Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

L'Institut a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- ☐ Coloured covers / Couverture de couleur
- ☐ Covers damaged / Couverture endommagée
- ☐ Covers restored and/or laminated / Couverture restaurée et/ou pelliculée
- ☐ Cover title missing / Le titre de couverture manque
- ☐ Coloured maps / Cartes géographiques en couleur
- ☐ Coloured ink (i.e. other than blue or black) / Encre de couleur (i.e. autre que bleue ou noire)
- ☐ Coloured plates and/or illustrations / Planches et/ou illustrations en couleur
- ☑ Bound with other material / Relié avec d'autres documents
- ☐ Only edition available / Seule édition disponible
- ☑ Tight binding may cause shadows or distortion along interior margin / La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure.

- ☐ Coloured pages / Pages de couleur
- ☐ Pages damaged / Pages endommagées
- ☐ Pages restored and/or laminated / Pages restaurées et/ou pelliculées
- ☑ Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- ☐ Pages detached / Pages détachées
- ☑ Showthrough / Transparence
- ☑ Quality of print varies / Qualité inégale de l'impression
- ☐ Includes supplementary materials / Comprend du matériel supplémentaire
- ☐ Blank leaves added during restorations may appear within the text. Whenever possible, these have been omitted from scanning / Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été numérisées.

☑ Additional comments / Commentaires supplémentaires: Continuous pagination.

THE

JOURNAL OF EDUCATION

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

Volume XVIII. **Quebec, Province of Quebec, September, 1874.** **No. 9.**

TABLE OF CONTENTS.

Hints on the Etiquette of Teaching.

By B. Healy.

(Continued.)

XVI.

Although a wish to be "quite at home" in School is not necessarily to be condemned, yet he that entertains it should remember that he must be very well mannered, and very appropriately dressed at home, in order to be able without change, to appear with propriety and advantage in a public school, and furthermore, that this same wish to be quite at home, when ill regulated leads to serious and almost incurable evils: there is scarcely a necessity for particularizing slovenliness in dress, and carelessness in speech and manner. Of course you would never omit a careful preparation in person and apparel before school: "Dress yourself for the day, and think no more about it." If you were inclined to think it troublesome you might reflect that, as society is constituted at present, there are few persons who have not to comply with something of the sort: those that enter the army, whatever their rank in it, have stated hours for drill, parade and duty; the same may be said of the learned professions, and officials in every department of the public service are under inspection during office hours. With these considerations before you, and under the mildest of disciplines (for in this matter you may be your own master) you cannot reasonably complain if due attention to personal appearances be expected, and when necessary, enforced.

XVII.

A child who is without delicate feeling on some particular points may be very sensitive in other things. Teachers, in their dealings with children, practically ignore this fact. Even teachers of kindly disposition set down as wanting in softness and good nature, a child in whom they discover one or two instances of insensibility or want of appreciation; and should he betray apathy where the teacher's feelings are particularly acute, he is accounted wholly destitute of the better qualities of human nature. Far from showing a willingness to recognize and give credit for amiable traits whenever or wherever found, many teachers seem inclined to regard anything evidencing elevation of sentiment in such a pupil as an affectation and a very great impertinence.

These are some of the errors into which whims and peculiarities betray those who are swayed by them. Their exposition here will, it is hoped, discover two truths—namely, whims are not the harmless trifles they are usually accounted, and anything done in school must exercise vast influence.

XVIII.

Children who cheerfully submit to the restraints imposed by good manners deserve to be admitted to the most friendly relations with their teachers, and to every other privilege consistent with perfect order. Such consideration from the teacher compensates them for the loss of the noisy freedom of by gone days, and strengthens them to resist the raillery aimed at them by the pupils of other schools, where laxity of discipline prevails.

When on a particular day, the greater number of pupils stay away from school by reason of the inclemency of the weather, the etiquette of the school-room requires that far from neglecting those in attendance, you be more than ordinarily attentive to their interests. The

minority you may consider as forming, "a select circle of friends; "they merit more courtesy and in every regard better treatment, than those who attend irregularly.

Wet days and—when not brought about by mismanagement, or occurring too often other occasions on which the number of pupils in attendance is comparatively small, may each of them be regarded as a prize, or, so to speak, a treasure trove, by a teacher desirous of making his pupils acquainted with the Etiquette of Teaching. They furnish him with opportunities of rendering school agreeable to himself and to others. For then there is silence, there is leisure, there is time to elaborate details. The stage is clear: there is, as it were, more room to display how becoming a thing good breeding is how essential to peace and order, how conducive to the happiness of all.

Drawing as an Educational Exercise.

The value of drawing, as an educational exercise in our schools, is just beginning to be appreciated. Hitherto it has been generally viewed as a mere accomplishment, and as attainable only by the favored few. A child with a natural aptitude for delineating forms has usually been regarded as a prodigy not subject to ordinary limitations; and the fact of his representing forms successfully has seldom been considered as indicating the possibility of others doing like work.

Drawing also has been largely regarded as of no practical value in an educational course. The only end supposed to be gained was the power to make pictures; and this was considered of little worth unless the pupil intended to become a professional artist. The larger benefits derived from its exercise have been overlooked or ignored.

This low estimate of the importance of drawing is in part due to a general want of knowledge concerning its principles and practice. Comparatively few persons have either the ability to draw, or to determine whether a figure made by another is correctly drawn, or the reverse. Not appreciating the utility of the knowledge which comes from the study and practice of drawing, they have no desire to inform themselves, and their attitude in the matter is that of direct opposition or of complete apathy.

Still another reason tells in the same direction. The teaching of drawing has been largely confined to the copying of pictures, reducing the exercise to one of mere imitation, and bringing into action none of the higher faculties of the mind. As a natural consequence, pupils generally have disliked the work, and their labors have been almost fruitless of good results. Children are wearied and disgusted by the endless repetition of unmeaning lines, and by copying pictures in which they take no interest, and which do not convey to them a single thought; and, when they grow up and take their places in society as parents or school-officers, it can hardly be expected that they will take a lively interest in drawing, or encourage its introduction into schools.

In spite, however, of ignorance, of apathy, and of hostility, and in spite of all obstacles, drawing is gradually and surely making its way into all grades of our schools, and the conviction is rapidly growing that there are few studies that can be introduced into a general school-course of greater intrinsic value.

DRAWING AS A MEANS OF MENTAL DEVELOPMENT.

The value of drawing will be best appreciated when we understand its precise nature, and the relation it sustains to other branches in the course of instruction. Drawing is a method of expressing thought, and philosophically is associated with other forms of language. Like language, it should be regarded as a means, and not as an end. It is valuable as embodying thought, and as a mode of communicating thought to others; but, divorced from thought, it is but a lifeless form. Picture-making may become mechanically perfect, but, unless it embodies and expresses the thought of the artist, the process is valueless in an educational point of view. Not only should the whole picture express a thought, but each line and mark should be necessary to the complete expression, or it is superfluous, and, as such, a hinderance rather than a help.

Attention.—In all true educational work the primary attention should be fixed upon the thought, and the secondary on the expression. Thus, in the study of any of the sciences, when books are used, the great effort should be to understand the ideas recorded, and the words should be considered useful only as they fully express these ideas. Vagueness of expression more often results from vagueness of thought than from any lack in the use of arrangement of words, and improvements in modes of speech must come largely from a more clear comprehension of the thought involved. As drawing is but a kind of language, the primary attention should be fixed upon the form to be portrayed, while the method of representing the form should be as nearly incidental as possible. When the lines drawn are imperfect, the correction should be made by more accurate observation of the form itself, rather than calling the attention specially to the faulty expression.

Observation and Perception.—It will be seen, then, that drawing makes a continuous demand for close and accurate observation, thus cultivating the perceptive faculties, and storing the mind with distinct ideas of form. It leads also to comparisons and discriminations, and fixes the attention upon real objects. When the perception is once developped by means of these exercises, activity and keenness of observation become fixed habits of mind, increasing thought, broadening culture and enriching life.

But expression must always accompany thought. Words are used to embalm general ideas, and drawings are made to clearly define and preserve ideas of form. The hand must be trained to express what the eye perceives. Careful practice alone can accomplish this. When, after repeated trials, the lines drawn fail to represent the form desired, the difficulty will probably be found in defective observation, rather than in any fault of the muscles.

The education of the hand, so that it is brought into exact harmony with the eye, and obeys the mandate of the will instantaneously, is an educational achievement of immense importance in all the vocations of life. The effort to express also corrects observation, and thus perception and expression mutually act and react, stimulating, criticising, and correcting each other.

Imagination and Reason.—Not only does drawing assist in the cultivation of perception, but it may also be made an important auxiliary in the development of the higher faculties. In all of the inventive work of drawing, the imagination is brought into active exercise, and perhaps no better schoolwork was ever devised for that purpose. The first efforts at invention may prove failures, from the fact that imagination has not been awakened. The mind has been accustomed to move along the path of the real, imitating and accepting without any effort at rearrangement or new combination. The creative energies of the mind have not been called into action. Thought remains under the domain of the senses, and is

confined to that which is visible. But by simple and progressive steps the mind is led away from the actual and toward the ideal. By the judicious instruction of the teacher and the stimulus of example, the imagination is at last aroused. The possibility of creating new figures and designs becomes a living reality. The newly-acquired consciousness of the power to do, stimulates the mind to greater activity, and leads it to higher achievement.

The imagination, however, which concerns itself with rearrangements without regard to order, must be directed so that the new combinations may produce definite results. The designs produced should be orderly, harmonious, and symmetrical. The faculty which perceives the relations upon which these qualities are founded, and which directs and controls the imagination, is reason. Every drawing-lesson, then, may be made to fulfill the highest function of school-recitations, that of bringing into active use all the powers and faculties of the mind, in their natural order.

