With dewy garments perfumed sweet,
The bright-eyed May is with us now.

The fairest link in all the chain
That binds old Winter unto Spring—
Her touch is balm to every pain
And joy to every living thing.

She came as comes an Eastern Queen,
A wreath of beauty round her flung;
The Earth unrolled its banners green,
With gold and crimson tassels hung.

The orange-buds from April's hair
Were thrown as incense round her way;
Her footsteps pressed a mantle rare
As Raleigh gave *his* queen one day.

The wild birds waited in the dell
To hear the music of her tone,
Then tuned their notes her praise to tell,
As minstrels round a monarch's throne.

The violets all their odors hid
From every winsome, wooing breeze,
But opened wide their casket's lid
To waft their fragance to her knees.

The stars above shone forth more bright
When first Queen May at midnight came,
While Earth re-echoed through the night
The music of her Sovereign's name.

The Day-god, as the clouds uprolled,
Looked down with love-enraptured eye,
And Jove-like, sent a shower of gold
To woo her to his arms on high.

Pass on, bright May! We know full soon
Thou'lt leave us for a brighter land,
That even now thy lover, June,
Impatient waits to claim thy hand.

With him thou'lt leave the joys of Spring
To enter Summer's burning clime,
Forget thy sovereignty, to sing
Love's lowliest, tenderest, sweetest rhyme!

This, this is life, and May the token
Of every maiden young and fair,
In whose true heart each tie is broken
When Love assumes his empire there.

The passing year but mirrors life—
Its transient bliss, its fading bloom,
Its early dreams, its later strife,
The morning's glow, the evening's gloom;

Its Spring-time yearns for Summer's crown,
Its Summer envies Autum's gain,
Stern Autumn strives to win renown,
When Winter snaps life's trembling chain!

—*N. O. Morning Star.*

ASCENSION DAY.

BY WADSWORTH.

And the Lord Jesus, after he had spoken to them, was taken up into heaven, and sitteth on the right hand of God.—ST. MARK, XVI. 19.

See the Conqueror mounts in triumph,
See the King in royal state,
Riding on the clouds His chariot,
To His heavenly palace-gate;
Hark, the choirs of angel-voices
Joyful Hallelujahs sing!
And the portals high are lifted,
To receive their heavenly King.

Who is This that comes in glory,
With the trump of Jubilee?
Lord of battles, God of armies,
He has gained the victory;
He who on the cross did suffer,
He who frem the grave arose,
He has vanquished sin and Satan,
He by death has spoiled His foes,

Now our heavenly Aaron enters,
With His blood within the veil;
Joshua now is come to Canaan,
And the kings before Him quail;
Now He plants the tribes of Israel
In their promised resting-place;
Now our great Elijah offers
Double portion of His grace.

Thou hast raised our humain nature
On the clouds to God's right hand;
There we sit in heavenly places,
There with Thee in glory stand;
Jesus reigns, adored by angels;
Man with God is on the throne;
Mighty Lord, in Thine Ascension
We by faith behold our own.

Lift us up from earth to heaven,
Give us wings of faith and love,
Gales of holy aspirations
Wafting us to realms above;

That, with hearts and minds uplifted,
We with Christ our Lord may dwell,
Where He sits enthroned in glory
In the heavenly citadel.

So at last, when He appeareth,
We from out our graves may spring,
With our youth renewed like eagles,
Flocking round our heavenly King,
Caught up on the clouds of heaven,
And may meet Him in the air,
Rise to realms where He is reigning,
And may reign for ever there.

CANADIAN HISTORY.

Memoirs of the Richelieu.

No. VII.—ST. CHARLES.

The Richelieu valley from Chambly to Sorel was the centre of insurrection in 1837. The houses of its principal citizens were the rendez-vous of the ringleaders, two of its villages acquired a local renown, by being the scenes of battle and bloodshed, and its forests, mountains and ravines, like Sherwood in the days of the yeoman Robin Hood, were for a long time associated in the imagination of the young with the wanderings, privations and perils of the *patriotes*, on their way to a safe retreat beyond the frontier.

St. Charles is a pretty village, on the right bank of the Richelieu, some twenty-five miles above its mouth. The Seignior of the parish, Mr. Debartzch, connected by marriage with the ancient family of the St. Ours, distinguished himself as one of the principal chiefs of the Canadian party, at the time of the rebellion. A preliminary meeting took place at this mansion, at which the details of a provisional government were agreed upon, in case of success in the martial uprising which was then contemplated. It is charged, however, that he bid against Mr. Papineau for the headship of the new administration, and on being refused by Mr. Viger and others, turned against his former friends. This so incensed his followers that when he took refuge at St. Ours, in the bosom of his wife's family, his life was threatened and he encountered many dangers on the way.

It is well known that Mr. Papineau and Dr. O'Callaghan discountenanced an open appeal to arms. The enemies of the former pretend that this counsel was prompted by his fears, and that like most political leaders he was more of a speaker than a soldier. The same reproach, however, cannot be made to O'Callaghan, editor of the *Vindicator*, who was better acquainted with both sides of the situation, and who saw clearly, as he has since stated, "that the country was not prepared."

The views of Dr. Nelson, T. S. Brown and others prevailed over the masses, and the cry to arms resounded along the lower Richelieu, in the Autumn of 1836. The insurgents rendezvoused chiefly at St. Denis and St. Charles. At the latter village, they were powerfully entrenched. The plan of campaign, on the part of the authorities was a good one, and would have been decisive and probably bloodless, if it had succeeded. Col. Gore was to advance from Sorel with a strong column, and Col. Wetherall, with another from Chambly, was to form a junction with him. Both were to strike together, and, if possible, envelope the enemy on every side.

Col. Wetherall's detachment consisted of 330 men, a few mounted volunteers, and two pieces of artillery. His progress was very slow, for the bridges over the streams were broken down, and he had to feel his way with great caution, owing to the fact that Gore had failed to meet him at the appointed time. As we shall see in our next paper, that veteran officer had been repulsed at St. Denis.

When he reached a point a little above St. Charles, Wetherall was attacked by a party of rebel skirmishers. Driving these before him, he reached the entrenched camp of the *patriotes*. This was situated a little above the village of St. Charles, on land belonging to a certain Kussier and to Mr. Debartzch. The works consisted of an oblong, fenced in with felled trees and covered with earth. The river lay on one wing, a wooded hillock on the other, while the little garrison had a strong *point d'appui* in Debartzch's house and barn. The men, numbering seven hundred, were commanded by Mr. T. S. Brown. Many of them were poorly armed, but many of them had rifles, and the camp contained two pieces of cannon. The key of the position was the wooded hillock just mentioned. If Brown had defended that with sharp-shooters and artillery he would have made a strong fight, but when the first shot from Wetherall's ordnance shrieked through the air and struck the belfry on St. Charles' Church, Brown lost his presence of mind and fled from the camp. Wetherall took possession of the eminence, got his two guns into full play upon the insurgents and created havoc amongst them. His fire, however, was returned with spirit for a whole hour. A sortie was even attempted, with the view of dislodging him from his vantage ground. A select party threw themselves behind trees after the Indian fashion, and poured so galling a fire into Whetherall's flank, that he was obliged to detach a company or two to shake them off from the rear. At length the regulars received orders to fix bayonets and carried the works at one charge, amid great slaughter. The loss of the vanquished was 100 killed and 372 wounded. The camp was destroyed, and so was Debartzch's barn, but his house was spared.

Wetherall then returned to Montreal by way of Chambly and St. Johns—just before crossing the river he dispersed a party of insurgents at Point Olivier. In the *Petit Domaine*, on the spot where the St. Hilaire railway station now stands, a company of *patriotes* under Davignon were ready to intercept the passage of the British forces, but owing to the fears and exaggerations of scouts, they desisted from their attempt and disbanded.

In war, more especially, small events often entail important consequences. This was the case with the engagement at St. Charles. It may be said to have crushed the rebellion of 1837. St. Charles was the headquarters and entrenched camp of the insurgents. If Wetherall had been repulsed as Gore was at Saint Denis, the campaign, especially at so late a season of the year, would have been lost. As it was, the defeat of Brown broke up Nelson's organization, and discouraged thousands from following Cherrier at St. Eustache.

In this view of the case, the battle at St. Charles, November 25th 1837, may be set down as one of the remarkable incidents of Canadian history.—*St. Johns News.*

The Early French Settlers of Canada.

BY THE AUTHOR OF "MAPLE LEAVES."

Very different was the *status* of our early settlers to that of those who settled in other French colonies, or in some of the English ones. Canada never had to build up its fortunes on the success in after life of ex-convicts, ex-garrotters, or ex-ticket-of-leave men. Hardy farmers, industrious mechanics, soldiers, adventurous fishermen landed in crowds on the shores of a country reported to contain something more than fertile fields,—mineral wealth in exhaustless quantities. The first nobles of the French realm vied with one another in finding men and treasure to build up this New France, whose future so flattered the vanity of the great monarch. High-born women, such as the Duchesses de Bouillon, D'Aiguillon, and Madame de La Peltrie, undertook to provide virtuous young girls to go and seek their fortunes and husbands in this favored land. It is astonishing to see with what solicitude these emigrants were watched over before they left France, until they landed in Canada. In some cases, the slighthest indiscretion caused them to be sent back to where they came from. This is a very different version, let it be remembered, to that circulated by Baron Lahontan; but it is nevertheless the truth.

Many French gentlemen of ancient lineage, but unable to maintain their families in the extravagant splendour which obtained at Court, asked for concessions of Lands in Canada. The progeny of some of these *seigneurs* exist amongst us to this day. At that early period, none but gentlemen could obtain commissions in the French army; and it required Court influence to procure these appointments.

Canada was then singularly fortunate, both under French and under English dominion, in the class of settlers attracted to it. Under the latter, religious and political persecution deposited on its shores the cream of the population of other countries. The war of Independence in the New England provinces drove over our border crowds of the most educated, influential, and refined men, whose descendants exist and exercise a powerful influence amongst us to this day.

The historian Ferland has devoted the first fifteen pages of the second volume of his excellent work to vindicate his countrymen from the aspersions which some ignorant writers, such as Baron Lahontan, had attempted to fasten on them. The antecedents of the early settlers of St. Christopher, one of the West Indies, may have been doubtful; but, on reference to history, nothing of the kind can be imputed to New France. From 1621 to 1641, the emigration came plentifully from Perche, Normandy, Beauce, Ile de France, Saint Onge, Poitou, and le Pays d'Aunis. The Huguenots were not encouraged to settle, for fear of religions strife.

The Company of Rouen, and that of M. de Monts, which had preceded it, were under the control of merchants and traders, who resided chiefly in Normandy. It is, then, not surprising that they selected their *employés* at Rouen, at Dieppe, at Cherbourg, at Fecamp, and at Honfleur. These *employés* became familiarized with the country; and when England returned it to France in 1632, and France appeared inclined to keep it, they enticed over to Canada their friends and relatives, who occasionally sailed for America with their whole families. It was from Dieppe that Champlain, after his return from England, where he had been carried a prisoner by the English, sailed in 1633, with a party of officers, missionaries, and colonists. These pioneers had doubtless been taken from Normandy and the Pays de Caux—*From "New Dominion Monthly," for May.*

Small-Pox and Vaccination.

We copy from the *Pacific Medical and Surgical Journal*, facts upon which the public should be posted at all times.

"Small-pox does not tend to spread extensively in a city or district, unless quickened by an epidemic influence. It may exist in a city constantly, from year to year, a few cases at a time, without displaying an active contagion.

"During an epidemic aggravation *recent vaccination is the only safeguard.* Persons who have had small-pox, or who have been exposed to it in former years with impunity, as nurses and the like, are not secure from attack.

"The duration of an epidemic is from six months to a year. The disease seldom progresses steadily, but fluctuates without relation to the sensible changes of climate. Winter is the season most favorable to its prevalence.

"During an epidemic of small-pox, other diseases are more frequent and more fatal.

"Foul emanations from sewers and so forth have little to do with it. They affect the general health, but do not promote in a marked degree the spread or duration of the epidemic.

"When the disease is not epidemic, the morbific germs emanating from a patient soon lose their vitality. But when an epidemic influence prevails, these germs resist decay and infect the entire atmosphere. They do not cause sickness unless the condition of the individual be favorable to their development. In an infected city, many persons—perhaps most of the inhabitants—receive them in the blood without injury.

"Disinfectants, such as chlorine, carbolic acid, the fumes of sulphur, etc., will not destroy the germs of small-pox, unless they are strong enough to destroy human life. Sunlight, air, and heat are the best desinfectants. Clothing is perfectly desinfected by baking in an oven, or exposure for a short time to a heat at or above that of boiling water.

"The period of most active contagion is after the appearance of the eruption and during the process of scabbing. It is questioned by some good authorities whether the disease is contagious at all prior to the formation of pustules.

"Vaccination will not take perfectly a second time in more than one or two out of every one hundred persons.

"It will take partially, with some resemblance to the genuine cow-pox, in twenty-five per cent of the cases. Here the presumption is that re-vaccination was useful.

"A large scar is no evidence of genuine vaccination, nor is a large and painful sore. A spurious pustule is apt to be worse than the genuine vaccina.

"When re-vaccination is not followed by itching, or any other effect, it should be repeated. The virus may not have been active.

"No other matter should be employed than the lymph or crust from the first vaccination of a healthy child; or that taken from the cow. There is less uncertainty in the former than in the latter.

"The crust should never be kept long after mixing it with water. It develops a virulent poison.

"Evacuation of the pustules is advised not only to prevent pitting, but as possibly serviceable in lessening danger from secondary fever, and as a case in point it is stated thus: An entirely unexpected recovery of a very bad case, was effected by the patient opening of the pustule and wiping away of the matter by the wife of the patient, rapid improvement taking place at the time when the dreaded secondary fever should have set in."

Philology as One of the Sciences.