To produce these results by drawing exercises, the inventive and applied courses are both indispensable. If the inventive work is omitted, little or no exercise is given to the imagination ; and merely copying pictures which others have drawn, fails to bring into active use the higher powers of the mind. If the applied course is omitted, the imagination is not brought under the wholesome control of reason. and made to conform to the actual, but runs riot and wastes itself in objectless pursuits.

Conception.—In its full development, the mind must have the power to form mental images of things unseen. It must vividly recall the actual, and as vividly construct mental pictures of the ideal formed by re-arranging the elements of the actual. This process, combining vivid perception and recollection with imagination, is known as conception, and the picture so formed is called a concept. By drawing, we obtain more vivid concepts of form than by any other means. The effort to represent corrects errors of perception, errors of recollection, and errors of imagination ; and, when the drawing is perfected, the concept stands out clear and sharply defined. The mental act of thus defining concepts in the concrete becomes a confirmed habit of the mind which extends to every possible department of thought.

Taste.—In the construction of a design or a picture, and in the arrangement of its parts, certain laws in regard to proportion, harmony, and symmetry, must be observed to produce a pleasing effect. By exercise, and without a knowledge of the laws upon which the true order rests, the eye may learn to distinguish with great accuracy the correct from the incorrect, the true from the false. This perception of the true order of things by an intuitive or empiric process we call taste. Taste arrives at results without resort to reasoning, and when cultivated and emancipated from the control of custom or prejudice, its decisions will generally be found to correspond with law. It is an elevating and refining influence, tending to beautify and enrich life, and to soften the asperities of social intercourse.

Taste is directly cultivated by drawing. The eye, trained to definite and accurate observation, becomes conscious of the natural and true order ; and the hand, trained to execute, reproduces this order in all its exactness. Taste cultivated in regard to form, leads to the observance of good taste in the arrangements of things, in the use of language, and in social manners.

DRAWING AS AN AID TO SCIENCE.

As drawing is an expression of thought, its practice leads directly to the acquisition of the material of thought An investigation of things themselves gives us real knowledge ; a talk about things yields only apparent knowledge. Drawing as a school-exercise should be largely pursued in connection with other branches of learning, and in the pursuit of real knowledge. The study furnishes the thought, the drawing expresses it. But, in the expression, the mind is led to more accurate observation, and the interest that results leads it directly to deeper investigations and larger acquisitions.

For example, by drawing the leaves, the flowers, the fruit, the stems, and the roots of plants, the mind first observes the individual forms, then the relations which exist between the forms of each class, and finally the larger relations which exist between the different classes From this observation of form it is but a step to the consideration of the relations of parts to each other, to functions, and to methods of growth. In this manner systematic botany and vegetable physiology grow directly out of the knowledge which is forced upon the mind by drawing.

The same is true in regard to animal life. The pupil begins to draw the outline of some of the more simple and familiar specimens, as butterflies. He soon discovers that, while there is a general resemblance in form in all, there are differences more or less marked in the different specimens which he examines. This comparison, finding resemblances in generals, and differences in special details, is the real basis of philosophic classification, and the pupil reaches this result by the true inductive process and as an incident of work apparently in another direction.

All the branches of natural history and nearly every science afford similar illustrations of the importance of drawing in the acquisition of materials of thought. Indeed, without an attempt at drawing, it is scarcely possible for students to observe all the nice distinctions and infinite graduations of form which characterize and individualize objects.

The artist, to be successful, must have a knowledge of actual forms in Nature as a basis for his work. Accurate observation furnishes him with food for his imagination, and out of the elements so obtained he fashions his wonderful creations. Conforming to natural forms and plans, his productions are beautiful and ennobling ; violating these conditions, either through ignorance or design, they are disorted and grotesque. Excellence in art is attainable only by a loyal adherence to laws discovered by an examination of Nature's work's.

The negative importance of drawing in this connection is shown by the fact that, while it stimulates the mind to genuine investigation, and to the acquisition of real knowledge,it implants in it a dislike for mere memorizing processes, and for apparent knowledge.

The student who studies Nature, " that elder scripture writ by God's own hand," with ready pencil, recording his observations by its aid, each day finds his search is keener, his comprehension larger, and his insight deeper ; because, to represent, he must know ; and, to know he must examine minutely and reason accurately.

DRAWING IN ITS PRACTICAL VALUE.

Besides its importance as an educational process, drawing is of great practical value in most of the vocations in life. It is indispensable to the highest success in most of the mechanical pursuits. The man who can illustrate his ideas with his pencil, rises from the lower to the higher walks of his calling. He plans as well as executes, and he falls naturally into his place as leader and director. The carpenter who draws well, becomes foreman, and not unfrequently architect. The machinist who draws, in many instances, becomes a successful inventor.

Ability to draw is of great value to the farmer. By its

means he plots his ground and divides his fields. By it he plans his house, adapting it to its surroundings and to its surroundings and to its uses. By it he is able to describe the peculiar vegetation, the name of which is unknown to him, and the kind of insect which destroys his crop. By it he fashions his utensils and tools, and communicates his thoughts to others in a thousand instances where ordinary language fails.

In the various manufactures, workmen are in constant demand who have some aptitude and skill in designing. In engineering and in architecture, drawing is an integral part of the professional work. Even to those engaged in the learned professions, drawing may be made of use in various kinds of investigation, and in affording amusement for leisure hours.

WHO SHOULD LEARN TO DRAW.

It has been well said that "any one who can write, can draw," and it may be added that any one, who is not suffering directly under some physical disability, may learn to draw. As in other branches of education, some will have a greater aptitude for the work than others, but all can make some proficiency in acquiring skill in its execution, and obtain some positive advantage from its exercise.

In consequence of its importance in educational work and in practical life, and of the fact that all may acquire some skill in its practice, drawing should be introduced into every grade of school throughout the length and breadth of the country. When this is done, the exercise will go far toward selecting from the ranks those who are to be the future artists of the country, and of starting them in their career.

From the schools an army of workmen will graduate so trained that our manufactured and mechanical products will occupy as high a place, in regard to the beauty of their designs, as those of the most favored nation.

The nation and society at large will feel the impulse which comes from this practice of drawing in the common schools in the improvement of individual taste, in the disappearance of tawdry ornaments from houses and from dress, and in the general advance of science and art.

By uniting drawing and the study of Nature, students are directed to original sources for their ideas of form, and they easily learn to distinguish the actual from the merely conventional. Drinking from the same fountain of inspiration as the great masters of ancient art, they no longer copy, but invent. From them we may expect new forms of art, rivaling the old in beauty and richness; and from the art so developed we may look for an influence which will react upon education, purifying, ennobling, and perfecting.—*Krüsi's Analytic Manual.*

The Beginnings of Education.

The child is no sooner born than its education may be said to begin. The first gasp for air the infant makes, and the pressure it feels at its mother's breast, are lessons learned. With each progressive step in the relationship of the child with persons and things external to itself, its nurse, its food, the light, and the various other beings and objects which may surround it, it is acquiring the elements which form the basis of all education.

The earliest years of childhood are most profitably spent in the development of those observing faculties which the young exercise with instinctive readiness. Easily, however, and spontaneously as the power of observation of the child seems to act, it must not be presumed that all guidance, on the part of parent, nurse, or whoever may have charge of it, is supererogatory. Children may be aided, from the very earliest age, with great advantage even in learning those objective lessons which most of them are so forward in acquiring.

Those who have the constant care of the infant, or even they who may be only brought into casual relation with it, can seldom resist the invitation the little creature, by its many endearing ways, gives to notice. It thus without any systematic effort, or even with a good deal of apparent negligence, will secure for itself at times the means it requires for the proper development of its observing powers. The playful sympathy of the vivacious nurse with her smiling charge will prompt the trolling of a nursery ditty, some lively action or other, or the presentation of a bright object. The child may thus learn its most essential lessons from teachers supremely ignorant of the useful instruction they give, or even the fact that they are instructors.

There are some, however, who are incapable, from perversity of disposition or want of natural animation, of responding even to the invitation to mirth of an infant's smile. Such should never be allowed, if possible, to have charge of the young. A cheerful disposition should be regarded as one of the most essential requisites of a good nurse. Mothers should, moreover, especially cultivate a lively manner with their children. All the surroundings, if possible, of the child should be animating, and objects noticeable from brightness of color and distinctness of figure ought to be placed within reach of his daily vision. Sombreness of dress of the child and those who have constant charge of it should be avoided.

Systematic intellectual education of the child should be deferred until he has reached the age of six or seven years. Previous to that period it may be allowed to pick up, like Moses in the "Vicar of Wakefield" a miscellaneous education at home. During the years of infancy, of course, there will be no attempt to do more than arouse and engage the observing powers by those means which naturally suggest themselves to a sympathetic mother and a lively, good-natured attendant.

Those skilful teachers, the Germans, do not admit any pupil into their most elementary school before the age of six years. This is as early a period as most children can be subjected to the discipline of systematic study. Intellectual pursuits even then can not be persistently followed unless combined with a careful training of the physical powers. Exclusive culture of the mind is dangerous at all ages, but more especially during the earliest.

While the bodily vigor is carefully promoted by abundance of good food, playful exercise, and cheerfulness of spirits, there is very little risk of the young being intellectually overworked. Most, if not all of those children who are said to have broken down under the weight of their studies have not been injured by too much work, but too little play. If a proper care should be taken to sustain a just balance between the body and mind, both would be found capable of much greater effort than either is wont to exhibit, and with the result of increased robustness.

John Stuart Mill tells us in his "Autobiography" that he began the study of Greek at an age earlier than he could remember, but which his family assured him was when he was only three years old. Before he reached his teens he had travelled over the vast domains of ancient classical and a large portion of English literature. Although Mill placed a very modest estimate on his natural powers, he accomplished what it will be safe to say was never accomplished before at so early a period of life. It would not only be absurd to attempt to effect the same results by the same means in most children, but, if the experiment were tried, it would fail in ninety-nine

hundred cases out of ten thousand by the premature extinction of mind and body, causing either the death or idiotcy of those subjected to the process.

Play a necessity.

It is pitiful to think what weakly, miserable, unhealthy bodies the little children in our great towns are, for the most part, preparing for themselves during the early years of life. How is it possible for them to grow up into vigorous, healthy, wholesome men and women, disobeying as they do, unconsciously and of necessity, the laws that nature has declared to be the conditions of health and strength, of physical and moral health? The blame, if blame there be, does not lie with them. They cannot help themselves. Nature's laws, if simple, are not easy to obey, even by grown people, much more by helpless childhood. Good food and plenty of it, sufficient clothing, pure air and pure water, light and roomy dwellings, are conditions of health which neither they nor their parents for them can always, or indeed often, comply with as they ought. But though, all this most sorrowfully admitted, there is one thing, and that among the most essential which Dame Nature has prescribed, that every little child ought surely to be able to get in abundance—play!

Play and plenty of it! Every child ought to have that. Nature says so, and with good reason insists upon it too; and not only so, but she does all she can to ensure their having it. The need for food, for air, for warmth, and light, and sleep, is common to all, old and young alike. These things are as necessary at sixty years of age as at six; but the need for play is pre-eminently that of childhood; in fact, it is an instinct with the young of all creatures, and is implanted in them for the wisest purposes. Every healthy young animal, whether it be lamb or kitten, boy or girl, is full of sport, and unless it is either hungry or sleepy, is pretty sure, if left to itself, to be at play in some form or other. It is just nature's way of making the growing creature take the amount of exercise that is necessary to strengthen and develop its limbs and muscles, and to give it vigor in every part; and if her dictates are disregarded, and a child is deprived of play, or compelled to smother its natural restlessness in forced inaction, it suffers for it as surely as if is stinted in its supply of food.

If we see a child rosy and plump and firm-fleshed, with bright, eager eye, and sturdy little arms and legs, we may be sure that nature has had her own way in this respect, and that all the running and jumping, the shouting and laughing, and tumbling about which she prescribes, have been duly done. And as I have said, the reverse holds good as well. Indeed, no child, under any circumstances, can be really healthy and vigorous, or can lay a good foundation against the time to come, without an abundance of active exercise during the years of growth. Nothing can make up for the absence of this essential element in the physical education of the young; and yet what uncounted thousands there are among the junvenile street population of our large towns, to whom play, real play, is a thing impossible and unknown. If space for active play cannot be had in crowded towns, what substitute can be provided that will produce the same results? For we must remember that not only are these things necessary to a healthy childhood, but also that a healthy childhood is a condition of a really healthy and vigorous man or woman-hood. If the seeding crop be poor and puny what hope is there that the harvest will wave rich and plenteous, when the men and women of the next generation put in their sickle to reap the fruits of the culture that our society is bestowing now?

Now, where space for real play cannot be had, and children are suffering in consequence, growing up, as so many are, puny and flabby and ill-shaped for the want of it, it is quite possible to substitute other forms of active exercise which shall supply the lack, which shall help to strengthen and straighten the growing frame, and give power and capacity to the sluggish and impoverished organs, and which at the time shall not require more space than the school-room floor affords. Even the simplest drill-training can do wonders in this respect; and, well-managed, especially if some kind of rhythmic chant is associated with the various evolutions, children, both girls and boys, will learn really to enjoy it—will look upon it, in fact, as a modified form of play. Now, every School Board can do this for the children that it picks up out of the lanes and courts and back streets of our great towns; and they would do so in every case, if public opinion were but brought to bear upon the subject.

A healthy body is one of the chief conditions, not only of mental vigor, but to a great degree of moral wholeness too; and no School Board programme can be complete, though drawn up after never so strenuous a conflict, that cares for the minds and even for the morals, of the child-masses over which it has the oversight, and gives no thought to that physical frame on whose strength and soundness both mental vigor and moral wholeness have been made, by God's own decree, so fearfully dependent.—*Christian World.*

Health in the Household.

BY W. W. HALL, M. D.

Of late years more attention has been paid to the general health of the people than formerly, as evidenced by the multiplication of health journals representing the various schools, and all concurring upon the general hygienic rules.

Many persons go down to the grave from the need of a common knowledge regarding health, how to maintain it, or restore it when lost. On reaching the age of maturity both men and women of necessity become their own doctors, often knowing better how to treat their particularities than the physician they may call in, for what is good for one constitution is not always beneficial for an other. It is at adult age that the powers of life begin to decline, and the vigor of of youth is no longer available to withstand the inclemencies of the weather of life. Tell a youth that he is in danger of "catching cold" from being in a state of perspiration and becoming cool too quickly, and he will smile at such silliness. He has a thousand times before sweat and cooled off the quickest way he knew how, and still remained well. But this same youth could not repeat the experiment with impunity after he had reached adult age. A physician in his circuit for forty years rode across a marsh pond every day; but after that long period he took the fever and ague one time, his system having become adapted to it. What were the circumstances which enabled him to resist the miasmatic influences but the positive condition of his body, his youth, and his health?

Practical lessons of this kind, if heeded by those of health, and even those who are in its full enjoyment, will save many from disease and an early grave. If one has a good constitution, it is like a new hat, none the better for being banged about. The opening door to all disease is a cold. A neglected cold fixes severe chronic ailment upon the individual. Every day and every hour this

remains uncured, it becomes more firmly fixed, and our graveyards are full of these unfortunate people. But it should be understood that becoming cured of a cold or a cough does not result from the use of patent remedies, these seldom cure, and when they do it is at the expense of changing the disease, or driving it to some other more objectionable part. Catarrh snuffs, throat astringents, eye washes, and salves, do incalculable injury in sending the diseases elsewhere, and in fact causing acute affections, ending in death. The hygienic rules by which diseases first attacking the system may be removed can never fail if the person is persistent, and brave enough to try to use them. A cold or cough may be easily broken up by procuring a good sweat and absolutely abstaining from food a few hours. How much better this is than to tax the system with poisonous drugs, which if they cure remain in the blood perhaps a long time as a foreign element, and in antagonism to the true uses of the body.

The health of the household comprises a great deal that may be said of children. It has often been asked why do one half of these little ones born, die just as they enter life, or perhaps get a glimpse of it, and then pass into another world? We are satisfied that a large percentage of these deaths arises from the ignorance of parents. A tender infant must be tenderly cared for. Often, however, too tender care is the cause of their passing off. Infants are in danger of being kept too warm. They perspire freely and at such time they become extremely liable to cold. The cold is apt to pass off through the bowels, which, instead of being permitted, the mother tries to stop. Or the child may have convulsions, weakening its nervous system possibly for life. The best rule for children so young, and indeed for all children, is to clothe them and cover them at night with just so much ao may keep them warm without sweating. They can then bear changes of atmosphere which they could not with impunity before.

Children, especially smaller ones who cannot speak to describe their feelings, may suffer long and severely when we do not know it. They have weary hours of crying, what for they cannot tell, and the impatient and naturally irritated mother attributes it to crossness. The child is punished and becomes a martyr to a second pang. It is an excellent rule to be observed by parents, that a long continued crying in the child betokens some ailment, and under such circumstances should be cared for with tenderness.

Bathing children in too cold water is another frequent error, and makes invalids of men and women who may be fortunate enough to escape worse results of the barbarous torture.

Eighty years ago a mother in England buried six children, all dying in early life with the same disease except one. That one is to-day éighty years of age. She attributes her health and long life to not being bathed in cold water daily as were the rest.

The bad effects of cold bathing, or being washed in cold water, arises from the shock experienced by the child, who soon learns to cry to avoid it, and by crying the system gets into a high state of perspiration, which, being checked too suddenly, produces disease in many forms. The children of robust and healthy parentage may survive this drain upon the system, but the vast majority suffer disease and death ultimately. While it may be said that cold water bathing is bracing, hardening the system, it is also evident that the vitality extracted is to that extent the loss of life, and its natural weards quite sufficient to lose.

Children born with frail constitutions, inheriting the infirmities of parents, need more vitality than cold water can give, even more than all the food, air and exercise, they can ordinarily get.

The true physiological principle of bathing consists in washing off the effete materials from the system, and everything beyond this is foreign to the attainment of health. A tepid bath, or slightly warm water which never shocks or causes disagreeable feelings, answers the purpose in all respects, without the violation of any principle.

Children thus cared for as to clothing and bathing, as to treatment under slight ailment before it becomes chronic, may attain to a hardy constitution, to live long and healthfully, a blessing to the race, and the name they bear.

The Tidal Mystery.

Among the phenomena of Nature related to the earth which excite our interest, is the wondrous one—the tide. From a very early period of the world's history it has been known that this oceanic movement is produced by the influence of the sun and moon. There are two tides, one caused by the sun, the other by the moon. At new moon, when the sun and moon are in conjunction, and at full moon, when they are in opposition, the two waves concur, and the tide is at its quadratures, and is at right angles with the sun, the action of the sun and of the moon is diverse; the two waves do not concur, and the tide is at its lowest—neaptide. Popularly, the two waves are regarded as one, and the tidal-wave is generally spoken of as one. Popularly, too, it is attributed to the influence of the moon, as the influence of the moon is about two-thirds of the combined influence of the sun and moon. In what we have to say, therefore, we shall leave the sun out of the question—the principle govering both being the same—and treat the wave as one; or. rather, we shall speak only of the tide incited by the moon.