All great botanists, from Cæsalpinus down to Linné, had probably foreseen the establishment of a natural system, just as all great philologists, from Leibnitz down to Colebrooke, had realized the conception of linguistic families; but in both sciences the final establishment of the theory on a firm and scientific basis was left to others. Bopp in his "Vergleichende Grammatik," Pott in his "Etymologische Forschungen," did for language what was done for botany by Antoine Laurent de Jussieu in his immortal "Genera Plantarum." Borrowing from Magnol and Adanson the plan of arriving at a perfect natural system by means of the points of resemblance suggested by many artificial systems, Jussieu added the immensely important conception of a subordination of characters, and thus advanced the science, both in its structural and its classificatory branches, a long way towards its present position. Now, philology has its various branches no less than botany; its analysis of words corresponds to the study of vegetable structure; its arrangement of linguistic families to botanic classification; its examination of the functions of formative syllabes to organography; even its *Lautlehre*, or study of sounds, to microscopic histology. And in the present stage of these sciences the student who adds anything to our knowledge of one of these branches probably renders a service to them all. This is precisely what has been done by such "fellow-labourers with Hercules" as Bopp, and Grimm, and Pott. By that wide induction which led to the establishment of the laws that dominated alike in the resemblances and divergences of words, they introduced a cosmos of guiding principle into the chaos of multiplex phenomena. For instance, a botanist who was a mere corollist would not have been likely to class in the same natural order of Ranunculaceæ, plants so externally dissimilar as larkspur, columbine, and buttercup; one who based his orders on the superficial distinction between herbs and shrubs would not have put clematis in that order; and one who relied on the number of carpels would have separated from it the baneberry and the pæony. Nothing but a general observation of the resemblances and subordination of the differences would suffice to give a true conception of the order; and the philologist must go through an exactly similar process. Who, for instance, would think of comparing the Gothic *faihu*, "cattle," with the Latin *pecus*, if his etymology were founded on mere appearances? But now every etymologist is aware that the identity of these two words results from laws rigorously established by induction from an immense number of instances, beginning with the very simplest and ending in the most complex. Again, the examination of numerous species often enables botanists to account for an anomaly by proving that there has been some suppression; thus, in the primrose family, contrary to the alternate symmetry in which the different organs of flowers are usually arranged, the stamens are opposite to the petals. This would remain an anomaly, if in one of the species of the family—the samolus or brookweed—we did not find five scales representing five abortive petals which, had they been developed, would have re-established the alternation. This is exactly what the philologist finds. He compares, for instance, two such forms as δις and *bis*, and would be unable to understand the relation between them, if he were not aware that the original *dvis* involves both the *d* and the *b*. Once more, exactly as the botanist assumes a certain ideal symmetry, even when every species of a family deviates from it in one or other particular, so the philologist often assumes a primordial form which alone explains its divergent derivatives. If, for instances, he compares the Sanskrit *vahanti*, "they carry," with *vazenti* (Zend), ἐχοντι (Doric), *vehunt* (Latin), *vigand* (Gothic), he is led naturally to see the existence of a primitive form *vaghanti*; nor could he without the intervention of many varying forms conjecture the identity of the words *five* and *quinque*. Often in establishing such affinities he is unexpectedly aided by the discovery of some rare dialectic variety; exactly as the study of "sports" and monstrosities often enables a botanist to understand for the first time the structure of some irregular flower. A single instance of "Peloria" in botany—such, for instance, as that which sometimes elongates into a spur each petal of the toadflax—a single archaic form discovered in an inscription or in the fragments of a lost poet, like the long *a* of *aquila* in the line of Ennius—

"Et densis aquila pennis obnixa volabat,"

often furnishes the only explanation af a whole range of botanical or philological anomalies.—*Macmillan's Magazine.*

The Ruling Class in England, (1).

Several years ago, when the late Earl of Elgin, then Governor-general of Canada, visited Washington, he was entertained at dinner by President Pierce, and made a post-prandial speech, of which a

(1) From an article in the March No. of the "National Quarterly Review" edited by E. J. Sears, LL. D. New-York.

summary found its way into the newspapers. Comparing the government of the United States with that of Great Britain, he remarked that there was little real difference between the position and functions of the President in one country and the Premier in the other. He could observe only a single point of difference—namely, that the English Prime Minister might be said to hold office while he was popular, but that the American President could retain *his* position to the close of the term for which he was elected, unless he had been convicted, on impeachment for some crime against the Constitution; in other words, that our "President is an irremovable Prime Minister." In England, where parliament is supposed to represent "the collective wisdom of the nation," when a government measure of any importance is defeated in the House of Commons, the head of the administration has either to resign office, on the plea that he has lost the confidence of the representatives of the people, or to dissolve the existing parliament and thereby appeal to the nation at large, or to modify the measure objected to—though this is an admission of defeat and weakness—or like William Pitt, in 1784, and Benjamin Disraeli, in 1867-8, carry on the government with apparent nonchalance, as if nothing hostile had occurred.

There is yet another difference between the Head of the American government and the Prime Minister of England. From the beginning to the end of his presidential reign, the inhabitant of the White House at Washington is liable to be besieged with multitudinous solicitations for office — solicitations which, when supported by senators, members of the house of representatives, or powerful partisans, are very much in the nature of demands. In England, on the contrary, the Prime Minister has very little trouble in the dispensing of patronage, except during the anxious time—Mr. Gladstone took only eight or nine days last December—when he is forming his administration. The cabinet ministers are first appointed, after which, on consultation with these colleagues, the Premier proceeds to fill up the offices, many of them of the utmost importance, which are vacant. On a change of administration in England, there is not a general sweeping out of officials of all ranks and grades, as with us. Not more than forty-nine persons had to relinquish office, last December, when Mr. Disraeli made way, by resignation, for Mr. Gladstone, his great antagonist.

Every official appointment in the British Islands, not of a political character, is made during the good conduct of the recipient. The motto, "To the victor belong the spoils," however applicable it has been in this country, ever since the administration of General Jackson, has no practical significance in England, where only principals retire when the Premier resigns. No official can be summarily dismissed in that country, except on cause alleged and proven. Whenever a vacancy occurs, it is filled up by the Head of the particular Department with which the office is connected, and it is not usual to consult the Head of the government on the subject. He naturally claims and exercises the right of appointing to the higher offices. Therefore, whatever else may vex his mind, the pressure from without for appointments to office can scarcely trouble him.

The terms "cabinet" and "cabinet minister" are conventionally used in England, but the law has never formally recognized the organization they indicate. The cabinet is a select body, consisting of members of the Privy Council, in whom, for the time being, the whole of the sovereign's authority is vested. It is a principle of the British constitution, that "the king can do no wrong; and as he is thereby relieved of personal responsibility, his select and acting advisers are responsible, and govern the country. The consultations of the cabinet are always considered confidential and no record is kept of its resolutions of meetings. Its existence has never been recognized by any act of parliament. When the sovereign empowers any gentleman to form an administration, that person places himself at its head, as first lord of the treasury, sometimes combining with it the office of chancellor of the exchequer, as was done by Mr. Pitt in 1734; by Mr. Perceval in 1811; by Mr. Canning in 1827, and by Sir Robert Peel in 1834. He appoints his immediate colleagues. The Gladstone cabinet consists of fifteen persons, namely: Mr. Gladstone, first lord of the treasury; Mr. Robert Lowe, chancellor of the exchequer; Mr. H. A. Bruce, home secretary; Earl of Clarendon, foreign secretary; Earl Granville, colonial secretary; Mr. Edward Cardwell, war secretary; Duke of Argyll, India secretary; Mr. Chichester Fortescue, Irish secretary; Mr. H. C. Childers, first lord of the admiralty; Lord Hatherly, lord chancellor; Earl de Grey, president of the council; Earl of Kimberley, lord privy seal; Marquis of Hartington, postmaster general; Mr. J. G. Goschen, president of the poor law board; and Mr. John Bright, president of the board of trade.

The highest salary paid to any cabinet minister is £10,000 per annum, to the lord chancellor. The first lord of the treasury, the secretaries of state, and the chancellor of the exchequer, each receives £5,000 a year. In 1817, each of these salaries were as high as £6,000. When the first lord of the treasury is also chancellor of the exchequer, he receives £7,500 a year. These are high rates of renumeration, compared with ours; but it has been ascertained by exact calculation, that the salary of the first lord of the treasury is equivalent in value to a life annuity of about £338, commencing at the age of 21. Taking into account the uncertainties of success, the expenses of elections, the cost of living in London to attend parliament, and the average brief tenure of office, (three years,) it will be granted that the value of a successful statesman's salary is not considerable. In 1848, when Lord John Russell, then at the head of the government, was examined on salaries by a Committee of the House of Commons, he deposed that he had never been in debt until he became Prime Minister—so far did the expenses of that dignified station exceed its emoluments.

The salaries of the fifteen cabinet ministers now in office amount to £64,000 per annum, or, excluding the lord chancellor, who receives £10,000 per annum, (£6,000 as first equity judge, and £4,000 as speaker of the House of Lords,) to £54,000, divided thus: first lord of the treasury, home secretary, foreign secretary, colonial secretary, war secretary, India secretary, and chancellor of the exchequer, each £5,000 per annum; first lord of the admiralty, £4,500; chief secretary for Ireland, £4,000; post-master-general, £2,500; lord-president of the council, lord privy seal, president of the board of trade, and president of the poor law board, each £2,000 per annum. There are seventeen other leading ministers, political under-secretaries, not in the cabinet, who receive £27,000 a year. These are, first commissioner of works; vice-president of council of education; joint secretaries of the treasury; chancellor of the duchy of Lancaster; parliamentary secretary of the admiralty, and judge advocate-general, each £2,000 a year; five parliamentary under-secretaries of state and of board of trade, each £1,500; three junior lords of the treasury and secretary of poor law board, each £1,000 per annum. In every public department there is a permanent under-secretary, who carries on the actual work.

The lord lieutenant of Ireland receives £20,000 a year, which rarely covers the expenses of that vice-regal but costly office. The Irish lord-chancellor has £8,000. The Scottish ministers and the lord-advocate, virtually acting secretary of state, at £2,388, and the solicitor-general, £955; the attorney general and solicitor-general of England are paid by fees, estimated respectively at £15,000 and £8,000 per annum. The corresponding law-officers of Ireland, paid in the same way, may probably receive £5,000 and £3,000 a year. Out of the civil list or state allowance (1) to the queen, ten of the

(1) £385,000 per annum which sum many people have an idea is actually paid to the Queen every year. Such is not the case. The civil list is divided into six classes, to each of which we will briefly refer. Class 1, really represents the amount of money paid to her Majesty for her private use. This amount is £60,000, which is payable in monthly instalments so long as her Majesty lives. Class 2, which appropriates £131,260, is for the payment of the salaries of her Majesty's household. This busines is conducted by an official called the Paymaster of the Household; and when it is considered what a multiplicity of offices there are connected with the Court—from the lord of the bedchamber to the page of the backstairs—it can readily be imagined how easily the sum is expended. Class 3, appropriates a still higher sum of £172,500, and is for the expenses of the household. Royal housekeeping and royal parties and balls must be kept up on a royal scale, and any one who has visited the Buckingham Palace mews and the Windsor stables—not to mention the royal kitchen—will not wonder that this sum finds plenty of channels for its disposal. The amount of class 4 is small, and its purposes are almost entirely charitable. Out of the sum of £13,200, £9,000 is devoted to the payment of what are termed "Royal bounty grants," and special service awards." Grants from the royal bounty fund, which are in the gift of the Premier, are generally made to distressed literary men or women, or to the necessitous relations of deceased military or naval officers, or to others who have claims on the Government. "Special service" covers extraordinary payments, such, for instance, as the award made to the officer who first landed in England with the Abyssinian despatches from General Napier. The alms, or "Maunday" money, also come from Class 4, and to the amount of £2,000 are distributed by the Bishop of Oxford as Lord High Almoner. A further item of £1,200 is devoted to the payment of pensions to distressed ladies. These pensions, as they fall in through death, are in the gift of the wife of the Prime Minister for the time being. Class 5, which consists of the payments made as pensions to deserving literary and scientific persons, or to any that have deserved the gratitude of their country, does not come out of the £385,000 but by a special clause in the act before referred to the sum of £1,200 is set apart from the consolidated fund in each year of the Sovereign's reign for this purposes. The civil list pensions now amount to £17,000 after allowing for deaths. Class 6, may be regarded as a sort of reserve fund. The amount of it is £8,040, and it may be used towards meeting a deficiency in any of the other classes.—*Ed.*

chief officers, of her Majesty's household, namely: master of the horse, lord-steward, treasurer, comptroller of the household, captain of the corps of gentlement-at-arms, captain of the yeomen of the guard, lord-chamberlain, vice-chamberlain, master of the buckhounds, and mistress of the robes—receive £15,638 a year.

The result is that, on a change of ministry in England, only 49 persons have to leave office. Thus:

15 cabinet ministers receive.....	£64,000 per ann.
17 principal ministers and under-secretaries	27,000
2 Irish ministers.....	28,000
10 officers of Queen's household.....	15,638
	£134,638

Added to this is the estimate of fees received by the four law-officers of the crown in England and Ireland—say £31,000, and there are 49 persons, and no more, who make "their exits and their entrances," with the prime minister, when he relinquishes or accepts office. The salaries of these amount to £168,981 per annum, giving an average of nearly £3509 to each person. But the higher classes of professional men in England earn considerably larger incomes, with the advantage of their steady continuance, if not increase. Large as the ministerial salaries are, they are scarcely equal, except by a stricter economy than their recipients have leisure to practise, to support the outlay which is considered necessary for maintaining the dignity of high political stations.

SCIENCE.

Scientific Education in England.

(REPORT OF SELECT COMMITTEE OF THE HOUSE OF COMMONS, 1868.)

Communicated by DR. DAWSON.

On the 15th of July, 1868, the House of Commons ordered the printing of a blue book, of 480 pages, containing the report of a Select Committee to inquire into the provisions for giving instruction in Theoretical and Applied Science to the industrial classes. The Committee had called before it witnesses representing the "Department of Science and Art," the "Committee of Council on Education," the Government Colleges of Science and Naval Architecture," several of the Universities and Colleges in England, Scotland and Ireland and a great number of humbler schools, as well as of the great staple industries of the principal manufacturing town and districts. Out of the immense mass of information thus collected, a few points may be gleaned as of interest or importance here in Canada.

The "Science and Art Department" is a noble effort on the part of the British Government to diffuse practical knowledge and training among working men. It aids some 300 schools, scattered all over the Kingdom and on the fair and enlightened principle of paying for "results," as ascertained by rigorous examination of the pupils. Its funds are not squandered at the asking of political influence, but given as the earnings of the hard and profitable work of the teacher and pupil. Fourteen thousand pupils attend the schools, which are in great part evening schools, accessible to actual working people. For this work, the Department paid, in the year ending March, 1868, £144, 158; but of this only £13,500 were in direct payment to teachers, the remainder being for buildings, books, museums, examinations, &c. The subjects taught were such as mathematics, chemistry, natural philosophy, botany, zoology, physiology, geology, mechanics, navigation, mining, metallurgy, civil engineering, drawing, painting and modelling.

One curious point in the evidence on this subject bears on the difficulty of procuring good teachers. The reason is that "the demand for anybody who appears above the horizon with any scientific knowledge applicable to industry is so great that few of these people, comparatively speaking, turn into teachers." The witnesses examined ably maintain the practical value to the country of all the subjects above named, and distinctly state that they do not consider "technical instruction" in science schools, as including the teaching of trades. These can better be learned in the work-shop. The business of the science school is thus stated in the words of Lord Rosse's commission on the Science School of Dublin: "We do not consider that the practical applications of Science to industry or the arts themselves, should be undertaken by the college of science, as the special part of its teaching; its aim should rather be to impart a general and thorough knowledge of those branches of science which may be so applied, leaving it to the student subsequently to specialise his knowledge, and turn his attention in the direction he may find most suitable; but practical subjects, when capable of being rendered illustrative of scientific principles should in all cases be introduced into the course of instruction." Exception is, however, made in favor of such subjects as engineering mining, and navigation, which can be practically taught in schools. The object is not directly the work, but "the intelligence of the man in his work." Small aids are given under judicious conditions, to localities erecting suitable buildings for science schools, and any teacher who for two years has "passed" thirty students a year, is allowed a free trip to London at the expense of the Department," that he may visit the schools and museums in London and see what is going on."

Very varied results have attended the establishment of Science Schools; some have been ephemeral and of little value, others in the highest degree successful, and some of the largest and wealthiest manufacturing places have shown the utmost indifference to these schools, while others of less note have put forth the most energetic efforts in their behalf. Birmingham, it seems, is one of the former class, and the remark of one of the witnesses "so much the worse for Birmingham," is curiously illustrated in the appendix by a list of some scores of kinds of "Brummagem" goods which have, within the last few years, been wholly driven from the foreign and Colonial markets by the competition of the better educated artisans of France, Germany, and America.

Dr. Lyon Playfair brings out some curious points. One of these, in which he corroborates the statements of a previous witness, is that the iron girders for the Kensington Museum itself had been imported from Belgium, the manufacturers of that country bringing "more science" to their aid, and so selling cheaper than those of England.