The tide is a vast, broad wave, of the average height of two feet, which seems to roll ceaselessly round the the globe from east to west. The power of this wave is such that it slightly retards the revolution of the earth, which turns upon its axis from west to east. The tidal wave, however, is not progressive but undulatory, the ocean rising and falling in its place. It is the revolution of the earth which produces the apparent but not real outward motion. The undulation resembles the vibration of a cord stretched between two posts, and pulled in the centre. The tidal wave is stayed, affected, and deflected, by the obstruction and conformation of the various shores where it impinges. Along a part of the Irish coast, near Arklow, the tide is imperceptible; on the shore of Norway it is slight; at New York it is five feet; and at the Bay of Fundy it is seventy-one feet. These variations, which we give as examples, can be easily explained, and are the result of the general undulatory movement, modified by special and local causes, which we need not pause to describe. Touching the grandeur and the fearfulness which attend the flow of a mighty tide, no finer nor more thrilling description has been given than that by Scott in "Redgauntlet." Probably it is familiar to our readers.

There is a mystery, however, about one feature of the tide which has always perplexed students, and of which a satisfactory explanation is rarely given. Indeed, we have never been present at an examination in a public school when either the master or his pupils succeeded in shedding any light upon the subject. We refer to the reverse tide—that is to say, equivalent tides exhibit themselves on opposite sides of the earth at the same time. If the moon is on one side of the earth, there will be a

tide on that side—the ocean rising toward the moon; and there will be an equal tide on the other side—the antipodes—the ocean rising away from the solid earth and the moon attracts the water under it, which, being mobile, yields and swells up, and thus forms the tidal undulation. On the face of it, this explanation seems satisfactory so far as relates to the tide on the side of the earth proximate to the moon; but, whether the statement be correct or incorrect, it does not account for the reverse tide on the opposite side. Now, the moon does not attract the earth as a unit, and *vice versa*, but every particle of matter in the moon attracts every particle of matter in the earth, and *vice versa*. Moreover, attraction diminishes with the increase of the distance of the object attracted according to the square of the distance, by a well-established rule. These principles governing the nature and measure of attraction being, as we suppose, undeniable, it follows that the attractive force exerted by the moon—which, of cource, is diminished by the amount of the counter-attraction of the earth upon the moon—upon the surface of the earth next to her is greater than it is at the centre of the earth in a right line, and greater at the centre than it is at the opposite side of the earth, extending the radius. In fact, it diminishes with the increase of the square of the distance, so that there ought to be a much less tide upon the opposite side of the earth, or, rather, there ought to be no tide at all, if it be true that the tide proceeds from the drawing of the water by the moon; yet there is an equal tide corresponding exactly with the one directly under the moon.

Some writers, to escape the dilemma, have assumed that the moon not only draws the mobile water under her, but the solid kernel of the earth also, and that the water on the opposite side does not follow the kernel, but remains behind, and thus forms the reverse tide. Now, the reverse tide averages about four feet a day; consequently, by that amount the earth must have been nearing the moon for ages, as no counter-motion to countervail the assumed one can be demonstrated. As the earth and the moon have not approached each other in such wise, the proposition is untenable. But, were it true that the kernel of the earth is deflected in the way and to the degree asserted, what reason can be given for the water remaining behind on the opposite side? By the law of gravity it would follow, and there would not only be no tide, but possibly very low water. The whole hypothesis is contrary to physical laws, and reminds one that kind of exegesis of a difficult passage of Scripture, which either begs the question, or is no exegesis at all.

Nothwithstanding, the phenomenon of the reverse tide exists, and must be susceptible of explanation. We think it can be elucidated in accordance with known physical laws.

In considering it, we will neglect centrifugal force, as that force, being only about one sixteenth of the force of the attraction of gravitation at the equator, is inappreciable.

Every particle of matter in the earth by the law of gravity, attracts every other particle in the direction of the centre. In obedience to the law of gravity, every particle seeks the centre. The ocean, though it constitutes a part of the terraqueous globe, is a free fluid on the surface of the solid part of the earth. The superficies of water is vastly greater than that of land. Yet it is equally subordinate to the law of gravity. The density or weight of water is not always the same. It varies according to circumstances. When we say that the density or weight of a given part of the ocean is increased beyond the average at any time by any influence, we mean that, at that time, and at that part the attraction of gravitation, and consequently the tendency of the water to press toward the centre of the earth, is enlarged. The measure of density or weight is the measure of gravity.

Suppose, for example, the moon to be on the east side of the earth. The will be a tide or the east and west sides of the earth, and low water on the north and south sides. The moon evidently exerts an influence is which causes this undulation in the ocean. But how does she do it? We answer: her influence is not to draw the mobile water on the east side of the earth toward her, as some fondly imagine, but her influence to increase the weight or density of the water on the north aud south sides. Hence the water on the north and south sides, succumbing to the law of gravity, presses toward the centre of tne earth, and, in so doing, causes the water on the east and west sides to swell up; it is squeezed in on the north and south sides, and squeezed out on the east and west sides. Thus there is, necessarily, for mechanical reasons, an equal tide on the east side of the earth, next the moon, and on the west side opposite, the whole ocean taking the form of a slight ellipse. It is an undulation, and changes its position as the earth revolves and presents different faces to the moon, and also in accordance with the relation the waxing and waning moon may bear to the earth.

Such is the action of the moon, and similarly of the sun, to produce their respective tidal waves. To examine into a nice calculation of the relative influence of each is aside from our purpose. We only wish to set forth the general principle, which is very simple, and explains the mystery equally of the super and infra tides.

But some one may ask: "How do you know that the moon increases the action of gravity, as above stated, on the north and south sides of the earth?" We answer: Just as we know the truth of any other problem susceptible of demonstration, viz., by working it out mathematically. If the astronomer says Venus is so many miles distant, and possesses such a density, presuming his calculation to be correct, we accept his dictum. When, therefore, the scientist, who, we are satisfied, understands the laws of the attraction of heavenly bodies, of gravity, and of all other forces which constitutes elements in the case, having made a complete mathematical demonstration, avers that the moon, when it is on the east side of the earth, increases the weight or density of the water on the north and south sides of the earth, and that, in consequence thereof, the water on the north and south sides presses in, and so squeezes out the water on the east and west sides of the earth, we accept the truth of the proposition, though we may not be sufficiently accomplished in mathematics to work out his profound calculations, any more than we can those touching the distance and density of the heavenly bodies, which indeed only exact, scientific astronomers can verify. Moreover, accepting the accuracy of the calculation, we comprehend very readily why there must be an equal tide at the same time on both sides of the earth, why high water will always occur at right angles to low water, and *vice versa*.

What we have said is no novelty, no fancied discovery. The proposition, as we have popularly set it forth, has been mathematically demonstrated by Professor Barlett, late of West Point, in his work, which has long been in use at our Military Academy. Our purpose has been merely to draw away the veil from the tidal mystery—one which we have seen hopelessly perplex teachers and pupils.

We will add that the fluid atmosphere is subject to the same law as the water, exhibits similar tidal undulation, and takes a similar slight elliptical form. Yet we believe the atmospheric tide is so insignificant that it is not appreciable by the barometer.

G. C. McWHORTER.

—*Appletons' Journal.*

Protection from Lightning.

During a recent thunderstorm in the village of Trumbull, Conn., a family of three persons, husband, wife and child, who had taken refuge on a feather bed, were instantly killed by lightning; the house had no rods. In the same village, during the same storm, a dwelling house, which had two lightning rods upon it, was seriously damaged. Several of our readers, who have seen the accounts of these disasters, and others who cite analagous examples, have had their faith in feather beds, as a place of safety during thunder storms, severely shaken; while some of them would fain believe that lightning rods serve to destroy rather than to preserve life and property. We are asked to print something upon the subject; and we cheerfully comply, premising, however, that there is little that is new to be said, and that the subjoined information has for the most part been heretofore reiterated in our columns.

ARE FEATHER BEDS A PROTECTION FROM LIGHTNING?

Feather beds are not a protection from lightning, and the popular belief that they are, doubtless results from a misapprehension of the laws that govern the passage of electricity. The human body is a better conductor of electricity than feather beds or other objects ordinarily contained in the apartments of dwellings, and therefore, *a priori*, when the lightning enters an apartment, the human body is likely to form one in a chain of inductions, determining the path of an electrical discharge, unless better conductors are in its vicinity to divert this action.

WHAT IS THE SAFEST PLACE DURING A THUNDERSTORM?

The only place of absolute security in a thunderstorm is an iron building; or next in safety is a building properly protected by lighning rods.

Houses constructed entirely of iron manifestly stand in no need of lightning rods at all, because the electric fluid, on striking so good a conductor, would rapidly diffuse itself in all directions and flow into the ground, provided, of course, that the construction of the building is such as to allow its free escape.

ARE LIGHTNING RODS OF ANY REAL VALUE?

Unquestionably they are. Examples are numberless where the lightning has been seen to fall upon the rods of buildings and descend harmlessly to the earth; while the fact is undisputed that the principal damages suffered from lightning are in connection with buildings that are not provided with conductors. Notwithstanding these facts, some people are apt to be indifferent whether their houses and stores are provided with lightning rods or not, and are always ready to give an example where some building so provided was struck in spite of its protection. Such cases are quoted by the old fashioned "practical men" with much satisfaction, because they hail in them what they are pleased to call the victory of their sound common sense and the discomfiture of the scientific man. This class is, however, rapidly diminishing in numbers under the influence of the extensive diffusion of scientific education among the people.

It may be well to assure unbelievers that the efficacy of the lightning rod is no longer an open question, and that any failure are attributable *to bungling or ignorant construction.* It would be an easy matter to multiply statistics in proof of the assertion; but none would carry with them more force than the following statement obtained from the records of the British navy, by Sir Snow Harris, F. R. S:

"Between 1810 and 1825, before rods were introduced, no less than thirty-five sail of the line and thirty five frigates and smaller vessels were completely disabled; and in 200 cases recorded, 300 seamen were either killed or injured. When the lightning rod was introduced, every mast was furnished with a capacious conductor permanently fixed and connected with bands of copper passing through the sides of the ship under the deck beams, and with large bolts leading through the keel and keelson, and including, by other connections, all the principal metallic masses employed in the construction of the hull" (Harris). Since the adoption of this arrangement, "it appears that damage by lightning has positively vanished from the records of the navy."

In England, the various telegraph companies suffered serious damages by every thunderstorm, by the destruction by lightning of their poles. The poles are now provided with small lightning rods, and all damage has ceased.

In this country the Western Union Telegraph Company has suffered in the same manner, especially, says a recent number of the *Journal of the Telegraph*, "upon the plains and prairies, where every lightning storm formerly shattered and destroyed more or less of our poles, but which are now fully protected by a conductor (No. 8 wire) placed on every fifth pole. Wherever telegraph poles are provided with such lightning rods, all damage is prevented. Where the poles are not provided with rods, damage ensues.

WHAT IS THE PROPER SIZE AND MATERIAL FOR HOUSE LIGHTNING RODS?

According to the best authorities, a copper rod of one inch in diameter, or an equal quantity of copper under any other form, will resist the effect of any discharge of lightning hitherto experienced. The copper rod is therefore the safest and best material that can be used, but it is expensive. Iron rods of one inch in diameter are very commonly used, and, if pointed with solid copper and properly put up, are efficacious in the great majority of cases. The particular form of the rod makes no difference. It may be round or square, twisted or hollow, composed of one solid piece or made of wires twisted together. It is the quantity of metal contained in the cross section of the rod that is of value, not the form.

WHY SHOULD THE ROD BE POINTED?

The reason for terminating lightning rods in a point is as follows: When a thunder cloud highly charged with positive electricity comes up, it repels the positive electricity of all bodies on the surface of the earth coming within its influence, and causes negative electricity to accumulate in them. This is called induction, and it always takes place before a discharge. Now it has been discovered that, when electricity is accumulated in a body in this manner, it can most readily escape by sharp points because in them it meets with the least resistance. A lighted candle held near the prime conductor of an electrical machine furnished with a point will be nearly blown out by the current of air produced by the escape of the electricity. Lightning rods are therefore provided with sharp points to allow the accumulated negative fluid to pass off readily into the air and neutralize the positive fluid of the thunder cloud.

HOW SHOULD RODS BE MADE AN APPLIED?

The object being to make so good a passage for the lightning to the ground as to remove all danger of its leaping to some conductor in the house, the greatest care must be taken not to have any break in the conductivity. As it is inconvenient to manufacture or transport the rods in one piece, the different parts must be in intimate connection when they are put up; it is best to have them soldered and the joints protected from the air and moisture.

The point of the rod should be extended a little above the chimney or highest part of the building, and should be fastened in contact with the building by staples or cleats. Glass insulators should not be employed. It makes no difference in conductility whether the rod is painted or not painted.

No building can be said to be properly rodded or protected against lightning, unless the lower part of the rod or terminal under the ground is made quite extensive. The extremity of the rod should connect with masses of good conducting materials, such as old iron, or iron ore, or coke, or charcoal, laid in trenches, or the rod itself should be elongated, sunk deep in the ground, and carried a considerable distance from the building, and put in connection with water or moist earth if possible. The golden rule for safety is: "Provide the largest possible area of conducting surface for the terminal of the rod."

LOOK TO YOUR TERMINALS.

A lightning rod which is not properly connected with the earth is quite dangerous. The very common method of merely sticking the lower end of the rod down into the dry earth near the surface of the ground is bad, and endangers the building, because dry earth is such a poor conductor, and the amount of rod surface in contact with the earth is so small. Under such conditions, a portion of the electric current will be likely to find an easier path to the earth, through the building than through the rod; and a part of the electricity will therefore leave the rod, strike into the building, and down in various directions into the earth, making havoc as it goes. As a measure of prudence, house owners should *look to the terminals* of their lightning rods, and place there a considerable amount of the conducting materials above named.

By adopting this simple expedient, many buildings, otherwise unsafe, will be rendered comparatively secure from damage by lightning.

As an electrical conductor, well burnt charcoal ranks next to the metals. Metallic ores comme next to charcoal. Water and moist earth, which are so frequently recommended as terminals for lightning rods, are among the poorest of conductors.

One of the best protected buildings that we have heard of, that of Mr. John Knox Smith, an intelligent English merchant residing at Singapore. His country house is built on a proeminence, upon a bed of iron ore, with which the house lightning rods are made to communicate. The lower ends of the rods thus have a very extensive conducting surface, and the protection afforded is considered perfect. Thunder storms and lightning strokes are very frequent, but the house has never been injured.

PROTECTIVE AREA OF RODS.

It was supposed to have been established by Charles and Gay Lussac that a lightning rod protected an area whose radius was double the hight of the rod extending above the building, but this rule is no longer reliable by reason of the extensive use of metals in the shape of pipes, etc., in the construction of the buildings of our day.

WATER AND GAS PIPES SHOULD BE CONNECTED WITH THE LIGHTNING ROD.

When electricity finds several paths to the ground, it will prefer the best, it is true; but some portion will also pass along the poorer conductors. If, therefore, any metallic substances lie within the area supposed to be protected they are in danger of being struck. This is especially true where the lightning has a chance to jump to the gas and water pipes of a building. It is a good plan to connect these pipes with the lightning rod; if the rod is truck, the electricity will then have an excellent path into the ground and will be rapidly diffused over the vast underground network of pipes. The danger to the intimates of the house of being struck from these pipes is less than that of receiving a shock from the powerful induced currents, liable to be developed in them, if unconnected, during a thunderstorm.

IS MORE THAN ONE ROD USEFUL?

The more rods on a building the better, especially if all are connected with each other near their upper ends.

Multiple lightning conductors are useful because each one helps the others, and if the discharge is too great for one, they will be able to carry it between them, but what is more important is this: The less the total resistance of the conductor to earth, the more certain is it that no other, undesirable line will offer an approximately good path to the earth, and so get a part of the flash. Thus, suppose a single rod whose resistance is 1, and that a series of bolts, hinges, gutters, stove pipes, etc., offers another line (passing perhaps through the walls of the house or the body of its occupant) whose resistance is 2. Now, under these conditions, a flash would be likely to divide itself, and while $\frac{2}{3}$ would go safely down the rod, $\frac{1}{3}$ passing along the other line might burn the house or kill the man. But if two rods were connected, the resistance in this line would be but half, hence $\frac{2}{3}$ would take this rod and but $\frac{1}{3}$ tend to go by the other. Again, the less the resistance of any line, the higher the opposite charge developed in it by induction, and hence the greater its attractive influence, leading the discharge to prefer it as a path. This bears upon the importance of connecting all accidental lines of conductors, such as gas and water pipes, with the lightning rods. Insulated, these are opposition lines, soliciting the lightning to come into house and traverse them; connected, they help the rod as we have seen to get and keep the lightning outside.

METAL ROOFS, GUTTERS, LEADERS, AND WATER TANKS SHOULD BE CONNECTED WITH THE LIGHTNING RODS.

Finally, in the way of general advice, we would say: Connect all your lightning rods together, and also to your iron tank, and water, gas, or other pipes, not by separate connections, but so that there is some connection between all, which connection should be *as high up as possible*. If you have a metal roof, connect all rods with it. If the roof is not of metal, then connect your rods together by means of a good sized conductor *running along the ridge of the roof*. Bear in mind that, to carry off the heaviest lightning flash known, a copper rod one inch in diameter is not considered too large; and though of course such flashes are of very rare occurrence, they may come. Hence the great value of uniting your different rods high up.—*Scientific American.*

POETRY.

Song of the Flail.

In the autumn, when the hollows
All are filled with falling leaves
And the colonies of swallows
Quit the quaintly stuccoed eaves,
And a silver mantle glistens
Over all the misty vale,
Sits the little wife and listens
To the beating of the flail,
To the pounding of the flail—
By her cradle sits and listens
To the flapping of the flail.

The bright summer days are over,
And her eye no longer sees
The red bloom upon the clover.
The deep green upon the trees ;
Hushed the song of finch and robin,
With the whistle of the quail ;
But she hears the mellow throbbing
Of the thunder of the flail,
The low thunder of the flail—
Through the amber air the throbbing
And reverberating flail.

In the barn the stout young thresher
Stooping stands with rolled-up sleeves,
Beating out his golden treasure
From the ripped and rustling sheaves :
Oh, was ever knight in armor—
Warrior all in shining mail—
Half so handsome as her farmer
As he plied the flying flail,
As he wields the flashing flail ?—
The bare-throated, brown young farmer,
As he swings the sounding flail ?

All the hopes that saw the sowing,
All the sweet desire of gain,
All the joy that watched the growing
And the yellowing of the grain,
All the love that went to woo her,
And the faith that shall not fail—.
All are speaking softly to her
In the pulses of the flail,
Of the palpitating flail—
Past and Future whisper to her
In the music of the flail.

In its crib their babe is sleeping,
And the sunshine from the door
All the afternoon is creeping
Slowly round upon the floor ;
And the shadows soon will darken,
And the daylight soon must pale,
When the wife no more shall hearken,
To the tramping of the flail,
To the dancing of the flail—
When her heart no more shall hearken
To the footfall of the flail.