The Science Schools of Switzerland are spoken of as a "typical system." They have "the best Elementary Schools, finishing "on half time work," and "special industrial schools, where students may be educated in the sciences bearing on their professions." Scotland takes the lead in Great Britain in science education in the Universities. "The four Scotch Untversities for very many years have given much more science instruction than the Universities of England, and the effect has been that they have got a great hold of the population." "There are more university students, in proportion to the population, in Scotland than in any other part of the world; there is one university student for every 866 of the Scotch population, while there is only one university student for every 5,445 of the population of England and one to every 2,894 of the population of Ireland, so that it will be seen that in Scotland we have got much more hold on the people on account mainly of our teaching subjects which relate to their future vocations in life." In connexion with this, it is stated that a chair of Civil Engineering has recently been established, a sum of £6,000 having been given by Sir David Baxter, and a like sum by the Government. An engineering workshop is also to be established, and the Government has spent £40,000 on the magnificent industrial museum connected with the University. The Government have further offered to double the size of the museum if the City Corporation undertakes to widen the street leading to it. The old Chair of Agriculture has also been put on an efficient footing. The Laboratories of Practical Chemistry in London, Manchester, and Edinburgh, are it appears too small to accommodate the students desiring access to them, and Dr. Playfair would "like to see the government give aid to two or three good laboratories throughout the country." Prussia has lately built two, one in Berlin and one in Bonn, at a cost of £50,000 each.

The school of mines in Jermyn street, London, an outgrowth of the geological survey of the United Kingdom is the leading institution of that class in Great Britain. It has lectures on geology, palæontology, natural philosophy, chemistry, mineralogy, metallurgy and mechanical drawing. It has 89 students of whom only 18 take the whole course; and it also delivers popular lectures and lectures to working men. Its comparatively limited number of students is attributed to apathy on the part of the mining people, to want of an educational head to the institution, to the too limited character of the course, its not being near the mining districts, and other causes. The students actually educated are said to have been eminently successful and useful. The cost of the school for teaching purposes is only £2,400 annually; and it is the opinion of witnesses examined that extention in various directions is required to bring out the full utility of the institution. More especially it requires more commodious rooms, the services of tutors, and additional professorships. Professor Huxley, however, claims that it cannot be regarded as a failure, its success being really great, in training highly useful men, and when tested with relation to the means employed.

Prof. Huxley's examination brought out incidentally, some strong opinions in regard to the neglect of science education in the older Universities, more especially Oxford and Cambridge. He regards

their courses of study as the reverse of the proper order, which according to him would be science first, and literature afterwards. He does not think that these Universities as at present constituted, will ever do any good with scientific education. The Professors of science are able, but no adequate encouragements are given, and the atmosphere of the Universities and their modes of study are uncongenial to science. He does not hesitate to say "I think that the spirit of the teaching at our older Universities is opposed to the spirit of scientific thought." Every scientific man knows there is some truth in this, in so far as college education is supposed to be a process of "reading" without the study of facts and things, and from the remnants of the old prejudice that education should be limited to training, merely in the sense of intellectual gymnastics, without reference to any practical results. Still Prof. Huxley is, as he himself admits, rather "revolutionary" in his ideas on this subject.

Prof. Huxley bears willing testimony to the value of the science teaching in the schools, already mentioned under the "Department of Science and Art. He has for several years been an examiner in physiology and Zoology, and states :—"I may say that there is now a very considerable amount of sound physiological knowledge displayed by the people who send up their answers to these examinations. I believe that this is a very great step, but it would be a pity that we should remain satisfied with this commencement, for I conceive there is a great and almost unlimited improvement possible in science teaching, and that, with regard to both of the objects which I have mentioned as being the great objects of science teaching, that is to say science on the one hand as knowledge, and on the other hand as educational discipline. The chief condition of that improvement is the development of the teaching power of the instructors. A great majority of the teachers now teach very much from books, because they do not understand that getting up books is by no means a good method of bringing about a knowledge of science. The consequence is that even the best of the teaching shows more or fewer of the defects of book teaching." The teachers require themselves to be taught the true character of the natural sciences as results of observation, experiment and comparison, rather than of "reading up," as the cant of the class-room phrases it.

The University of London has introduced with great success the degrees of Bachelor and Doctor of Science. Edinburgh has set the example of giving degrees in Agriculture, Engineering and Veterinary Science. Dr. Carpenter adds his testimony to that of Prof. Huxley as to the Education of men in schools and even colleges in which the Natural Sciences are not taught, leaving the mind in a state perfeetly helpless in relation to the study of objects and phenomena. This effect of "book knowledge," without applied science, is one well worthy of consideration, and to which too little attention has been given.

Owen's College, Manchester, is one of the newer institutions affiliated to the University of London, and much employed in science teaching. It was founded by John Owens, a merchant of Manchester, who bequeathed to it nearly £100,000. Its students, at first few, have risen to 173. It has also 324 students in evening classes, intended for the benefit of those who must work during the day. Since the foundation of the College, £20,000 has been left to it in benefactions of various kinds, chiefly for founding scholarships and building the laboratory. An endowment is being subscribed to establish a Chair of Engineering in this College, and this by members of the Engineering profession itself, who have given nearly £10,000 to this object already. It is considered desirable to raise a fund of £200,000 to extend the buildings of the College." Government has promised to give a sum equal to the subscription, and £60,000 has been already raised, with the hope that it will be increased to £100,000. It may be remarked here that the British Government have displayed equal liberality in the case of the University of Glasgow, having given £120,000 to its building fund, the people subscribing with a generosity which does them the utmost credit, £150,000, so that the Government which had promised to give a sum equal to that which the people might raise, was obliged to hold its hand on reaching the sum above stated.

Professor Jenkin, of the Institute of Civil Engineers, gives in his evidence some details as to the *Ecole des Ponts et Chaussées* at Paris. The students have to enter the Polytechnic School after an examination so rigorous that few men could pass it "who would not also be competent to take honours at Cambridge." There are about 900 candidates for 150 received. They remain in the school two years, receiving a severe training in mathematics and physics. They then pass by a further examination into the "Ecole des Ponts et Chaussées," where they must study not only all the branches of ordinary engineering, but maritime works, architecture, telegraphy, photography, &c. This is merely as pecimen of French Schools of applied Science. The "Ecoles des Mines" is another of the most important, and the "Ecole Centrale," a school of arts and manufactures, has no fewer than 490 students. In France the graduates of these schools are received into public employments, so that a great competition is at once established.

A large amount of testimony of an important character was obtained from manufacturers and merchants. One of these gentlemen, extensively engaged in the Birmingham hardware trade, testifies very strongly to the good effects of general diffusion of elementary education in the United States of America, where he had travelled extensively, and the manufacturers of which he proves to be successful competitors with those of Birmingham, even in the markets of India and China. His description of the difference between the American and English artisan, whether or not it be accepted as true in the particular case, is a graphic and accurate picture of the contrast between the educated and the uneducated workman. The subject is the relative facilities for improving and adapting articles of trade to special circumstances and wants. "The Englishman has not got the ductility of mind and the readiness of apprehension for a new thing which is required; he is unwilling to change the methods which he had been used to, and if he does change them he makes demands of price, by trade rules, which oppose the change of article. An American understands everything you say to him as well as a man from a college in England would; he helps the employer by his own acuteness and intelligence. On the one hand, I have a man who readily assists me on the road I am going, knowing some things which I do not know myself; and on the other hand, I have a man who stops me on the road, who puts his own ignorance in the way of my knowledge, exhausting me by the efforts I am forced to make to get past him, while he stands before me in the middle of the path."

It is to be observed, also, that this witness, who is the Chairman of the Chamber of Commerce at Birmingham, and evidently a thoughtful and observant man, regards the diffusion of a sound elementary education in America as equivalent to scientific education, inasmuch as it produces habits of observation, reading, and thought, which lead to the acquisition of knowledge of science. It thus supplies the want of direct scientific teaching. He also traces by conclusive evidence the decadence of many branches of manufacture in Birmingham to the competition of more highly educated minds in America and the Continent of Europe. We who stand in presence of the active and educated mind of the United States, should profit by this lesson, else it will be "so much the worse" for Canada.

The mine of educational knowledge in this Report could scarcely be exhansted in a dozen such articles as the present, but the lesson which it teaches as to the necessity of scientific education, both for the artisan and the higher classes, may readily be gathered from the extracts which have been given; and in conclusion we may quote the following summary of the recommendations of the report, which are necessarily limited to that department of the subject specially referred to the committee, namely, "the scientific education of the workingman." Parliament, they say, should be urged without delay — (1) "To organize secondary education," that is technical education of a practical character. (2) "To recognize instruction in natural science as an indispensable element in such education." (3) "To provide for the central, general and local administration of existing funds, with due regard to the wants and capabilities of each branch of industry." (4) "To press forward further measures for primary education." They also recommend the extension of higher schools and colleges of science and the granting of degrees in science in the older Universities.

The appointment of this Committee is itself an evidence that thinking men in England have become stirred with the conviction of the necessity of still further efforts in science education in that country. The present report will strengthen this conviction and indicate the means of carrying it into practical effect. May we not hope that some effects of this movement will extend to this country, and stir up even the somewhat sluggish public opinion of Canada to appreciate the necessity of that higher scientific culture, without which we shall aim in vain at the attainment of an honorable and prosperous nationality.

If we are asked how this may be best done, the answer is furnished by this report. Supposing that we have or can obtain good elementary and higher schools and colleges, we may introduce in the cities evening classes in science for artisans, the teachers paid, in part at least, according to results. Our commissioners of Schools are competent to do this, especially if they could have some special aid from Government. Science teaching should also be introduced to a greater extent than at present into our high schools and academies,—in the latter it might specially refer to agriculture and a reward might be held out to the teacher, by giving a fixed sum for each pupil who would pass the required examinations, while other aids could be given to the more able and successful in apparatus and other appliances.

Lastly, we might have special schools of science attached to our universities, and fitted to carry such instruction to that high level of scientific attainment and practical application reached in the polytechnic institutions, schools of mines and engineering and scientific colleges of more advanced countries. All this would cost some money, but if Canadian mind is to be cultivated as one of the great resources of the country, the money must be found and the more the better. Our Universities and other institutions already can supply many of the men required, and already possess large means in collections and apparatus waiting to be utilized, and by means of which the cost of scientific education might be much reduced. All that is needed is an energetic movement on the part of the government and the people.

ART.

The Uses of Paper.

There are very few articles applied to so many useful and ornamental purposes as paper, and although it may be remarked that we are behind some of the Oriental Nations, China and Japan, for instance in such application, yet, judging by the progress we have made within a few years, we may be expected soon to be in advance of those semi-civilized people whom we seem to be copying after. The opinion has been expressed that, at no very distant period, houses, and even large ships, may be made in greater part or wholly of paper. Japan produces excellent water-proof clothing from paper, and with proper treatment, this material may be rendered sufficiently tenacious, and, imbued with water-proof qualities, may be a better covering for naval purposes than the wooden planks or iron sheets now used.

In looking over the uses the Orientals have made of paper, we find that, besides serving for books and writing material, it is employed in the fabrication of screens and partition walls, for trunks, boxes, cases, clothing, handkerchiefs, twine, etc. It is fabricated to resemble leather, and is so used for saddles.

We have imitated those nations in some of our applications; for instance, since the price of leather has been so much enhanced, paper has become to some extent a substitute in the manufacture of travelling trunks, and forms so good an imitation that the deception is almost complete.

An establishment in Massachusetts is now engaged in the manufacture of paper belting as a substitute for the leather machine belts formerly used, and it is stated that one paper belt, 75 feet long and 8 inches wide, has been in use for several months, and shows good service. As substitutes for wood we find that paper has been for some time used in roofing, for boxes and table-tops; and more recently for pails, buckets, and barrels, which are claimed to be superior in many, if not in all respects, to the material they displace, and are represented as resisting wear and tear, and the action of the elements better than wood or iron.

The high price and also scarcity of cotton, not long ago, induced us to follow out an Oriental idea, and we had quite a passable twine, with which to tie up parcels contained in paper wrappers, made of the same material as the wrapper itself. A chemical preparation gives us a paper that takes the place of parchment, which it so strongly resembles that it takes the name of "parchment paper."

In lieu of cloth, we have used ornamental paper for tapestry and carpets, for curtains, and in our clothing, we employ it in cuffs, collars, bosoms, and buttons, hats and bonets, and it has been gravely proposed to substitute it in the manufacture of shirts, skirts, hosiery, and other under-clothing. It has also entered into the manufacture of boots and shoes.

In building houses it has become a common practice for the builders to buy the doors and windows already made. It is now proposed to supply them in like manner with the walls and ceilings, in the form of slabs, to be used as a substitute for lath and plaster. These slabs are made of cane fibre,—a cheap material obtained from the cane of the Southern canebrakes, by disintegration effected by the explosive force of steam, and costing about $10 a ton, mixed with clay, resin, size, and other cheap materials. The cane fibre is also made into paper of various kinds.

The following advantages are claimed for this new building material. In a few hours all the walls and ceilings of a house can be put up by nailing them to the ordinary battens upon which the laths are nailed. The work can be done as well in winter as in summer time, and no drying is required. The fibrous slabs do.not warp, crack, break, peel, shell, crumble, nor decay; and they keep out damp, heat, and cold, better than lath and plaster. They are somewhat similar, but asserted to be superior to the panels or wainscoting found in many palaces and mansions in England. Their cost is said to be less then half the cost of common lath and plaster. It is proposed to make them fire-proof and water-proof, that they may serve for the roofs and outer walls of houses better than clapboards and shingles.

According to estimates which have been made, the cost of an ordinary cottage house will be very much less than the present cost of a frame house of the same size; and it is claimed fibrous slab houses can be erected in less than one-fourth of the time now required to erect other houses.

One of the late uses of paper is its application in the manufacture of pails, wash-basins, pans, spittoons, etc.; and, strange as it may seem, it is nevertheles true that the above articles—as made by the American Papier Maché Manufacturing Company of Green Point, L. I., from a chemically prepared paper—are superior in many respects to any others before made. The paper from which these articles are manufactured is rendered impervious to the action of water or acids; the utensils can be placed in an oven till water will boil in them; placed in the sun at the hottest season, or exposed to the severest cold, without the slightest effect on them. Where wood would rot and iron rust, these articles are unaffected, and with proper usage would be as good as new. In pails, there is an advantage that water will not taste of the material and will never soak, and they will not fall in pieces; they are lighter than the wooden pail, and, being a non-conductor of heat, will keep water cool. The articles are coated with a vegetable composition which, even if it does wear off, does not affect their durability, and does not injure them except in appearance.—*American Artisan.*

The Portland "Argus" says, Walter Brown has brought home a new paper boat, of the Waters' patent, from a model of his own. This boat is 31½ feet long, 12 inches wide, and weighs but 22 pounds The lightest wooden boat ever built of similar dimensions weighed 41 pounds. The most singular part of the matter is that the boat is more than four times stronger than one of wood. All of it, save where the sculler sits, is gas-tight, so that in the event of a race sufficient gas may be taken into it to reduce its weight to 8 pounds. The displacement of water by such a craft will be very much less than that of a wooden boat, and the same exertion will propel it proportionately faster. Its strenght is also a great advantage.

OFFICIAL NOTICES.

Ministry of Public Instruction.

APPOINTMENTS.

BOARD OF EXAMINERS.

The Lieutenant-Governor was pleased on the 10th ult., by an Order in Council, to appoint the following Gentlemen members of the Beauce Board of Examiners:

Henri Elzéar Taschereau, Esq., in the room and stead of the Honorable A. De Léry, whose resignation has been accepted;

The Rev. Mr. Louis Antoine Martel, in the room and stead of the Rev. Mr. John Nelligan, deceased;

Zéphirin Vézina, Esq., in the room and stead of Dr. R. A. Fortier, whose resignation has been accepted, and

The Rev. Mr. François Xavier Tessier.