And the babe shall grow and strengthen,
Be a maiden, be a wife,
While the moving shadows lengthen
Round the dial of their life:
Theirs the trust of friend and neighbor,
And an age serene and hale,
When machines shall do the labor
Of the strong arm and the flail,
Of the stout heart and the flail—
Great machines perform the labor
Of the good old-fashioned flail.

But when, blessed among women,
And when. honored among men,
They look round them, can the brimming
Of their utmost wishes then
Give them happiness completer ?
And can ease and wealth avail
To make any music sweeter
Than the pounding of the flail ?
Oh, the sounding of the flail !
Never music can be sweeter
Than the beating of the flail !

J. T. TROWBRIDGE.

OFFICIAL NOTICES.

Ministry of Public Instruction.

NOTICE.

We would call the attention of correspondents to the fact that all communications with this Department must be prepaid, as unpaid letters or papers will not be withdrawn from the Post Office.

Under this head we wish to notify those whom it may concern, that the postage on School reports, census, &c., is at the rate of one cent the ounce ; also that books, and manuscript intended for the press, are charged at the rate of one cent for every two ounces, provided that one end of the envelope surrounding them, or part of it be left open.

APPOINTMENTS.

Quebec, 17th September, 1874.

The Lieutenant Governor has been pleased by order in council dated the 12th of June last, and in virtue of the powers conferred on him by the 17th clause of chapter 16 of the 32nd Victoria, to appoint the Reverend Charles Bancroft, school commissioner for the Protestant Corporation of the city of Montreal.

By another order in council dated the 10th of August last, and in virtue of the powers conferred on him by the 48th and 136th clauses of chapter 15 of the Consolidated Statutes of Lower Canada, the Lieutenant Governor has been pleased to make the following appointments, to wit :

SCHOOL COMMISSIONERS.

County of Chicoutimi, Notre Dame de Laterrière—Messrs. Onésime Girard and Pierre Potvin, *vice* Messrs. Jean Rivière and Joseph Dufour, going out of office.

County of Maskinongé, River du Loup, No. 1—Messrs. Louis Caron and François Xavier Lambert, *vice* Louis Caron and the Reverend Joachim Boucher, going out of office.

And by a 3rd order in council, dated the 5th of September instant :

County of Gaspé, Barre-à-Choir—Mr. Thomas Malony, *vice* Mr. Jean Baptiste Blondin, and Mr. François Lemieux, continued in office.

County of Gaspé, Saint-George de la Malbaie—Messrs. George Prevel and Aubin Tabb, continued in office.

County of Ottawa, Cantley—The Reverend Mr. Patrick R. Gay and Messrs. Michael Burke, Robert Kerr, Alexander Smith and Martin Fleming.

County of Ottawa, Hartwell—Mr. Hercule Chenier, *vice* Mr. Augustin Daoust.

County of Quebec, Tewkesbury, No. 2—Messrs. Francis Arnett, James Whelan, William Hughes, A. H B. McKee and Patrick Devine.

SCHOOL TRUSTEES.

County of Bagot, Acton Vale—Mr. Thomas McFarlane, *vice* Mr. Samuel Glendinning.

SCHOOL LIMITS.

The Lieutenant Governor has been pleased by order in council of the 5th September instant, and in virtue of the powers conferred on him by the 30th clause of chapter 15 of the Consolidated Statutes of Lower Canada, to order that the limits of the school municipality of Grand River, (Notre Dame de l'Assomption, in the county of Gaspé,) be henceforth such as they are described in the sixth article of the 46th clause of Chap. 18 of the Lower Canada, namely, as follows; to wit: bounded on the north-east by the parish of Saint-Joseph du Cap Desespoir, such as erected into a municipality by decree of the twenty-fourth of March one thousand eight hundred and sixty, north-west by the waste Crown Lands, south-west by the Petit Pabos river, south-east by the Gulf of Saint-Lawrence.

DIPLOMAS GRANTED BY THE JACQUES CARTIER NORMAL SCHOOL.

For Academies :—MM. David Dupuis and Hormidas Prud'homme.

For Model Schools :—MM. Albert Laurendeau, Joseph Brassard, André Hébert, Roch Forté, Simon Aubin, Arsène Godin and Napoléon Millette.

For Elementary School :—MM. P. Derôme, J. B. Demers, Moïse Guérin, Gaspard Caisse, Onésime Boisvert, Joseph Cardinal, Jos. Baril, Cyprien Dupuis, J. B. Turcotte, Napoléon Dubeau and Guillaume Aubin.

The Prince of Wales Prize was divided between MM. Albert Laurendeau and Jos. Brassard.

DIPLOMAS GRANTED BY BOARDS OF EXAMINERS.

WATERLOO AND SWEETSBURG CATHOLIC BOARD.

ELEMENTARY SCHOOL, 1st *class* (E) Misses Mary E. McGuire and Eliza Farrell.

ELEMENTARY SCHOOL, 1st *class* (F) Miss Henriette J. Bessette.

ELEMENTARY SCHOOL, 2d *class* (F) Miss Blanche David.

ELEMENTARY SCHOOL, 2d *class* (E) Miss Elizabeth Connor.

February, 1874.

J. F. LÉONARD, Sec.

ELEMENTARY SCHOOL, 1st *class* (F & E) Miss Angèle Millette.

November 1873.

J. F. LÉONARD, Sec.

ELEMENTARY SCHOOL, 1st *class* (E) Miss Sarah J. Bray.

ELEMENTARY SCHOOL, 1st *class* (F) Misses Marie Elmina Peltier and Marie S. Gauthier.

August 1874.

J. F. LÉONARD, Sec.

WATERLOO AND SWEETSBURG PROTESTANT BOARD.

ELEMENTARY SCHOOL, 1st *class* (E) Miss Agnès England and Addie L. Lawrence.

4th August, 1874.

WM. GIBSON, Sec.

QUEBEC CATHOLIC BOARD.

ACADEMY, 1st *class* (F) M. Guillaume Robichaud.

MODEL SCHOOL, 2d *class* (F) Miss Marie Luce Nadeau.

ELEMENTARY SCHOOL, 1st *class* (F) Misses Anaïs Biron, Léontine De Varennes, Zoé Dion, Rose de Lima Gagné, Adéline Gingras, Reine Hermine Lacroix, Catherine Marceau, Zoé Marceau, Délima Ouellet, Demerise Pelletier, Joséphine Pelletier, Victoria Roy, Vitaline Roy and Philomène Thibault.

ELEMENTARY SCHOOL, 2d *class* (F) Misses Emma Arcand, Hénédine Audet, Vitaline Bélanger, Arthémise Chaîné, Salée Sarah Georgina Charest, Virginie Couture, Marguerite Olympe Gagnon, Urpide Girard, Célina Elizabeth Guillot, Mathilda Lacroix, Philomène Laliberté, Joséphine Leclerc, Odile Martineau, Angélina Moreau, Magdeleine Pichet, Philomène Roberge, Rosalie Turgeon and Zélia Vallière.

5th May, 1874.

NAP. LACASSE, Sec.

RICHMOND CATHOLIC BOARD.

ELEMENTARY SCHOOL, 1st *class* (F) Miss Marie Tardif.

ELEMENTARY SCHOOL, 2d *class* (F) Miss Elizabeth Bergeron.

ELEMENTARY SCHOOL, 2d *class* (E) Miss Margaret Ann McCaffrey.

18th August, 1874.

F. A. BRIEN, Sec.

RIMOUSKI BOARD.

ELEMENTARY SCHOOL, 1st *class* (F) Misses Ann Quimper, Eugénie Langis, Emma Ruest, Demerise Saucier and Léontine Langlois.

ELEMENTARY SCHOOL, 2d *class* (F) Misses Mathilde Michaud and Mathilde St. Laure.

5th may, 1874.

P. G. DUMAS, Sec.

ELEMENTARY SCHOOL 1st *class* (F) Misses Virginie Dechêne, Victoria Fortin, Marie Lavoie, Marceline Lepage, Wilhelmine Lévesque, Cécile Lévesque and Fmma Mercier.

4th August, 1874.

P. G. DUMAS, Sec.

OTTAWA BOARD.

ELEMENTARY SCHOOL, 1st *class* (F) Miss Herméline Massée.

ELEMENTARY SCHOOL, 1st *class* (A) Miss Isabel Grant, Jessie Grant and Anna Watson.

ELEMENTARY SCHOOL, 2d *class*, (E) Miss Mary Fields, Honora Gannon, Mary Mullin, Margaret Mullin and Caroline Murphy.

4th August, 1874.

JOHN R. WOODS, Sec.

MONTREAL CATHOLIC BOARD.

MODEL SCHOOL, 1st *class* (F & E) M. Gaspard Caisse.

MODEL SCHOOL, 1st *class* (F) MM. Napoléon Blanchet, Gaspard Hêtu and Joseph Robillard, Misses Victorine Fontaine, Adeline Galipeau and Marie Perrault.

ELEMENTARY SCHOOL, 1st *class* (F) Misses Geneviève Aubin, Georgina Archambault, Claire Auger, Marie Emma Beauséjour, Denise Bélisle, Flairy Ringle, Lucie Blin, Emélie Blyth, Olivine Bonin, Rosalie Bonin, Eveline Bourgeois, Anaïs Bourque, Emélie Brodeur, Hermine Caron, Mélitime Chartrand, Victorine Constantin, Azilda Cornellier, Eudoxie Cousineau, Emma Daoust, Félicité Dorval, Mathilde Dubreuil, Elisa Dudemaine, Azilda Dufort, Marie Louise Dupré, Arthémise Filiatrault, Hermine Godreau, Thaïs Guérin, Aglare Guertinou Auglare, Malvina Henfield, Victorine Labelle, Dorothée Laberge, Victorine Labine, Séraphine Lagrave, Herménégilde Lamarche, Alexandrine Laniel, Paméla Lauzon, Laure Lamoureux, Sophronie Longpré, Alphonsine Lord, Marie Marien, Eugénie Mireault, Hélène Mogé ou Moger, Henriette Monfils, Caroline Piché, Corinne Pitre, Virginie Poitras, Louise Poitras, Julie Proulx, Philomène Robillard, Olivine Sénécal, Emma Souchereau, Mathilde Thibodeau, Victorine Trudeau, Dame Veuve Blanchard, née Ezilda Fréchette.

ELEMENTARY SCHOOL, 1st *class* (F and E) M. Louis Charbonneau, Misses Emma Scheffer, Théophanie Scheffer and Méderise St. Hilaire.

ELEMENTARY SCHOOL, 1st *class* (E) Miss Catherine Ryan.

ELEMENTARY SCHOOL, 2d *class* (F) Misses Marie Archambeault, Aglaé Bréard, Nathalie Campeau, Virginie Cloutier, Ursule Coutu and Elizabeth Latour.

ELEMENTARY SCHOOL, 2d *class* (A) Misses Elizabeth Gunian and Ellen ou Alla Leary.

4th, 5th and 6th August, 1874.

F. X. VALADE, Sec.

MONTREAL PROTESTANT BOARD.

ELEMENTARY SCHOOL, 1st *class* (F) Misses Lydia Bachand, Joséphine Lachance, Sarah Lord, Eva Roux, Ida Vadenais and Enice Vary, Anaïs Bruneault.

ELEMENTARY SCHOOL, 1st *class* (F and E) Misses Joséphine Caron and Sophie M. Guertin.

ELEMENTARY SCHOOL, 1st *class* (E) Misses Mary J. Caufield, Susan W. Pennell, Mary A. Gamble, Anna Hall, Annabella McEwen, Maggie McPherson, Lizzie Pease and M. Claude B. Jameson.

ELEMENTARY SCHOOL 2d *class* (F and E) Misses Louise H. Auger and Henriette F. Riendeau.

ELEMENTARY SCHOOL, 2d *class* (E) Misses Evelyn Clelland, Julie Gingras, Ann Jane McDowell, Sarah J. Odell, Eva Roux, Mary Solandt and Ida Van Ornam.

5th May, 1874.

T. A. GIBSON, Sec.

MODEL SCHOOL, 1st *class* (E) Miss Catherine Cook.

MODEL SCHOOL, 1st *class* (F and E) M. William Henry Leith.

MODEL SCHOOL, 2d *class* (F) Miss Catherine Cook.

ELEMENTARY SCHOOL, 1st *class* (E) Misses Maggie Adams, Hattie Churchill, Mary Eugenia Clancy, Mary C. Hamthorne, Elisa J. Johnston, Mary E. Johnston, Elizabeth McGibbon, Helen McGibbon, Margaret Buddock, Mary Eleonor Stuart and Mary Jane Warwick.

ELEMENTARY SCHOOL, 2d *class* (F and A) Miss Jane Lang.

ELEMENTARY SCHOOL, 2d *class* (F) Misses Mary Eleonor Stuart and Mary Eugenia Clancy.

ELEMENTARY SCHOOL, 2d *class* (E) Misses Maggie Curran,

Martha Hall, Isabella McDonald, Martha A. Martin, Eliza H. Taylor and Ida Vesta Wattis.
4th August, 1874.

T. A. GIBSON, Sec.

GASPÉ BOARD.

ELEMENTARY SCHOOL, 1st *class* (F) Miss Flore Trachy.
ELEMENTARY SCHOOL, 1st *class* (E) Misses Judith Lenfestey and Camelia Rooneys.
16th May, 1874.

PHILIP VIBERT, Sec.

ELEMENTARY SCHOOL, 1st *class* (F and A) Miss Flore Tremblay.
4th August, 1874.

J. HARPER, Sec.

STANSTEAD BOARD.

ELEMENTARY SCHOOL, 1st *class* (E) M. Hiram A. Moulton, Misses Elizabeth Broderick, Jennie Steams and Jane I. Allan.
ELEMENTARY SCHOOL, 2d *class* (E) Misses Eliza F. Adrilles, Eliza C. Andrews and Florence V. Dolloff.
5th May, 1874.

C. A. RICHARDSON, Sec.

KAMOURASKA BOARD.

ELEMENTARY SCHOOL, 1st *class* (F) Misses Marie Sophie Bérubé, Marie Exilda Langellier, Marie Darie Levêque and Clémentine Michaud.
ELEMENTARY SCHOOL, 2d *class* (F) Miss Adèle Lavoie.
4th August, 1874.

J. G. PELLETIER, Sec.

SHERBROOKE BOARD.

ACADEMY, 1st *class* (E) M. Henry D. Lawrence.
ACADEMY, 1st *class* (F and E) M. John J. Proctor.
MODEL SCHOOL, 1st *class* (E) Miss Sarah L. Cuttler.
ELEMENTARY SCHOOL, 1st *class* (A) Misses Edith A. Bothwell, Sarah R. Doyle, Mary Catharina Huntney, Minnie E. Jameson, Bella McKichnie and Clara J. Ployart.
ELEMENTARY SCHOOL, 2d *classe* (F) Miss Marie Béliveau.
ELEMENTARY SCHOOL, 2d *class* (E) Misses Luella Sibbee, Ida Sibbee, Mary A Mills, Jennie McDougall and Lucy McGee.
4th August, 1874.

S. A. HURD, Sec.

CHICOUTIMI BOARD.

ELEMENTARY SCHOOL, 1st *class* (F) Misses Marie Victoire Angélique Lévêque, Marie Adèle Boulianne and Marie Anne Simard.
5th May, 1874.

THS. Z. CLOUTIER, Sec.

ELEMENTARY SCHOOL, 1st *class* (F) Miss Marie Larouche.
4th August, 1874.

THS. Z. CLOUTIER, Sec.

CHARLEVOIX AND SAGUENAY BOARD.

ELEMENTARY SCHOOL, 2d *class* (F) Misses. Monique Fortin, Emélie Tremblay and Louise Turgeon.
4th August, 1874.

CHS. BOIVIN, Sec.

THREE-RIVERS BOARD.

ACADEMY, 1st *class* (F & E) M. Joseph H. Douville.
MODEL SCHOOL, 1st *class* (F) Mlle Marie Levasseur and Marie Dessureau.
ELEMENTARY SCHOOL, 1st *class* (F) Misses Euphrosine Lavallée, Julie Marcotte, Marie Beaumier, Alisa Benoit, Georgina Courchaine, Marie Stéphanie Prince, Aurélie St. Arneault, and M. J. B. Dubé.
ELEMENTARY SCHOOL, 1st *class* (F & E) Miss Virginie McFaden.
ELEMENTARY SCHOOL, 2d *class* (F) Miss Marie Adgive Caya.
4th August, 1874.

EPHREM DUFRESNE, Sec.

McGill University.

The corporation of McGill University have pleasure in acknowledging the following donations to the Faculty of Arts during the quarter ending Wednesday, June 24th, 1874.

TO THE LIBRRARY.

From A. Sandham, Esq., McGill College and its Medals." 1 vol. 8vo.
From the Royal Society of London, "Philosophical Transactions." Parts 1 and 2to. vol. 163, 4to.
From the Royal Society of London, "List of Fellows of the Royal Society November 30, 1873." Pamphlet. 4to.
From the Royal Society of London, "Proceedings, Nos. 146 to 150." 5 Pamphlets. 8vo.
From the Royal Society of London, "Klein's Anatomy of the Lymphatic System." 1 vol. 8vo.
From J. Harris, Esq., "Centrifugal Force and Gravitation." 7 vols. 8vo.
From J. Harris, Esq., "The Circle and Straight Line." 3 Parts with plates. 8vo.
From W. H. Thompson, Esq., "Flinder's Voyage to Terra Australis." 2 vols. 4to.
From Harvard College, Cambridge, Mass., "Annual Report of the Trustees of the Museum of Comparative Zoology for 1873." Pamphlet. 8vo.
From Harvard College, Cambridge, Mass., "The Organization and Progress of the Anderson School of Natural History at Penikese Island. Report for 1873." Pamphlet, 8vo.
From A. I. Ellis, Esq., "Algebra Identified with Geometry." Pamphlet. 8vo.
From the Government of the Province of Quebec, "Statutes of the Province of Quebec. Session 1873-74." 1 vol. 8vo.
From the heirs of John Robson, Esq., M. D., 839 volumes, being the completion of the collection of miscellaneous works in the Robson Library.
From Miss Mary Carpenter, "Last Days in England of the Rajah Rammohun Roy." 8vo.
From Miss Mary Carpenter, "Six Months in India." 1 vol. sm 8vo.
From Miss Mary Carpenter, "Reformatory Schools." 1 vol. 8vo.
From Miss Mary Carpenter, "Juvenile Delinquents." 1 vol. 8vo.
From Miss Mary Carpenter, "Morning and Evening Meditations." 1 vol. 8vo.
From Miss Mary Carpenter, "The Young Christian's Hymn Book." 1 vol. 16mo.
From Miss Mary Carpenter, "The Crofton Prison System." 12mo.
From Miss Mary Carpenter, "Journal of the National Indian Association, for 1873." Pamphlet. 8vo.
From the McGill College Book Club, 230 volumes, comprising recent publications on historical, literary, theological, and various other subjects.
From the Superintendent of the United States Coast Survey, "Report of the U. S. Coast Survey for 1870." 1 vol. 4to.

MEMORANDUM

of the several larger donations, and of the total number of books in the library of the Faculty of Arts up to the present date—

June 3, 1874.