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DIPLOMAS GRANTED BY BOARDS OF EXAMINERS.

THREE RIVERS BOARD.

Session of February 2nd 1869.

ELEMENTARY SCHOOL DIPLOMA, (F.) 1*st Class*:—Misses M. Olivine Bergeron, M. A. Gléphise Brière, M. Joséphine Moreaux, and M. Délima Veillet

J. M. DÉSILETS,
Secretary.

—

Session of May 4th 1869.

MODEL SCHOOL DIPLOMA, (F.) 1*st Class*:—Misses J. C. Rosalie Béliveau, M. Elzire Bourbeau, Julie Beauchemin, M. Anna Chandonnet, M. Délia. Demers, and M. Léontine Hébert, (F. & E.)

ELEMENTARY SCHOOL DIPLOMA, (F.) 1*st Class*:— Misses Philomène Allard, M. Esther Elodie Beaudoin, M. Délima Bergeron, Edwige Blondin, M. Délima Bergeron, Mathilde Caillé, Marie Célina Côté, Adéline Dupont, Lucie Delphine Gauvin, M. Elise Lanouette, Marie Firmine Leblanc, Marie Julie Moreau, Adélaïde Mélanie Nourri, Philomène Lumina Provencher, M. Clarice (*alias* Clara) Petit, M. Louise Proteau, Marie Zélie Tessier, M. Agnès Tourigny, Marie Desneiges Veilleux, and Célina Vigneau.

2*nd Class*:—Misses Célina Gervais *dit* Talbot, M. Georgianna Lesieur, and M. Zoé Géorgine Lemire.

J. M. DÉSILETS, Secretary.

RIMOUSKI BOARD.

Session of May 4th 1869.

ELEMENTARY SCHOOL DIPLOMA, (F.) 1*st Class*: — Misses Joséphine Bernier and Marcelline Langis.

2*nd Class*:—Misses Mathilde Déchène, Françoise Ouellet, and Joséphine Parant.

P. DUMAS, Secretary.

—

SHERBROOKE BOARD.

Session of May 4th 1869.

MODEL SCHOOL DIPLOMA, (E.) 1*st Class*:—Miss Susan Augusta True.

2*nd Class*:—Mr. Henry E. Rankin.

ELEMENTARY SCHOOL DIPLOMA, (F.) 1*st Class*:—Miss Leonce Barlow.

2*nd Class*:—(E.) Misses Mary Bottom, Susan Barnard, Maria Hall, Hannah A. Osgood, and Marion A. Sommers.

S. A. HURD, Secretary.

—

RICHMOND CATHOLIC BOARD.

Session of May 4th 1869.

ELEMENTARY SCHOOL DIPLOMA, (E. & F.) 1*st Class*.—Misses Marie Esther Bitner, Belzémire Fafard (F.), Marie Hedwidge Hebert, Marie Rose de Lima Laurendeau, Marie Eulalie Lacourse, Delphine Mailhiot, Marie Emma Nolin, Marie Louise Sévèrine Richer, Marie Adéline Roy, Emélie Savoie, Marie Délima Savoie, and Mary Sinnott (E.).

2*nd Class*:—(F.) Misses Marie Emelie Cormier, Julie Hebert, Sophie Leclerc, and Belzémire Moffatt.

F. A. BRIEN, Secretary.

—

CHARLEVOIX AND SAGUENAY BOARD.

Session of May 4th 1869.

ELEMENTARY SCHOOL DIPLOMA, (F.) 1*st Class*: — Misses Eléonore Simard, Marie L. Desbiens, Virginie Martel, Eugénie Boudreau, and Marie Vitaline St. Hilaire.

2*nd Class*:—(F.) Misses Lydie Tremblay, Philomène Tremblay, and Hermine Duchesne.

M. BOIVIN, Secretary.

—

STANSTEAD BOARD.

Session of May 4th 1869.

ELEMENTARY SCHOOL DIPLOMA, (E.) 1*st Class*:—Misses Mary J. Lorimer, Hattie L. Blount, Estella A. Kinney, Nancy W. Cushing, Lydia J. Mitson, and Addie Kimpton.

2*nd Class*:—(E.) Misses Maggie Boyle and Florence E. Rexford.

C. A. RICHARDSON, Secretary.

SITUATION WANTED

By 1st June next, by a Young Lady of the Episcopal Church, holding McGill Normal School Diploma and satisfactory references. Address: Dr. Miles, Education Office, Quebec.

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WANTED.

A Catholic Teacher, with an Elementary School Diploma, competent to teach English and French.—Salary: £50 0d. per annum; half cash, and half country produce. Apply until 15th July next, to William Gray, Secretary-Treasurer, Shoolbred, Co. of Bonaventure, Q.

DONATIONS TO THE LIBRARY OF THE DEPARTMENT OF PUBLIC INSTRUCTION.

The Hon. the Minister of Public Instruction acknowledges with thanks, from T. Laurie & Co., Edinburgh, the following donation presented to the library of the Department.

Maxwell's First Lessons in Geography.
Curries Rudimentary English Grammar.
First Steps in English Composition.
Henry's First History of England.
Laurie's Catologue of Class Books, Apparatus &c.

THE JOURNAL OF EDUCATION.

QUEBEC, PROVINCE OF QUEBEC, MAY, 1869.

The New Education Bill.

As we published in our last number the Act amending the law relating to Education in this Province, its principal provisions must by this time be familiar to our readers.

Whatever difference of opinion may exist about its details, there is every reason to hope that it will set at rest those questions which were likely to disturb the harmony and good feeling existing among the different classes of the population of the Province.

The clauses which have reference to a separation of the Council of the Department of Public Instruction into two sections, Catholic and Protestant,—are optional,—and left to the choice of a majority of the Catholic or Protestant Members, as the case may be. The law has wisely provided that this power cannot be exercised at the caprice of any malcontent, or merely on account of some disappointment purely temporary.

In case the prescribed number of Members of one or other section of the Council decide on a separation,—to date from that moment,—all the expenses of the Government for education, will be divided between Catholics and Protestants according to population.

Henceforward the distribution of the Grant for Superior Education, between Catholic and Protestant Institutions, will be on the basis of population. Hitherto, Protestant Institutions have received more than their share according to population; this state of things dates as far back as the first distribution made by the Legislature, before the creation of a Fund for Superior Education, and before the law which establisbed it had conferred on the Department of Public Instruction, the power of making the distribution according to the returns furnished by each institution.

As it is probable that many Municipalities may suffer from the clause which permits non-resident proprietors to declare themselves dissentients, the Supplementary Grant in favour of Poor-School Municipalities has been doubled in order to remedy this inconvenience. The sum of $4000 which has been added will be principally devoted to this end. Any Municipalities that may suffer from the operations of the New Act will do well to make known, to the Minister of Public Instruction, as promptly as possible, what will be the diminution of their revenue, in order to have their share of the Supplementary Grant.

The new Act has been printed in pamphlet form, and Municipalities particularly interested—and not finding the pub-

lication in our last number sufficient—may have a copy on application to the Minister of Public Instruction. Secretary-Treasurers would do well to read carefully the clauses which relate to dissent, and in case they have any doubts, they should at once write to the Department for instructions.

Annual Convocation--McGill University.

The members of Convocation assembled in the William Molson Hall, on Monday, May 3rd, at 3 p.m. Prayers were read by the Venerable Archdeacon Leach, after which the Honours, Prizes and Standing awarded to Students were announced by the Dean of the Faculty of Arts as follows:

FACULTY OF ARTS.

PASSED FOR THE DEGREE OF B. A.

McGILL COLLEGE

In Honours.—Wallace Clarke, Montreal; Edward B. Greenshields, Montreal; Bernard J. Harrington, St. Andrews; Montgomery Jones, Montreal; Frederick A. Kahler, Montreal; Albert R. Lewis, Nunda, N. Y.; Robert A. Mackenzie, Montreal; Breadalbane McLaen, Stayner, Ont.

Ordinary.—Frank O. Wood, Montreal; Thos. Franklin Wood, Dunham.

MORRIN COLLEGE.

Ordinary.—Archibald Hay Cook, Quebec; John Fraser, Quebec; Henry Russell, Quebec.

PASSED IN THE IMTERMEDIATE EXAMINATION.

McGILL COLLEGE.

Class 1.—John D. Cline, Cornwall; James Cameron, Lancaster; Fredk. W. Kelly, Stewiacke, N. S.; Edward T. Torrance, Montreal; William J. Day, Kenyon, Ont.—*Class II.*—Hutcheson, James S. Tupper, Halifax, N. S.; Duncan McGregor, Hamilton, Ont.—*Class III.*—Gustavus Munro, Lancaster, Ont.

MORRIN COLLEGE.

Class III.—Henry Russell, Quebec.

BACHELORS OF ARTS TAKING THE DEGREE OF M. A. IN COURSE.

Bethune, Meredith Blenkarne; Hart, Lewis A.; Perrigo, James; Tabb, Silas Everett; Wotherspoon, Ivan Tolkien.

Graduating Class.

B. A. Honours in Classics.—Kahler Frederick A.—First Rank Honours and *Chapman Gold Medal*; McLean, Breadalbane S.—Second Rank Honours.—*B. A. Honours in Mental and Moral Philosophy.*—Greenshields, Edward B.—First Rank Honours and *Prince of Wales Medal*; Mackenzie Robert.—First Rank Honours.—*B. A. Honours in Natural Science.*—Harrington, Bernard G.—First Rank Honours and *Logan Gold Medal.*—*B. A. Honours in English Literature.*—Clark, Wallace—First Rank Honours and *Shakespeare Gold Medal.*—Lewis, Albert R.—First Rank Honours; Jones, Montgomery.—First Rank Honours.

SESSIONAL EXAMINATIONS, 1868-69.

CLASSIFICATION OF STUDENTS IN THE SEVERAL SUBJECTS.

GREEK.

Ordinary B. A.—Class I.—McLean, Kahler. *Class II.*—None. *Class III.*—None.—*Third Year.—Class I.*—Robertson, (prize); Johnston, Joseph, Morrison, McLennan. *Class II.*—None. *Class III.*—Major. *Second Year.—Class I.*—Cline, Torrance, Cameron, Hutchinson. *Class II.*—Kelly, McGregor, Tupper, Day. *Class III.* Munro, McLeod. *First Year.—Class I.*—Hodge, (prize); Cross, Naylor, Maxwell, Crothers, Allworth. *Class II.*—Torrance, (John Fraser); Thomson and Shepherd, equal; Taylor, Munroe; Christie and Whillans, equal. *Class III.*—McIntyre, Geddes; Claris and Windham, equal.

LATIN.

Ordinary B. A.—Class I.—Kahler, McLean. *Class II.*—None. *Class III.*—None. *Third Year.—Class I.*—Joseph, McLennan and Robertson, equal; Morrison. *Class II.*—Johnston and Major, equal. *Class III.*—None. *Second Year.—Class I.*—Cline; Cameron and Torrance, (E. F.) equal; Kelley, Hutchinson, Tupper. *Class II.*—McGregor, Dey, Farish, Munro. *Class III.*—None. *First Year.—Class I.*—Hodge, (prize); Crothers and Naylor, equal; Maxwell, Thomson, Allworth, Torrance, (Jno. Fraser). *Class II.*—Cross; Shepherd and Taylor, equal; Christie and Whillans, equal; Munro. *Class III.*—Wales, Windham, Claris.

HISTORY.

Ordinary B. A.—Class I.—Lewis, Clarke, Jones. *Class II.*—None. *Class III.*—None. *First Year.—Class I.*—Hodge, (prize); Thomson and Torrance, equal; Maxwell; Naylor and Allworth, equal. *Class II.*—Windham; Cross, Munro and Whillans, equal; Crothers, Shepherd, Mitchell. *Class III.*—Christie, Wales, Claris, Taylor, Balch.

LOGIC, MENTAL AND MORAL PHILOSOPHY AND ENGLISH LITERATURE.

B. A. Ordinary Examination.—(Mental and Moral Philosophy.) *Class I.*—Greenshields, McKenzie.—*B. A. Ordinary Examination.*—(English Literature.)—*Class I.*—Clarke. Lewis Jones.

Governor General's Entrance Scholarships.—Maxwell (John); Naylor (Wm. Herbert); Torrance (John Fraser).—*Chapman prize in Clasics.*—Blackadder (Alexander D).—*Shakespeare prize in English Literature.*—Clarke (Wallace).—*Second Year.—Mathematical Prize.*—(Surplus of Anne Molson Medal Fund.) Cline (J. D.) —*Jane Redpath Exhibition* ($100)—Blackadder (Alexander D.)

Mr. Montgomery Jones, of Montreal, read the Valedictory on behalf of his fellow graduates in Arts. The Rev. Dr. DeSola then addressed the Graduates, but we regret space will not permit us to give it.

The Rev. John Cook, D.D., Principal of Morin College, Quebec, then delivered the following address, for a report of which we are indebted to the *Chronicle.*

I do not know that I have anything to say which would entitle me to take up the time of the Convocation, but as I have been called upon, I may at least express the pleasure with which I have witnessed the proceedings of this day. It is pleasant to find that in this great commercial city, there are halls set apart for the quiet pursuits of literature and science—that there are men able and zealous in imparting, and youth earnest and ardent in receiving instruction in the higher branches of education. It is pleasant to see so many of the alumni of former days acknowledging their *Alma Mater*, and leaving their ordinary pursuits, to gather within her walls, and witness the honors she confers on her youngest sons. It is pleasant to fancy the home histories connected with each of these honors, and the happy feelings of mothers and sisters on the occasion; and he must be cold-hearted indeed, who does not sympathise with the youths themselves, receiving the academic stamp of approval, for diligence and success in their studies. There is one of the graduates from this city, whose appearance to-day, and the special honors conferred on him, I may be permitted to say, I regard with special interest and satisfaction, though, as is the case with most human things, those feelings are unavoidably mingled with others of a sadder kind—with wishes that are vain, and regrets that can only be soothed and softened by unfaltering trust in that Divine Providence, who doth all things well.

The young men who have this day received degrees will not, I am sure, imagine that, having obtained them, they may stay further proceedings in mental cultivation, and in the acquisition of knowledge. They who have profited most by academic training will see most clearly how short a way they have yet proceeded towards all which is attainable in any department of human knowledge. It is much if they have acquired that amount of general information which will enable them henceforth to apprehend and to appreciate the results of ampler knowledge, and more profound research. Though in the battle of life, under the pressure of its necessities, and in the enjoyment of its pleasures, they should never advance further, it is much to be able to render to those whose tastes and talents and opportunities enable them to give to the world the results of scientific investigation, and learned labor, the stimulus and the reward of an intelligent sympathy. A university cannot make all its graduates men of learning and science; but it may be expected to raise up a public, ever increasing in number, capable of appreciating both; and there is no way in which either can be more effectually advanced. The philosophic mind like others craves sympathy, and rejoices in it when it is cordial and intelligent. The astronomer calculating the courses of the heavens; the metaphysician in his most abstruse investigations into the science of mind and being; the geologist, reading with as sharp and clear an eye as his who presides over this University, the history of past ages, which God has written on the crust of the earth, have all a desire for the sympathy of their fellows, and are cheered by the thought that even in the busy walks of commercial life there are those, who can understand and enjoy the fruit of their labor.

But while this much may be expected of all who leave these walls, with such honors as a university confers, it may be expected of some, it may be expected of not a few, that they have found special departments of human knowledge suited to their peculiar tastes and capacities, and to advance in which they will, as opportunity serves, continue to devote themselves. A taste for intellectual occupation and attainment, is both in itself a source of pure and refined gratification, and as against sundry temptations to which all are subject, it is an additional safeguard to moral principle, and religious feeling. It would be a miserable termination to an academic course for a student having attained his degree to consider himself entitled to throw aside his books and to become thenceforth indifferent to the charm of ancient learning, or the progress of modern science. The education of the mind, as a matter of choice and wise consideration should be an object throughout all life.

And there is always room and scope for such education. There is not one of the multifarious departments of human knowledge which might not furnish the materials for a life work, and which materials even a life work would leave unexhausted. I think of all feelings, in professor or student, the most natural, as it is certainly the most reasonable, is humility. A little learning may sometimes make a man proud—though even a little learning should extend a man's knowledge of his ignorance. A little more would certainly do it, and give rise to a very humble sense of the limit put upon human attainments, even in the line of what is known, or knowable. Any of the subjects of the curriculum may illustrate this. Take what may seem the simplest—the English language. One cannot enter seriously on the study of it without having to deal with many questions—questions in regard to the origin of language—questions in regard to the history of language in general, and of the English language in particular—questions curious as matters of antiquarian research—questions interesting to the metaphysician, as affecting the influence of mental working and affections on language—and the subtler and more recondite influence, which words in return exercise on the actings of the mind—questions interesting to the moralist, as shewing the progress in moral apprehension at different periods, and in different stages of the world's progress—questions which it would take not a portion of an academic session, but a life time to be moderately versed in. And it is the same with other subjects—in the consideration of which, the reflection, that there is so much to be learned while the power of acquiring and the time and opportunity for acquiring are so limited, may seem fitted not only to humble the pride of intellect, but to discourage exertion.

But then it is to be remembered this life is not all. On the instinctive expectation of mankind, and the conclusions which reason has ventured timidly to draw in regard of a future life, Christianity, with the full weight of its special evidence and authority has set its seal, affirming the continuity of moral and intelligent life, notwithstanding the shock of death, and the termination of all sensible communion here with the departed. I am fain to believe in this continuity, and to hold to the conviction, that intellectual and moral progress, however it may be stimulated by new circumstances, will go on, according to much the same laws and principles, which obtain here. The capacity of progress is man's chief attribute. It will not surely be taken away in the higher state, to which he is taught to aspire. And there will be scope for it for ever, in an ever advancing knowledge of the works and ways of God. A good Bishop of the Church of England thought the source of the heavenly happiness would be holy love, and holy music—a true description, so far—and extensive also, if by the first of these, we understand all good affections increased, and increasing in strength, and directed in the right measure and degree to every suitable object—and by the second, the capacity of giving a right, complete and harmonious expression to them. But it left out the intellect, which is as much a constituent part of man, and for which there will doubtless be provided never ending occupation, and larger enjoyments and nobler triumphs than can be gained now.

I shall now conclude, with expressing my hearty wishes for the prosperity of McGill University; and the pleasure with which I see you presiding here, having recently had experience that you are an earnest friend of superior education. It would be honorable to the Provincial Goverment, and tend to conciliate a numerous and important class of the community, if consulting the necessities of the case, rather than standing on the principle of numbers, it were prepared to yield to the University a generous support, for which it would in time receive an ample recompense. But if that may not be, it is to be hoped that as the University owes its origin not to public, but private munificence, it may also continue to be nourished and extended by the same, and ever have its share in the growing wealth and prosperity of the city.

Principal Dawson, LL. D., then delivered the following address, which was warmly received:

Mr. President and Gentlemen of Convocation,

In referring as usual to the educational history of the University in the past year, I have to state, in the first place, that we cannot boast of any increase in the number of our students. In the present session, the total number of students in the three faculties of McGill College is 259. Those of our two affiliated Colleges raise this number to 275, and if we add the teachers in training in the Normal School, who may fairly be reckoned as professional students, our total number will reach 350. In addition to these, there are 218 boys in the High School Departement, and 343 pupils in the Model School connected with the Normal School, making a total number of more than 900 students and pupils, of whom, at least, 200 are persons not resident in Montreal, but attracted to it by the educational advantages which we offer.

The number of degrees granted in the past session has been large. We shall confer in the present meeting of Convocation 72 ordinary degrees, viz. 15 in law, 39 in medecine, and 18 in arts, beside two degrees *ad eundem*.

At our last meeting, I announced that a subscription was in progress for the erection of a fire proof building for the Carpenter Collection of Shells. The building has been erected, and is now being furnished with cases. The collection will be placed in it before the beginning of next session and I flatter myself that it will be a model of neatness, economy, and utility in its arrangements. The whole amount required for its completion has not yet been subscribed; but there can be no doubt that the balance will be furnished by the liberality of some of our many friends. I have the further satisfaction of stating to those who have aided in this work that the additional space secured will enable us to extend and better display our geological collections, more especially those of fossils and economic geology; and that before next session, we hope to have a teaching collection in natural science, unsurpassed, if equalled, in this country, the whole accumulated without any expense to the general funds of the University.

The still more important subject of scholarships and other aids to deserving students was also referred to at our last meeting, and I have now much pleasure in mentioning the fact that we have already received two benefactions of this kind, and have the near prospect of a third. The honour of taking the lead in this matter belongs to Mrs. Redpath, of Terrace Bank, whose liberal gift of $100 annually for an Exhibition in the faculty of arts, will head, what I hope will be in the future, the long roll of exhibitions, scholarships, and fellowships in this University. The example thus set has been promptly followed by the members of the Board of Governors, who, by a private subscription among themselves, have established a scholarship of similar amount. A few weeks ago I was much gratified by receiving from one of our graduates a cheque for $100, as an offering of gratitude to his *alma mater*, from his first professional earnings, with the request that it might be employed in the manner most likely to be useful. The idea was suggested by another graduate that it might be made the nucleus of a graduates' Exhibition. This is being followed up, and if successful, it may, I think, be regarded as marking an era in the history of the University—that in which its own sons will return to pour into its treasury the tribute of their affection and gratitude.

Turning from these pleasing and encouraging features of the past year, I have to notice with regret the fact that the Legislature of this Province has in its recent session adopted, with reference to the grants to superior education, a principle at once unjust and discreditable, and which will probably still further diminish the slender aids received by this University under the former Constitution of Canada. The fourth clause of the new Educational Act, paraded in certain quarters as an instance of wonderful liberality, enacts the strange provision that all state aids to superior education shall, in the first instance, be divided into two portions, according to population, as between Roman Catholics and Protestants, instead of distributing these sums as common sense and justice and the practice of other countries would dictate in proportion to the nature of the education given and the results attained. Under this arrangement, the English and Protestant minority, who have more important and useful institutions relatively to their members, though not relatively to their wealth and intelligence and to the amount which they contribute to the revenue, will receive very little assistance from the annual grants, while all the large public endowments, granted by the liberality of past governments remain in the hands of the majority. I do not deprecate this result for our own sakes, so much as for the sake of the country, to which we have for so many years,—

thanks to James McGill and the wealthy merchants of Montreal,—offered the inestimable benefits of a liberal education, and for which, with added means, we could do so much more good. If need be, there are friends of education in this Province who are able and willing to make up for the short-comings of the state.

Perhaps of all the educational wants of Canada at the present moment, the most pressing is that of schools of practical science. During the thirteen years in which I have been connected with this University, I have never ceased to urge the importance of this subject, and its close connection with our College work; and the University has steadily continued to extend its appliances for such work, in the hope that the time would come to render them useful. We have also endeavoured to establish courses in agriculture, engineering, and practical chemistry; and were I to enter into the details of the efforts we have put forth, and the sacrifices we have made, it would be easy to show that if we have been successful only to a limited extent, the blame rests not with us. In the meantime, the Mother Country, the United States, and the various nations of the continent of Europe, have been vieing with each other in the effort to establish and extend science schools, and aids have poured in to these institutions from the liberality of the state and of private benefactors, while crowds of young men have flocked to their classes. How to train mind for the practical work of life in the higher departments of art and industry, is the great educational question of the day in every country claiming to be civilized. Had means been given, we might have taken a leading place in this march of practical science. The question now is, how can we avoid being hopelessly distanced in the race? We cannot hope that either natural resources or legislative enactments promotive of arts and manufactures, will be of much service to us until we give a higher and more general scientific training to our young men. Nor is there any need here of any difference of opinion between the promoters of literary and scientific education. Both exist in this country in a condition which invites mutual aid rather than controversy. No academical institution can safely afford to disregard practical science, and any attempt to establish scientific schools of high grade can attain success only by taking advantage of what the academical institutions have already done. Hence there is no room for those controversies which have raged elsewhere; but on the contrary, every inducement to union of effort on the part of all who truly love our country and desire its prosperity. In all such efforts, the authorities of this University are most ready to co-operate, and freely to give all the great educational means and appliances which we have accumulated. I sincerely trust that the time is fast approaching when the reproach of wanting altogether practical schools of science will be removed from Canada, and when our young men will be able to receive at home not only a thorough academical training, but that culture in applied science which shall fit them to take leading parts in the development of our material resources.—*Daily News.*

Books and Current Exchanges Received.

Annual Report of the Superintendent of Public Instruction for the State of Wisconsin, for the year ending August 31, 1868.

Sixteenth Report of the Superintendent of Public Instrction for the State of Indiana, for the years ending respectively 31st August, 1867 and 1868.

Thirty-Second Annual Report of the Board of Education for the State of Massachusetts, together with the Thirty-Second Annual Report of the Secretary of the Board.

Report of the State Superintendent of Public Education for the State of Louisiana, for 1867 and 1868.

"Emigration to Canada."—A pamphlet published by the Department of Agriculture and Public Works, Ontario, pp. 39 with maps.

Twenty-sixth Annual Report of the Public Schools of Rochester.

The R. I. Schoolmaster, Vol. XIV., for May.

Educational Gazette, (No. 2) Philadelphia, for April

The California Teacher, Nos. 9 and 10 for March and April.

The Missouri Dental Journal, Vol 1, No. 3 for March. [The only one received.]

Kentucky Journal of Education, Vol. 1, No. 3 for March.

Leisure Hours for April. A very readable number.

The Minnesota Teacher and Journal of Education for March and April

The Michigan Teacher for March and April.

The Pennsylvania School Journal for April.

The Massachusetts Teacher for March, April and May.

The Indiana Teacher for March, April and May.

Packard's Monthly for March, April and May.

The Illinois Teacher for March and April.

The Young Crusader for January, February, March, April and May,—being the only Nos. yet published. Its reading matter is very suitable for youth.

The Maine Journal of Education for April.

The National Normal, edited and published by R. H. Holbrook, 176 Elm st., Cincinati, O., Nos. 1, 2, 3, 4, 5 and 6. This is a new competitor for fame and is sure to earn it.

The Manufacturer and Builder, (April and May.) A Practical Journal of Industrial Progress. Every Manufacturer, Builder, Architect, Mason, Carpenter, Blacksmith, Operative, Mechanic, Painter, Plumber, Reading Room, and Library should have it.—Only $1.50 a year. Clubs of more than twenty, $1.00 per year.

American Educational Monthly for March, April, May and June. One of our best Exchanges.

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This valuable Magazine is published by J. L. Peters, 198 Broadway, New-York, (P. C. Box 5429.)

The Nursery for May.

Hearth and Home, up to the latest date.

The Mount Auburn Index for April and May.

We have also received some Poetry by Miss Emily Bacon, Teacher, Hatley.

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

—A curious work has been published at Breslau, Prussia, giving the result of an examination of the eyes of ten thousand and sixty school children. The proportion of short-sighted children was 17.1 per cent., or seventeen hundred and thirty among ten thousand and sixty. No village children were found to be short-sighted until they had been some time at school—at least half a year. There were, in proportion, four times as many short-sighted children in the town (Breslau) as in the country, and short-sightedness increased generally with the demands made upon the children. The author of the work attributes the evil in a great measure to the bad construction of school benches, which force the children to read with their books close before their eyes, and with their heads held downwards.

—S. Augustus Mitchell, the author of a series of school Geographies deservedly popular, died in Philadelphia a few weeks ago. Mr. Mitchell had been engaged in Geographical pursuits for more than forty years, and his works bear witness to the assiduity and care which were displayed by him.

—The cause of equal education for women seems to be nearer its accomplishment in Iowa than elsewhere. By a constitutional provision, women are admitted on the same terms as men into the University, and a large number have presented themselves for admission.

— The Elmira *Gazette* says: "The entire gift of Ezra Cornell to the University will amount to about $2,200,000. Twenty years or so ago, Ezra could not pay his grocer's bill!"

— The Senate of the London University have accepted a gift of £2,000 from Dr. Neil Arnott, to found an exhibition in Physical Science to bear his name.

—Miss Baxter, of Balgaries, sister to Sir David Baxter, has given £2,500 in furtherance of the wishes of her late sister, to found two scholarships at Edinburgh University, in connection with the High-school of Dundee, to be named the Miss Baxter Scholarships.

— Lord Stanley was, on the 1st ult., installed as Lord Rector of Glasgow University, and delivered his inaugural address in the City Hall, where, besides the students, there was a large assemblage of the general public. His Lordship was warmly received, spoke about an hour, giving the students practical advice as to the spirit in which they should prosecute their studies.

— The Boston Latin School is the oldest educational institution in the country, having been founded 234 years ago, three years before Harvard College. It has graduated many celebrated men, among others John Hancock and five of his fellow-signers of the Declaration of Independence. It is a free school, and for grounding boys in classics has perhaps no equal in the country.

— Dr. Butler, the Head Master of Harrow School, is about to establish there a "modern" department, which he thus describes in a circular to the parents of his scholars:—"It may interest you to know that we propose in September next to establish at Harrow a 'modern side,' for the benefit of boys for whom, from various causes, an advanced classical training seems undesirable. The principal subjects of instruction on the 'modern side' will be Mathematics, French, German, Latin, History, English Literature, and Physical Science. The requirements of boys not intended for the Universities will be specially kept in view, including the case of those who are candidates for Woolwich or the Indian Civil Service. It is hoped that this provision may obviate the supposed necessity for removing boys to a private tutor, precisely at an age when the influences of public school life are most powerful and most salutary. Except for purposes of instruction, there will be no distinction whatever between boys on the 'modern side' and boys on the classical side. No boy will, for the present be admitted to the modern side unless he has been in the school for at least a year, and has hitherto shown diligence and made fair progress. The chief direction of the teaching of the modern side will be intrusted to Mr. E. E. Bowen, who has for several years been an assistant master of the School. From him, from any of the tutors, or from myself boys will be able, after Wednesday April 14th, to obtain information as to the conditions of admission to the modern side."

— *The Education of Women in Scotland.*—The movement for the higher education of women is very active in Scotland. Last winter professor Masson delivered a course of lectures in Edinburgh on English literature, to ladies whose ages ranged from 22 to 35. Out of a class of 265, there were 94 who obtained certificates for written essays and answers at an examination. A similar course was delivered at Glasgow; and this year, three courses of forty lectures each, are going on in Edinburgh: one by Professor Masson on English literature; another by Professor Fraser, on logic and mental philosophy; and the third on experimental physics, by Professor Tait. From such cultivation a harvest of happy results may be reasonably anticipated.—*Athenæum.*

— *Dr. Froude on Scotland.*—On March 19, Mr. Froude, the historian, was installed as Rector of the University of St. Andrews, and made a Doctor of Laws; then invested in his robes of office, which it will be remembered Carlyle threw carelessly on the chair, at a like installation. Dr. Froude delivered one of the most admirable addresses, that have lately been given. Honesty and hard work, not mere dilettante literature, were to be the aim of the student; the principal object in life was bread-earning in honour and honesty. Dr. Froude touched a hundred subjects, but, as the morning sun touches the spires of Milan Cathedral, there was not one point which he touched which he did not gild and adorn.

LITERARY INTELLIGENCE.

— Her Majesty has been pleased, at the instance of the Premier to grant a pension of £100 a year to the widow of the late William Carleton, the Irish Novelist.

—*A New Trade Magazine*—Commerce now-a-days patronises literature. Moses keeps a poet, and now we see announced a new journal which, under the peculiar and rather awkward title of 5 *Bowchurchyard Magazine*, seeks to record the doings of the several societies established in connection with the house of Messrs Copestake, Moore, Crampton & Co., the wholesale hosiers and haberdashers.

—*The Laureate.*—The *Court Journal* informs us (on what authority we know not) that Mr Alfred Tennyson "has again refused a peerage." We heard some time ago that Mr Tennyson had refused a baronetcy, and, on the authority of the Editor of "Debrett's Peerage," the Lauruate contradicted the rumour. There is probably as much truth in the last report as there was in the first.

—*New Magazine*—Messrs Hodder & Stoughton will publish on May 1, price one shilling, to be completed in 9 montly parts, the *World of Anecdote* and accumulation of Facts, Incidents, and Illustrations, historical and biographical, from Books and Time, recent and remote, by Paxton Hood, author of "Lamps, Pitchers, and Trumpets," and formerly Editor of that once excellent monthly, the *Eclectic.*

—*Sir Walter Scott and his Factor.*—From an article in the *Gentleman's Magazine* for April, called "Abbotsford Notanda" we extract the following:—"December 1825.—My dear William,—The money market in London is in a tremendous state, so much so that whatever good reason I have, and I have the best, for knowing that Constable and his allied, Hurst and Robinson, are in perfect force, yet I hold it wise and necessary to prepare myself for making good my engagements, which might come back on me suddenly, or by taking up those which I hold good security for. For this purpose I have resolved to exercise my reserve faculty to burthen Abbotsford with 8,000*l.* or 10,000*l.* I can easily get the money, and having no other debts, and these well secured, I hold it better to 'put money in my purse,' and be a debtor on my land for a year or two, till the credit of the public is restored. I may not want the money, in which case I will buy into the funds, and make some cash by it. But I think it would be most necessary, and even improper not to be fully prepared . . . . By all I can learn, this is just such an embarrassment as may arise when pickpockets cry 'Fire!' in a crowd, and honest men get trampled to death. Thank God, I can clear myself of the *melée* and am not afraid of the slightest injury. If the money horizon does not clear up in a month or two I will abridge my farming, &c. I cannot find there is any real cause for this; but an imaginary one will do equal mischief. I need not say this is confidential.—Yours truly WALTER SCOOT," "December 16, Edinburgh.—The confusion of 1814 is a joke to this. I have no debts of my own. On the contrary, 3,000*l.* and more lying out on interest, &c. It is a little hard that, making about 7,000*l.* a-year, and working hard for it, I should have this botheration. But it arises out of the nature of the same connection which gives and has given, me a fortune, and, therefore, I am not entitled to grumble."

SCIENTIFIC INTELLIGENCE.

— *Dimensions of the New Suspension Bridge at Niagara Falls.*—The span from rock to rock is 1,190 feet.

The span between the centres of the towers is 1,268 feet.

The length of the suspended platform is 1,240 feet.

Height above the surface of the river 190 feet.

The length of the central portion resting on cables is 645 feet.

The length of the platform supported by stays and cables is 605 feet.

The deflection of cables at centre—in Summer 91 and in Winter 88 feet, making the rise and fall of the bridge from changes of temperature three feet.

The length of the cables between the points of suspension in medium temperature is 1,286 feet.

The length of the cables between anchorages is 1,828 feet.

Length of cables and anchors 1,888 feet. Height of towers above rock on Canada side 105 feet, and on American side 100 feet. Base of towers 28 feet square, and top four feet square.

The surface of the rock on the American side is five feet above that on the Canada side.

The height of the roadway above the rock on both sides is 7½ feet.

The depth of the anchor pits below the surface of the ground is 18 feet, and the length of the anchor chains under the ground is 30 feet. The anchors are set in solid rock on the Canada side, and in masonry on the American side.

The width of the roadway between the parapets is 10 feet, depth of side truss 6½ feet, and height of parapet above floor 4½ feet.

The bridge is supported by two cables, composed of seven wire ropes each, which contain respectively 133 No. 9 wires.

The weight of these wire ropes per lineal foot is 9 pounds, and the diameter of the cable is seven inches.

The total weight of the suspended portion of the cables is 82 tons nett.

There are 48 stays weighing fifteen tons nett.

There are fifty-two guys connected with the bridge.

The aggregate breaking strain of the cable is 1,680 tons nett, and that of the stays 1,320 tons nett, making the total supporting strength of the cables and stays 3,000 tons.

The number of suspenders used is 480, with an aggregate strength of 4,800 tons.

The weight of the suspended roadway, including weight of cables and stays, is 250 tons. The ordinary working load is 95 tons and the maximum load is 100 tons; permanent and transitory load 300 tons.—*Buffalo Express.*

— At a recent meeting of the French Academy, Mr. Dumas presented a note by Professor Graham on the metallic nature of hydrogen—a view

which Mr. Dumas has always held. Professor Graham has been continuing his researches on hydrogen and palladium, and here is one of the results, which has already been laid before English physicists:—If we link a palladium wire 489 millimètres long, and connect it with the hydrogen pole of a battery, it becomes saturated with hydrogen, absorbing from 950 to 980 times its volume, which corresponds to one equivalent of hydrogen for one of palladium, and the wire increases in length by eight millimètres; heat rapidly removes the hydrogen, and then the wire is found to be shorter than it was at the beginning of the experiment. Professor Graham sees in this evidence that the palladium and hydrogen form an alloy, and he finds that, in accordance with this view, the combination displays new tenacity, electric conductibility, and heat conductivity, though the degree of this latter has not been stated. On the presentation of the above note, Mr. Wurtz reminded the Academy of the fact that he had discovered, twenty years ago, a compound of copper and hydrogen, Cu_2H, in treating sulphate of copper by hypophosphorous acid. Having tried the experiment with other metals, he always failed save in the case of palladium, the chloride of which, treated with hypophosphorous acid, gave a pulverulent *hydruret* of palladium, but, as this compound very soon gave off its hydrogen, Mr. Wurtz neglected to record it. Professor Graham, he said, was more fortunate, because he had employed solid pure palladium.

— *New Direct Vision Spectroscope.*—At the soirée of the Royal Society, Mr. Browing exhibited a direct vision spectroscope, small enough to be carried in the pocket, yet so powerful, that it shows the D lines widely separated. The instrument contains ten prisms; four of these were of the great specific gravity 4.5. This is the densest glass that has been made for optical use in England. Although it contains a great quantity of lead, it seems to preserve a good surface. But in Mr. Browing's arrangement of the prisms the oxidizable surfaces are so completely protected from the action of the atmosphere, that the spectroscope might be used in a chemical laboratory.

— *The Transit of Venus and the Astronomer Royal.*—Mr. Proctor has been engaged in some investigations which impugn the accuracy of the Astronomer Royal, who stated that the transit of 1874 is useless, so far as the mode of observation applied to the transit of 1769 is concerned, and suggested a mode of observation less perfect in itself, requiring many precautions, and little to be affected by chronometer errors. Mr. Proctor affirms that the transit of 1874, so far from being useless as respects the simpler mode of observation, is more valuable than the transit of 1882. If Mr. Proctor is right, the Astronomer Royal has been led into error by adopting an unsound method of testing the value of particular transits. We understand that Mr. Proctor has sent a paper on this subject to the Royal Astronomical Society, and, as some of the first mathematicians belong to that learned body, their decision as to who is right will be looked for with interest.—*The Student.*

— *Heat of the Stars.*—Mr. Huggins has laid before the Royal Society (in "Proc.") experiments made with his 8-inch refractor and a delicate thermopile, on the heat of stars. He obtained deflections of the needle with Arcturus 3° in fifteen minutes; Sirius 2°; no effect from Castor; Regulus 3°.

— The *Lancet* draws attention to a new cure for the poisonous effects of the bites of venomous animals, which has been discovered by Prof. Halford of the University of Melbourne. The subject has attracted a large amount of attention in Australia, owing to the Professor having employed his remedy—a solution of ammonia injected into the veins—with success in the case of a man exhibiting all the appearance of snake poisoning in a dangerous degree. The beneficial effect was immediate. From an almost pulseless state, and from a stupor verging on death, the patient speedily became conscious.

He has been steadily recovering since, and he is now reported to be nearly well. Ammonia is not a new remedy for the snake-bites, but Prof. Halford has unquestionably the credit of having first applied it in a direct way, by injection into the blood, so that its effect should be immediate and general. The discovery was not fortuitous, but resulted from a consideration of the microscopical alterations which he found taking place in the blood-vessels of animals subjected to the snake poison. To carry out the treatment, a solution of ammonia, of the strength of one part of the strongest *liquor ammoniæ* to two parts of distilled water, and an ordinary hypodermic syringe are required. The ammonia is thrown directly, but gradually, into the blood by puncturing any superficial vein, and may be repeated as its beneficial operation ceases.

— *A Cure for Cataract* —The Paris papers mention the discovery, by Dr. Taviguot, of cure of partial or total blindness from cataract, without a surgical operation. He merely instills into the eye an oil containing a small quantity of phophorus. The latter substance is said to have the property of dissolving the obscured crystalline and to form a new one. Experiments made at the Government Veterinary School of Alfort, upon horses and cattle, have satisfactorily proved the reality of the discovery.

— *The Flow of the Great Lakes. Interesting Experiments.*—The Detroit *Post*, in an article on the various methods that have been tried from time to time to solve the mystery of the supply and outflow of the Great Lakes, gives an account of a new and successful apparatus just completed, for the purpose of measuring accurately the velocity of the currents in their tidal flow into and out of the lakes. The *Post* says:

"It is now two years since the newspapers of the West began to discuss whether the great lakes are fed by subaqueous springs, or have hidden outlets. The party who favored the theory of subaqueous springs asserted that more water flowed out of the St. Lawrence than could be poured in by all the sources of supply known to exist, while the upholders of the idea of hidden outlets contended that evaporation and the visible outflow could not account for all the water which the lakes received and distributed.

"General W. F. Reynolds, Superintendent of the Lake Survey, determined to give this subject such consideration as, in the West, could only be afforded by the engineers employed on that work, and, accordingly, for the past two summers, observations have been made in the St. Mary's, St. Clair, Detroit, Niagara and St. Lawrence rivers for the purpose of ascertaining the exact amount of outflow of the lakes. The river-guaging has, from the start, been entrusted to Assistant D. Farrand Henry, of Detroit, and the apparatus used is one of his own invention. This apparatus is so much more delicate and accurate than any previously tried that the results are of great value.

"To calculate the amount of outflow of any stream, it is necessary to have the area of the body of water, and its mean velocity, at any point. These two quantities multiplied together give the discharge. The first is easily obtained by making frequent soundings across the stream on a known line. The second is more difficult. The only practical methods heretofore in use, for the determination of the velocity are, first by the time of passage of floats past a known line; second, by the difference in the height at which water will stand in two tubes, one of which is bent toward the current at the bottom and the other is straight; and, third, by water mills, as they are termed, which consist of float wheels exposed to the current, the number of revolutions being recorded by a system of decimal gears or telltale. Of these methods the first is the only one which has been used in deep water."

Mr. Henry was dissatisfied with these methods, and devised a "Telegraphic Current Meter," which he has used with perfect success during the past season.

"This meter consists of a propeller, or float wheel, which has on its hub an eccentric, and on the axle an ivory lever, which has one end kept on the eccentric by a light spring, while into the other end a hole is drilled, meeting another hole, drilled at an angle with it, near the centre of the bottom side. Into these holes a platinum wire is forced, so that the lever rests on the point of the wire coming out of the centre hole. Under this point a small platinum plate is fastened to the axle. The other end of the wire is connected by a hinge joint to a long copper wire, which is fastened to the axle, but insulated from it. At the rear end of the axle are two vanes, at right angles to each other, sufficiently large to keep the wheel in the thread of the current. The whole is suspended by a yoke which has two small eyes on its side.

"The method of using the meter is as follows: A boat being anchored in the stream at the point where the current is to be tested, a weight with a copper wire attached is let down from the stern. The upper end of this wire is fastened to a spring pole, which takes up most of the motion of the boat. This wire is passed through the eyes on the side of the yoke in the meter, a measured cord is fastened to a swivel ring in the upper, and a weight to one in the lower end of the yoke. The meter may now be lowered to any depth, sliding down the anchored wire, the upper end of this wire and of that fastened to the platinum point, being connected with a battery in the boat; then at every revolution of the wheel the circuit will be opened and closed by the eccentric, raising the ivory lever, and thus breaking the connection between the platinum point and plate. If now a Morse's paper register be placed in the circuit, at every revolution of the wheel a dot will be made on the moving paper, and thus the number of revolutions in any given time can be ascertained.

"The observations in the rivers were taken on a known line, one hundred feet apart, and at each five feet of depth. One of the first things noticed was the irregularity of the beat of the counter, showing that the current pulsated.

"The pulsations are not regular, the common maximums being from one half to one and a-half minutes apart, with every five or ten minutes a greater increase or decrease. They are least in the maximum current, and increase toward the bottom and sides of the stream.

"The maximum velocity of the current was found to be at or a little below the surface, and the velocity at the bottom is probably not over two-thirds the maximum.

"The following approximate velocities and discharges of the different rivers is taken from the computations of the work last year. The quantities for the Detroit River are accurately computed:

RIVER.	Maximum velocity. Feet per second.	Miles per hour.	Mean velocity. Feet per second.	Miles per hour.	Disch'ge cubic ft. per second.
St. Mary's	1·921	1·30	0·967	0 66	90,783
St. Clair	4·544	3·09	3·514	2.39	233,726
Detroit	4·800	2·71	3 000	2·04	236,000
Niagara	3.370	2·32	2·258	1·54	242,494
St. Lawrence	1·462	1·00	0·954	0 65	319,943

American Journal of Science and Arts.

ARTS INTELLIGENCE.

— *The Wallace Monument.*—A meeting of Scotsmen resident in London was held in the Scottish Corporation Hall, Crane-court, Fleet-street, on the evening of Friday, Dr. W. F. Ramsay, of Inveresk, in the chair. The object of the meeting was to devise measures to relieve the building committee of the Wallace Monument from their present financial difficulties. Mr. W. Burns, a delegate from the building committee, explained that the committee required about £1,000 in order to complete operations. About £12,000 had already been expended. The meeting thanked the delegate for his address and resolved to make a vigorous effort to raise among their fellow-countrymen in London the sum still needed. A committee, consisting of Dr. Ramsay, Robert Crawford, Esq, the Rev. Dr. Rogers, Dr. Halley, Councillor McGeorge, R. Hepburn, Esq., C. R. Brown, Esq, L. C. Alexander, Esq., and others, was appointed to organize a movement in London. The meeting awarded a hearty vote of thanks to the Rev. Dr. Rogers and Mr. C R. Brown, the originators of the monument, and through whose exertions the enterprise had for many years been prosperously carried on.

— *Relics of Mary Queen of Scots.*—An interesting bequest to the Queen was despatched last week from Wishaw House to Windsor Castle, which Her Majesty, from her acknowledged love for Scotland and everything Scottish, will, no doubt, highly prize. It would appear from a letter written and left by the late Lord Belhaven, that the relics, of which the bequest is composed, were placed at the disposal of the Queen, and her Majesty has been graciously pleased to signify her acceptance of them. Relic No. 1 consists of a cabinet made of ebony, richly ornamented in front with designs in tortoiseshell, height 5 feet 2 inches, width 4 feet 2 inches, depth 1 foot 9 inches. The front opens with folding doors. In the centre also are two small folding doors, which, on being opened, reveal a small recess, with tesselated pavement and roof with side mirrors. The inner folding doors are also surrounedd with drawers. The Scottish Queen brought this cabinet with her from France on her return to Scotland to begin her eventful career. This souvenir of the ill-fated Mary must therefore be some three hundred years old, but it is in wonderfully good preservation. Queen Mary presented it to the Earl of Mar. The Earl afterwards make a gift of it to a favourite granddaughter, who married one of the ancestors of the late Lord Belhaven, and the cabinet has continued in the possession of the Belhaven family ever since. Relic No. 2 is a purse (the work of Queen Mary's own hands), beautifully wrought with a crown, sceptre, and sword in gold, with the words, "God save King James." There is also a lock of Mary's hair, which is of a light colour. The original letter addressed by the late Lord Belhaven, placing these interesting souvenirs at the disposal of the Queen, was locked up in one of the drawers of the cabinet.

— Evening schools of art, fifty in number, with upwards of four thousand pupils, are maintained in Paris. Prizes for proficiency are given by the military authorities, and, where the skill of the pupil is very remarkable, rewards are bestowed by the Emperor.

— Earl Cowper has been appointed a trustee of the National Portrait Gallery.

— At a recent sitting of the Court of Common Council, London, Alderman Canston gave notice of a motion to the effect that a statue to the late Prince Consort be erected by the Corporation, at a eost of 3,000 guineas.

— The Annual Report of the Director of the National Gallery for 1868 has been published, and gives some interesting particulars of the progress of that institution. Four pictures have been purchased during the year:—(1) The Exhumation of St. Hubert of Liege, by D. Bouts, which was formerly in the possession of Mr. Beckford, at Fonthill, and then called "The Burial of a Bishop," by J. Van Eyck; (2) A large altar piece, in three stages and thirteen compartments, by Carlo Crivelli, representing "The Virgin and Child Enthroned, surrounded by Saints;" (3) Copley's sketch for "The Siege and Relief of Gibraltar;" (4) "The Entombment of Christ," ascribed to Michael Angelo. The bequests to the Gallery during the past year have been—(1) A portrait of Mr. W. Siddons, by Opie, bequeathed by Mrs. C. Coombe, Mrs. Siddons' daughter; (2) Portrait of Mrs. Sarah Siddons, by Sir T. Lawrence, also bequeathed by Mrs. C. Coombe; (3) Portraits of Mr. John Baillie, of Ealing, his wife and four children, received 1868, for want of space not yet exhibited The following selection of twelve oil pictures and drawings in water colours has been bequeathed to the National Gallery by the late Mr. Charles Frazer, of 15 Lancaster Gate; to remain in the possession of his nephew, S. J. G. Frazer, Esq., during his life:—Drawings—W. Hunt, (1) Grapes, Plums, Peaches, Apricots, &c.; (2) A Man's Head; (3) A Peasant Girl; (4) A Water Carrier; (5) Apples, the contrast—Russets and Green; S. Prout, A Street in Antwerp; and six other works.

MISCELLANEOUS INTELLIGENCE.

— *Prince Arthur in Dublin.*—His Royal Highness Prince Arthur, whose visit was looked forward to with expectant interest as a token of Her Majesty's favour and sympathy with her Irish subjects, arrived in Dublin on April 5, and received a respectful and loyal welcome. The circumstances under which the third son of the Queen has come to Ireland make (says the *Times'* correspondent) an essential difference between this occasion and that of the Royal visit last year. "Then the Heir to the Throne came accompanied by his fair Princess, whose gracious presence irresistibly appealed to the gallantry as well as hospitality of the people. There was all the pomp and circumstance of a State progress to give imposing splendour to the event. Those who know how much the multitude are impressed by beauty and pageantry can easily understand why they were less demonstrative in their reception of the youthful Prince who entered the city with so little ostentation. The absence of a military display, for which Dublin possesses such ample resources, was noticed, with regret, and was no doubt a disappointment to the populace, who expected to see Royalty invested with great magnificence. It is due to them to say, however, that they appreciated the modest yet gallant bearing of the Royal visitor, and testified their pleasure by cordial manifestations. But such expressions of public feeling are not to be contrasted with the outburst of popular enthusiasm which is only reserved for some political idol. The masses of the people have almost forgotten how to cheer. Their greatest efforts are poor and faint compared with the ringing acclamations which they were wont to raise when listening to some favourite orator, or stirred by some great political excitement." The Prince received and replied to an Address presented by the Lord Mayor on behalf of the Corporation; and then proceeded to the Viceregal Lodge. Three carriages of his Excellency the Lord-Lieutenant were in waiting to convey the Prince and the members of the Household. In the first his Royal Highness took his place; beside him sat his Excellency, Lord Spencer; and occupying the opposite seats were Colonel Elphinstone, R. E., and Captain Campbell. A.D.C. In the next carriage were Mr. Pickard, R.H.A. and V.C.; Colonel Forster, Mr. Sterling, A.D.C., and Mr. Courtnay Boyle. A third Viceregal carriage contained the Hon. H. Leeson, Major Boyle, and Captain Villiers. The procession was closed by the carriages of the Lord Mayor and members of the Corporation, and was escorted by a squadron of Hussars. The *cortége* drove through Leinster Street, Nassau Street, Grafton Street, Dame Street, and Parliament Street, to the Phœnix Park. Along the route, which was embellished with flags at various points, his Royal Highness was warmly greeted, and cordially acknowledged the salutations he received. Shortly after one o'clock, the Royal party arrived at the Viceregal Lodge, where his Royal Highness received a hospitable welcome from the Countess Spencer. Prince Arthur, accompanied by the Lord-Lieutenant and a numerous suite, attended the Punchestown races on April 6 and 7. The reception of his Royal Highness was of a most gratifying character. The Prince of Wales's Cup was won by Fertullagh. Amongt the guests at the Viceregal Lodge in the evening was Cardinal Cullen.

METEOROLOGICAL INTELLIGENCE.

— Meteorological observations taken at Quebec during the month of April, 1869—Lat. 46°48′30″ North; Longitude 71°12′15″ West; height above St. Lawrence, 230 feet, by Sergt. John Thurling.

Barometer, highest reading on the 23rd	30.023	inches
,, lowest ,, 31st	29.055	
,, range of pressure	0.968	
,, mean for month reduced to 32°	29.545	
Thermometer, highest reading on the 28th	61.2	degrees.
,, lowest ,, 5th	18.0	
,, range in month	43.2	
,, for month	37.9	
,, mean of maximum in sun's-rays, black bulb	81.2	
,, mean of minimum on grass	28.8	
Hygrometer, mean of dry bulb	35.8	
,, wet bulb	39.2	
,, dew point	31.3	
Elastic force of vapour	.176	inches.
Vapour in a cubic foot of air	2.0	grains.
,, required to saturate, do	0.8	,,
Mean degree of humidity (Sat. 100)	73	
Average weight of a cubic foot of air	549.0	grains.
Cloud, mean amount of (0-10)	7.2	
Ozone ,, ,, (0-10)	1.0	
Wind, general direction	East & West.	
Rain, number of days it fell	11	
amount collected on ground	1.99	inches.
,, 10 feet above	1.95	,,
Snow, number of days it fell	10	

—From the Records of the Montreal Observatory, Lat. 45° 31′ North; Long. 4h. 54m. 11sec. West of Greenwich, and 182 feet above mean sea level for April, 1869.—By Charles 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	29.601	29.579	29.551	25.0	39.6	31.2	wby N	w S W	W	69.74
2	.389	.404	.400	31.0	38 9	34.1	N E	N E	S W	81.44*a*
3	.331	.337	.349	33 0	29.6	24.2	W	W	W	107.29*b*
4	.350	.347	.310	19.7	27.0	24.3	W	W	W	79.24*g*
5	.150	.111	.044	24.2	41.9	38 0	wby S	wby S	W by S	81.11*h*
6	.051	.151	.362	37.4	39.9	33 3	wby S	wby S	W	50.49
7	.364	.407	.4'9	31.1	46.1	34.2	W	S W	S W	84.21
8	.451	.400	.497	29.7	47.1	33.4	S W	S W	W	71.10*i*
9	.500	.561	.580	33.0	53.9	38.4	wby N	W	W	61.11
10	.622	.633	.649	32.0	52.1	37.7	wby N	wby N	W	94.29
11	.661	.589	.600	34.4	54 1	39.1	wby N	wby N	W	77.10*j*
12	.561	.560	.562	38.0	50.4	38.3	wby N	W	W	69.24
13	.561	.577	.600	32 9	50.2	37 9	wby N	S W	W	74.21
14	.671	.727	.749	32.4	53 6	40.1	N E	N E	N E	66.20
15	.899	.864	.881	33 0	56.2	39.1	N W	Nby W	W	70.04
16	.741	.674	.551	37.0	56.2	49.7	W S W	W	W	114.10
17	.257	.321	.464	46 1	47.2	40.6	S W	W	W	69.90*c*
18	.500	.559	.650	38.9	56.0	42.1	W	W	W	109.24
19	.410	.397	.343	33.1	33.2	34.7	N E	N E	N E	118.14*d*
20	.351	.217	.148	35.1	50.4	37.2	N E	N E	N E	91.11*e*
21	.042	.070	.200	36 4	44.2	38.0	W	W	W	98.74*f*
22	.451	.689	.792	37.9	54.2	42.1	W	W	W	124.10
23	.967	.899	.751	36 9	46.2	39.7	Nby W	S	W by S	99.24
24	.462	.513	.547	39.2	66.2	47.2	W S W	S W	S W	89.99
25	.562	.531	.498	44.1	64.0	49.2	N E	W	W	104.00
26	.431	.517	.549	43.4	59.7	50.0	W	W	W	88.29
27	.700	.624	.551	39.7	59.0	48.1	N E	N E	N E	99.44
28	.467	.455	.451	44.6	60.2	46.1	N E	N E	N E	104.10
29	.574	.597	.611	33.1	52.6	37.6	N E	N E	N E	204.16
30	.612	.654	.661	35.4	60.6	41.2	N	W	W	109.29

Rain in Inches.—*a*, 0.047; *b*, 0.090; *c*, 0.096; *d*, 0.174; *e*, 0.284; *f*, 0.416.

Snow in Inches.—*b*, 1.33; *g*, Inapp.; *h*, Inapp.; *i*, Inapp.; *j*, Inapp.

The highest reading of the Barometer occurred on the 23rd day, and indicated 29.967 inches; the lowest reading was on the 21st day, and was 29.042 inches, giving a monthly range of 0.925 inches.

The mean temperature of the month was 41° degrees, which is about the usual mean temperature for April at Montreal.

Rain fell on 6 days, amounting to 1.107 inches. Snow fell on 5 days, amounting to 1.33 inches.

The ice left the river St. Lawrence, in front of the city, on the 23rd.

OFFICIAL DOCUMENTS.

Table of the Distribution of the Grant for Superior Education for the year 1868, in virtue of the Act 18th Vict., chap. 54.

List No. 1.—Universities.

NAME OF INSTITUTION.	Number of Pupils.	Annual Grant for 1867.	Annual Grant for 1868.
McGill University	260	2221 00	2221 00
" " contingencies	....	271 00	271 00
Bishop's College	128	1588 00	1588 00
Total	....	$4080 00	4080 00

List No. 2.—Classical Colleges.

NAME OF INSTITUTION.	Number of Pupils.	Annual Grant for 1867.	Annual Grant for 1868.
Nicolet	217	1588 00	1588 00
St. Hyacinthe	215	1588 00	1588 00
Ste. Thérèse	170	1272 00	1272 00
Ste. Anne Lapocatière	228	1588 00	1588 00
L'Assomption	182	1272 00	1272 00
Ste. Marie, Montreal	284	1272 00	1272 00
High School of McGill College for the Education of thirty boys named by the Government	207	1150 00	1128 00
Quebec High School	91	1307 00	1285 00
St. Francis, Richmond	106	953 00	953 00
Trois-Rivières	112	873 00	1000 00
Morrin	27	371 00	600 00
Ste. Marie de Monnoir	164	545 00	650 00
Rimouski	86	650 00	1200 00
Total	...	..... $	15396 00

List No. 3.—Commercial Colleges.

NAME OF INSTITUTION.	Number of Pupils.	Annual Grant for 1867.	Annual Grant for 1868.
Joliette	164	781 00	781 00
Lachute	140	300 00	300 00
Laval	122	313 00	313 00
Longueuil	266	317 00	317 00
Masson	227	1000 00	1000 00
Notre-Dame de Lévis	158	781 00	781 00
Rigaud	121	781 00	781 00
Sherbrooke	103	234 00	234 00
St. Laurent	295	462 00	462 00
St. Michel, Bellechasse	130	591 00	591 00
Varennes	60	234 00	234 00
Verchères	133	313 00	313 00
Ste. Marie, Beauce	121	313 00	313 00
Total	....	.....	$6420 00

LIST No. 4.—ACADEMIES FOR BOYS OR MIXED.

NAME OF INSTITUTION.	Number of Pupils.	Annual Grant for 1867.	Annual Grant for 1868.
Aylmer, (Catholic)	35	210 00	210 00
Aylmer, (Protestant)	30	210 00	210 00
St. Andrew	120	196 00	93 00
Baie du Febvre	105	140 00	140 00
Baie St. Paul	100	155 00	155 00
Barnston	58	140 00	140 00
Beauharnais	228	210 00	210 00
Bedford	135	148 00	148 00
Belœil	91	312 00	312 00
Berthier	225	312 00	312 00
Bonin, St. André d'Argenteuil	90	210 00	210 00
Buckingham	30	140 00	140 00
Cap Santé	....	140 00	140 00
Cassville	60	140 00	140 00
Chambly	90	164 00	164 00
Charleston	83	282 00	282 00
Clarenceville	62	277 00	277 00
Clarendon	60	140 00	140 00
Coaticook	34	123 00	123 00
St. Columban de Sillery	175	140 00	140 00
Compton	119	140 00	140 00
Cookshire	39	140 00	140 00
St. Cyprien	140	140 00	140 00
Danville	121	210 00	210 00
Dudswell	60	140 00	140 00
Dufresne, St. Thomas Montmagny	57	190 00	190 00
Dunham	146	277 00	277 00
St. Eustache	142	210 00	210 00
Eaton	60	74 00	74 00
Farnham, (Catholic)	227	185 00	185 00
Farnham, (Protestant)	70	210 00	210 00
Ste. Foye	48	140 00	140 00
Freleighsburg	53	185 00	185 00
Gentilly	80	140 00	140 00
Georgeville	39	197 00	143 00
Girouard	255	142 00	142 00
Granby	130	277 00	277 00
St. Grégoire	135	140 00	140 00
Huntingdon	70	310 00	310 00
L'Islet	136	210 00	210 00
St. Jean, (Catholic)	162	371 00	450 00
St. Jean, (Protestant)	140	333 00	333 00
St. Jean, Montmorency	84	140 00	140 50
Kamouraska	101	310 00	310 00
Knowlton	56	277 00	277 00
Laprairie	170	185 00	185 00
Lotbinière	19	124 00	124 00
Ste. Marthe	96	140 00	140 00
Missisquoi	50	214 00	214 00
Montmagny, St. Thomas	209	232 00	232 00
Montreal Commercial Academy (Cath.)	188	284 00	284 00
Pointe-aux-Trembles, Hochelaga	70	277 00	277 00
Philipsburg	45	197 00	143 00
Quebec, Comm. and Lit., Acad. St. Roch	88	140 00	140 00
Roxton	64	122 00	122 00
Shefford	163	321 00	321 00
Sorel, (Catholic)	360	364 00	364 00
Sorel, (Protestant)	68	124 00	124 00
Stanbridge	8[illegible]	216 00	216 00
Stanstead	14[illegible]	496 00	496 00
Sutton	70	175 00	175 00
Sherbrooke	48	307 00	307 00
St. Timothée	115	125 00	204 00
Vaudreuil	88	140	140 00
Yamachiche	115	210	210 00
Princeville	40	150 00	150 00
Total	....	.....	13467 00

LIST No. 5.—ACADEMIES FOR GIRLS.

NAME OF INSTITUTION.	Number of Girls.	Annual Grant for 1867.	Annual Grant for 1868.
St. Aimé	180	106 00	106 00
St. Ambroise de Kildare	58	89 00	89 00
Ste. Anne Lapérade	161	126 00	126 00
L'Assomption	172	126 00	126 00
Baie St. Paul	124	106 00	106 00
Belœil	122	89 00	89 00
Berthier	107	96 00	96 00
Boucherville	108	89 00	89 00
Chambly	116	141 00	141 00
St. Charles l'Industrie	327	187 00	187 00
Châteauguay	126	89 00	89 00
Les Cèdres	71	89 00	89 00
St. Césaire	191	119 00	119 00
St. Clément	263	141 00	141 00
Cowansville	107	141 00	141 00
Ste. Croix	78	141 00	141 00
St. Cyprien	166	89 00	89 00
St. Denis	130	89 00	89 00
Ste. Elizabeth	107	187 00	187 00
St. Eustache	113	94 00	94 00
Ste. Famille	66	179 00	179 00
Ste. Geneviève	152	89 00	89 00
St. Grégoire	56	212 00	212 00
St. Henri de Mascouche	100	89 00	89 00
St. Hilaire	70	89 00	89 00
St. Hugues	80	280 00	280 00
St. Hyacinthe, (Sisters of Charity)	188	126 00	126 00
(Sisters of the Presentation)	243	126 00	126 00
L'Islet	75	126 00	126 00
Ile Verte	104	124 00	124 00
St. Jacques de l'Achigan	165	187 00	187 00
St. Jean Dorchester	390	212 00	212 00
St. Joseph de Lévis	250	280 00	280 00
Cacouna	140	157 00	157 00
Kamouraska	96	140 00	140 00
Laprairie	178	89 00	89 00
St. Laurent, Jacques Cartier	169	187 00	187 00
St. Lin	130	89 00	89 00
Longueuil	337	280 00	280 00
Longue Pointe	30	141 00	141 00
Lachine	279	194 00	194 00
Notre-Dame de la Victoire	240	111 00	111 00
Ste. Marie, Beauce	146	157 00	157 00
Ste. Marie de Monnoir	140	141 00	141 00
St. Martin	107	89 00	89 00
St. Michel	122	212 00	212 00
Deaf Mutes (Sisters of Providence)	90	418 00	618 00
St. Denis Academy, (Congregation Nuns)	190	174 00	194 00
St. Nicolas	79	89 00	89 00
St. Paul, Industrie	69	89 00	89 00
Pointe Claire	71	89 00	89 00
Pointe-aux-Trembles, Hochelaga	107	187 00	187 00
" " " Portneuf	90	187 00	187 00
Rimouski	163	212 04	212 00
Rivière Ouelle	84	162 00	162 00
Ste. Scholastique	171	97 00	97 00
Sherbrooke	252	280 00	280 00
Sorel	545	323 00	323 00
Terrebonne	136	89 00	89 00
Ste. Thérèse	156	89 00	89 00
St. Timothée	114	125 00	125 00
St. Thomas de Pierreville	93	141 00	141 00
" de Montmagny	204	212 00	212 00
Trois-Pistoles	100	124 00	124 00
Trois-Rivières	319	212 00	212 00
Vaudreuil	104	89 00	89 00
Varennes	60	157 00	157 00
Yamachiche	126	141 00	141 00
Youville	81	141 00	141 00
Total	....	.....	$10468 00

LIST No. 6.—MODEL SCHOOLS

NAME OF INSTITUTION.	Number of Pupils.	Annual Grant for 1867.	Annual Grant for 1868.
St. Andrew's School, Quebec	80	314 00	314 00
British and Canadian School Society, Montreal	487	624 00	624 00
Colonial School Society, Sherbrooke	96	157 00	157 00
British and Canadian School Society, Quebec	244	684 00	684 00
National School, Quebec	156	347 00	347 00
Point St. Charles, Montreal	156	231 00	231 00
Education Society, Québec	545	873 00	873 00
" " Trois-Rivières	374	471 00	471 00
Amer. Presbyterian School Society, Montreal	110	313 00	313 00
Colonial Church School Society, Montreal	959	624 00	624 00
Lorette Indians, (boys)	56	150 00	150 00
" " (girls)		150 00	150 00
St. François	30	156 00	156 00
Infant School, Lower Town, Quebec	80	156 00	156 00
" " Upper Town, "	90	156 00	156 00
St. Jacques, Montreal	510	780 00	780 00
Catholic Commissioners of Quebec	....	313 00	313 00
Acton Vale, Convent	202	73 00	73 00
Arthabaskaville	131	56 00	56 00
Bagotville	72	56 00	56 00
Beaumont	83	73 00	73 00
Beauport	136	73 00	73 00
Berthier, Montmagny	102	73 00	73 00
Bécancour	180	56 00	56 00
Berthier, dissentients	35	56 00	56 00
Boucherville	113	73 00	73 00
Bury	71	73 00	73 00
Baie du Febvre	162	73 00	73 00
Cap St. Ignace	80	73 00	73 00
Cap Rouge	125	56 00	56 00
Carleton	60	103 00	103 00
Châteauguay	64	73 00	73 00
Château Richer, Boys	81	73 00	73 00
" " Girls	65	51 00	51 00
Chicoutimi	78	130 00	130 00
Côte des Neiges	70	73 00	73 00
Côteau du Lac, Boys	81	73 00	73 00
" " Girls	96	56 00	56 00
Côteau Landing, dissentients	70	56 00	56 00
St. Louis	267	73 00	73 00
Deschambault, Boys	65	140 00	140 00
" Girls	85	73 00	73 00
Durham	89	100 00	100 00
Eboulements	62	73 00	73 00
Ecureuils	123	56 00	56 00
Escoumains	68	73 00	73 00
Grande Baie	40	73 00	73 00
Grande Rivière	92	73 00	73 00
Grondines	82	56 00	56 00
Henriville	57	56 00	56 00
" Convent	158	56 00	56 00
Huntingdon	57	73 00	73 00
Iberville	140	73 00	73 00
Lacadie	95	73 00	73 00
Lacolle	120	73 00	73 00
" dissentients	120	73 00	73 00
Lachine	120	73 00	73 00
" dissentients	70	73 00	73 00
Leeds	91	73 00	73 00
Lotbinière	36	73 00	73 00
Magog	68	74 00	73 00
Maria	48	148 00	73 00
Malbaie	75	73 00	73 00
Matane	73	56 00	56 00
Melbourne, Girls	56	73 00	73 00
Montreal Protestant School, Panet Street	80	73 00	73 00
" German School (Protestant)	75	56 00	56 00
" Girl's School, Visitation Street	1149	73 00	73 00
" St. Patrick's School, Point St. Charles	104	73 00	73 00
Amt. forward	....	.....$	10233 00

LIST No. 6.—MODEL SCHOOLS.

NAME OF INSTITUTION.	Number of Pupils.	Annual Grant for 1867.	Annual Grant for 1868.
Montreal, St. Mathew's School, Pt. St. Charles	80	56 00	56 00
" Protestant School, St. Ann Street	181	73 00	73 00
" St. Mary Academy	80	73 00	73 00
" Trinity Church School	....	56 00	56 00
Nicolet, Girls	106	56 00	56 00
Percé	45	56 00	56 00
Pointe Claire	51	140 00	140 00
Pointe-aux-Trembles, Portneuf	70	73 00	73 00
Pointe du Lac	111	73 00	73 00
Portneuf, Boys	91	56 00	56 00
" Girls	57		
Quebec, St. Roch, South	25	73 00	73 00
" " Convent	40	73 00	73 00
" St. John's Suburb's	104	73 00	73 00
Rawdon	46	73 00	73 00
" Convent	26	73 00	73 00
Rigaud, Female Academy	115	73 00	73 00
Rivière Ouelle	50	73 00	73 00
Rivière des Prairies	36	56 00	56 00
Rivière-du-Loup, Maskinongé	57	73 00	73 00
" " Témiscouata	117	73 00	73 00
Sault-aux-Récollets	63	73 00	73 00
Sherrington	35	89 00	89 00
Somerset	164	140 00	140 00
Stanfold	32	56 00	56 00
St. Aimé	130	73 00	73 00
St. Alexandre, Kamouraska	72	73 00	73 00
St. Anicet	84	56 00	56 00
St. André, Kamouraska	49	73 00	73 00
Ste. Anne Lapérade	63	73 00	73 00
Ste. Anne des Plaines	124	73 00	73 00
Ste. Anne, No. 2, Kamouraska	105	73 00	73 00
St. Anselme, Cnovent	105	73 00	73 00
St. Antoine de Tilly	30	73 00	73 00
Ste. Brigide, Iberville	65	56 00	56 00
St. Calixte de Somerset, Convent	30	73 00	73 00
St. Cécile	189	73 00	73 00
St. Césaire	135	73 00	73 00
St. Charles, Bellechasse, Boys	50	73 00	73 00
" " Girls	72	73 00	73 00
St. Charles, St. Hyacinthe	131	73 00	73 00
Ste. Claire	77	73 00	73 00
St. Constant	112	106 00	106 00
St. Denis, Kamouraska	101	73 00	73 00
St. Denis, No. 1, St. Hyacinthe	78	73 00	73 00
St. Edouard, Napierville	120	73 00	73 00
Ste. Famille	47	73 00	73 00
Ste. Foye	100	73 00	73 00
St. François du Lac	124	73 00	73 00
St. Frédérick, Drummond	59	73 00	73 00
Ste. Geneviève de Batiscan	71	73 00	73 00
St. George de Cacouna	45	56 00	56 00
Ste. Gertrude	38	73 00	73 00
St. Gervais, Convent	74	73 00	73 00
" Boys	42	73 00	73 00
St. Henri de Mascouche	50	73 00	73 00
" Hochelaga	400	73 00	73 00
" " dissentients	....	73 00	73 00
" Convent	356	56 00	56 00
" de Lauzon	80	73 00	73 00
St. Hermas	115	73 00	73 00
St. Hilaire	82	73 00	73 00
St. Hubert	65	56 00	56 00
Ste. Hélène, Kamouraska	71	56 00	56 00
St. Irénée	65	73 00	73 00
St. Isidore	94	73 00	73 00
St Jacques d'Achigan	110	73 00	73 00
St. Jacques le Mineur	122	106 00	106 00
Amt. forward	....	.....$	15119 00

LIST No. 6.—MODEL SCHOOLS.—(*Continued.*)

NAME OF INSTITUTION.	Number of Pupils.	Annual Grant for 1867.	Annual Grant for 1868.
St. Jean-Baptiste, village	207	73 00	73 00
St. Jean Chrysostôme, Châteauguay	201	56 00	56 00
" " Lévis	51	56 00	56 00
St. Jean Deschaillons	68	73 00	73 00
St. Jean Port Joli,	43	73 00	73 00
" "	51	73 00	73 00
St. Jérôme, Convent	115	73 00	73 00
"	110	56 00	56 00
St. Joachim, Two-Mountains	83	73 00	73 00
St. Joseph, Chicoutimi	38	56 00	56 00
" Lévis	170	73 00	73 00
Ste. Julie, Somerset	25	56 00	56 00
St. Lambert	76	97 00	97 00
St. Laurent, Montmorency	94	73 00	73 00
St. Léon	66	56 00	56 00
St. Lin	114	73 00	73 00
St. Louis de Gonzague	122	56 00	56 00
St. Martin	122	73 00	73 00
Ste. Martine,	130	56 00	56 00
"	90	56 00	56 00
St. Michel Archange,	80	56 00	56 00
" "	137	73 00	73 00
Ste. Monique	84	73 00	73 00
St. Narcisse	75	73 00	73 00
St. Nicolas, Lévis	25	73 00	73 00
St. Pascal	119	73 00	73 00
Ste. Philomène	84	73 00	73 00
St. Philippe	46	73 00	73 00
St. Pierre les Becquets	70	56 00	56 00
St. Placide	96	73 00	73 00
St. Polycarpe	90	73 00	73 00
St. Roch d'Achigan	96	73 00	73 00
St. Romuald de Lévis	127	73 00	73 00
Ste. Rose	108	73 00	73 00
St. Sévère	68	73 00	73 00
Ste. Scholastique	107	73 00	73 00
St. Stanislas, Champlain	133	73 00	73 00
" Beauharnais	96	56 00	56 00
St. Sulpice	100	56 00	56 00
Trois Pistoles	75	73 00	73 00
Ste. Ursule	93	56 00	56 00
St. Valentin	....	56 00	56 00
St. Vincent de Paul, Convent	150	73 00	73 00
" " boys (2 years)	63	56 00	100 00
St. Alexandre, Iberville, Convent	120	56 00	56 00
St. Angélique, Papineauville	94	56 00	56 00
Ste. Croix	40	56 00	56 00
Ste. Cécile, Convent	228	56 00	56 00
Chambly, dis	51	56 00	56 00
St. Etienne, dis	82	56 00	56 00
Iberville	66	56 00	56 00
St. Gabriel de Brandon, Convent	33	56 00	56 00
St. Louis de Gonzague, Convent	100	56 00	56 00
St. Zotique	95	56 00	56 00
Trois-Rivières, dis	60	56 00	56 00
St. Alexandre, Iberville	52	66 00	73 00
Total	....	.....	18816 ..

NEW APPLICANTS.

NAME OF INSTITUTION.	Number of Pupils.	Annual Grant for 1867.	Annual Grant for 1868.
Aylmer, Convent	47	.....	150 00
Ste. Anne des Monts E. N. L.	20	.....	73 00
Ange Gardien	55	.....	73 00
Chicoutimi, Convent	72	.....	150 00
Carleton, St. Jos., Convent	42	.....	150 00
St. David	100	.....	100 00
Etchemin, (Village)	220	.....	100 00
Ste Geneviève, Jacques Cartier	60	.....	56 00
Soulanges	40	.....	73 00
Lotbinière, Convent	83	.....	73 00
Lanoraie, E. N. J, C.	60	.....	73 00
Notre-Dame de Bonsecours, Convent	135	.....	100 00
Notre-Dame de Hull, E. N. J. C.	325	.....	73 00
Notre-Dame du Portage	54	.....	56 00
St. Dunstan	43	.....	73 00
St. Ferdinand d'Halifax, E. N. L.	49	.....	56 00
Ste. Elizabeth, E. N. J. C.	63	.....	73 00
St. Maurice,	72	.....	56 00
St. Norbert, (Arthabaska) do.	76	.....	56 00
Rawdon, dis.	48	.....	56 00
St. Polycarpe, Convent	115	.....	73 00
St. Raphaël, E. N. L.,	92	.....	56 00
Victoriaville,	125	.....	56 00
Iberville	130	.....	56 00
Total	....	.....	1911 00

RECAPITULATION.

Universities	4086
Classical Colleges	15391
Industrial "	6420
Academies for Boys or Mixed	13467
" for Girls	10468
Model Schools	18816
New Institutions	1911
Total	70558