Total number of books presented.....		
By P. Redpath, Esq.....		1,129 vols.
By C. Alexander, Esq.....		221 vols.
By J. Robson, Esq., M. D.....		
1st Donation.....	2,597	
2nd "	839	
Total		3,436 vols.
By McGill College Book Club—		
May 1870.....	122	
July 1871.....	191	
Oct. 1872.....	193	
June 1873.....	148	
June 1874.....	230	
Total		834 vols.
By J. H. R. Molson, Esq., and P. Redpath, Esq		500 vols.
Total number of books in the library.....		11,2 3 vols.

THE JOURNAL OF EDUCATION.

QUEBEC, SEPTEMBER, 1874.

It is with sorrow that we announce the decease of Mr. Paul Delaney, Assistant Editor of this Journal, which took place in Montreal on Friday the 25th Ulto.

Mr. Delaney was born and educated in Ireland, where he devoted the earlier years of his manhood to educational pursuits and distinguished himself as an energetic and successful teacher of youth. Some time prior to the establishment of the *Journal of Education* for Lower Canada, he came out to this country and was selected as one of the staff of the Jacques Cartier Normal School. In this capacity he discharged the important duties assigned to him in a way to gain the approbation of his seniors and superiors, as well as the respect of his colleagues, and the affection of all his pupils. When the Local Government was established, in the year 1867, Mr. Delaney was appointed to the post of Clerk of English Correspondence in the Ministry of Public Instruction, the Educational Department having been now removed to Quebec and converted into a branch of the Civil Service of the Province.

With this appointment was associated that of Assistant Editor of the *Journal of Education*.

It is due to Mr. Delaney's memory to state, that, while he attended laboriously and assiduously to all the duties which devolved upon him in connection with the Journal, he never lost sight of the importance of the Teacher's avocations, and availed himself of every opportunity that presented itself of furthering the professional and personal interests of the instructors of youth. He was a judicious co-operator in rendering the publication useful and interesting to those for whose more especial advantage, it was established, and it will be difficult to find a successor to him equally experienced and skilful in making selections of articles from the numerous sources to which recourse is had in preparing each number of the Journal.

Mr. Delaney was an amiable and kind hearted man, and the Department of Public Instruction has lost, by his death, a faithful servant. He was a widower, about forty years of age, and leaves one child, a daughter, to mourn his loss.

The Chevalier De Zaba's Method of facilitating the Practical Study of General History and Literature.

We propose, in the next issue of the Journal, to furnish our readers with some account of the new system—new, at least, so far as Canada is concerned—of cultivating the study of History which has been introduced in several other countries by Count Zaba. He has recently visited Canada, en route for Chili and Peru at the invitation of their Governments, having spent the last two years in Brazil, when, we are informed, the Emperor and the higher authorities detained him for the purpose of co-operating in their efforts to improve their system of public instruction. While on his way through a part of the United States he made a short stay at Boston, where his Method excited much interest and was adopted by the Public Schools of that City. The Court has been in communication with the Minister and Department of Public Instruction for this Province with a view to the introduction of his method here. Both at Quebec and Montreal explanatory lectures and illustrations have been given by him, and a very favourable impression respecting the value of his improvement on former methods has been created, and notices of the subject have appeared from time to time in the press of the two cities in the past few weeks.

MISCELLANY.

Waste of Health and Strength in the Young.—Let me ask you, ladies, with all courtesy, but with all earnestness—Are you aware that more human beings are killed in England every year by unnecessary and preventable diseases than were killed at Waterloo or at Sadowa? Are you aware that the great majority of those victims are children? Are you aware that the diseases which carry them off are for the most part such as ought to be specially under the control of the women who love them, pet them, educate them, and would in many cases, if need be, lay down their lives for them? Are you aware, again, of the vast amount of disease which, so both wise mothers and wise doctors assure me, is engendered in the sleeping-room from simple ignorance of the laws of ventilation, and in the school room likewise, from simple ignorance of the laws of physiology? from an ignorance of which I shall mention no other case here save one—that too often from ignorance of signs of approaching disease, a child is punished for what is called idleness, list-lessness, willfulness, sulkiness; and punished, too, in the unwisest way—by an increase of tasks and confinement to the house, thus overtasking still more a brain already overtasked, and depressing still more, by robbing it of oxygen and of exercise, a system already depressed? Are you aware, I ask again, of all this? I speak earnestly upon this point, because I speak with experience. As a single instance: a medical man, a friend of mine, passing by his own school-room, heard one of his own little girls screaming and crying, and went in. The governess, an excellent woman, but wholly ignorant of the laws of physiology, complained that the child had of late become obstinate, and would not learn; and that therefore she must punish her by keeping her in-doors over the unlearned lessons. The father, who knew that the child was usually a very good one, looked at her carefully for a little while; sent her out of the school-room; and then said, "That child must open a book for a month": "Had I not acted so," he said to me, "I should have had that child dead of braindisease within the year."

Now, in the face of such facts as these, is it too much to ask of mothers, sisters, aunts, nurses, governesses—all who may be occupied in the care of children, especially of girls—that they should study thrift of human health and human life, by studying somewhat the laws of life and health? There are books—I may say a whole literature of books—written by scientific doctors on these matters, which are, in my mind, far more important to the school-room than half the trashy accomplishments, so called, which are expected to be known by governesses. But are they bought? Are they even to be bought from most country booksellers? Ah, for a little knowledge of the laws to the neglect of which is owing so much fearful disease, which, if it does not produce immediate death, too often leaves the constitution impaired for years to come! Ah, the waste of health and strength in the young; the waste, too, of anxiety and misery in those who love and tend them! How much of it might be saved by a little rational education in those laws of Nature which are the will of God about the welfare of our bodies, and which, therefore, we are as much bound to know and to obey, as we are bound to know and obey the spiritual laws whereon depends the welfare of our souls!—*"Health and Education," by Charles Kingsley.*

Physical culture.—Let me now make a few remarks on the vulgar, but by no means always wisely managed process of eating and drinking. Abernethy was wont to say that the two great killing powers in the world are Stuff and Fret. Of these the former certainly has nothing to do with the premature death of Scottish students; they die rather of eating too little than of eating too much. Of course it is necessary, in the first place, that you should have something to eat, and in the second place that what you eat should be substantial and nourishing. With regard to the details of this matter you must consult the doctor; but I believe it is universally agreed that the plainest food is often the best; and for the highest celebral and sanguineous purposes, long experience has proved that there is nothing better than oatmeal and good pottage. For as the poet says—

> "Buirdly chiels and clever hizzies
> Are bred in sic a way as this is."

Supposing, however, that the supply of good nourishment is

adequate, people are apt to err in various ways when they come to use it. There is a class of people who do not walk through life, but race; they do not know what it is to sit down to anything with a quiet purpose, and so they bolt their dinner with a galloping purpose to be done with it as soon as possible. This is bad policy and bad philosophy. The man who eats in a hurry loses both the pleasure of eating and the profit of digestion. If men of business in bustling cities, and Americans who live in a constant fever of democratic excitement, are apt to indulge in this unhealthy habit, students and bookish men are not free from the same temptation Eager readers will not only bolt their dinner that they may get to their books, but they will read sometimes even while they are eating; thus forcing nature to act from two distinct vital centres at the same time—the brain and the stomach—of which the necessary result is to enfeeble both. To sip a sup of tea with Lucian or Aristophanes in one hand may be both pleasant and profitable; but dinner is a more serious affair, and must be gone about with a devotion of the whole man—*totus in illis*, "a whole man to one thing at one time," as Chancellor Thurlow said,—seasoned very properly, with agreable conversation or a little cheerful music, where you can have it, but never mingled with severe cogitations or perplexing problems. In this view the custom of the English and German students of dining with one another, is much to be commended before the solitary feeding too often practised by poor Scottish students in lonely lodging houses. In this matter the Free Church of Scotland, among its other notable achievements, has recently shown us an example well worthy of imitation. They have instituted a dining hall for their theological students, distinguished by salubrity, cheapness, and sociality. Next to quality, a certain variety of food is by all means to be sought after. The stimulus of novelty that goes along with variety, sharpens appetite; besides that Nature, in all her rich and beautiful ways, emphatically protests against monotony. It is, moreover, a point of practical wisdom prevent the stomach from becoming the habituated slave of any kind of food. In change of circumstances the favourite diet cannot always be had; and so, to keep himself in a state of alimentary comfort, your methodical eater must restrict his habits of locomotion, and narrow the range of his existence to a fixed sphere where he can be fed regularly with his meted portion. As for drink, I need not say that a glass of good beer or wine is always pleasant, and in certain cases may even be necessary to stimulate digestion; but healthy young men can never require such stimulus; and the more money that a poor Scotch student can spare from unnecessary and slippery luxuries, such as drink and tobacco, so much the better. "Honest water" certainly has this merit, that it "never made any man a sinner;" and of whisky it may be said that, however beneficial it may be on a wet moor or on the top of a frosty Ben in the Highlands, when indulged in habitually it never made any man either fair or fat. He who abstains from it altogether will never die in a ditch, and will always find a penny in his pocket to help himself and his friend in an emergency.—*Professor Blackie.*

Prizes for suicide.—We have all heard of the testimony of the Boston physicians against the system of forcing pursued by the public schools of that city,—of its tendency to produce nervous diseases, and even, in some instances, iusanity itself. The testimony is so strong and positive, and so unanimous, that it must be accepted as true. Some weeks ago, at the commencement anniversary of a college, not in Boston or New England, a long row of young men was called up to receive the prizes awarded to various forms of acquisition and scholarship. It was pleasant to see their shining faces, and to witness their triumph; but the pleasure was spoiled by the patent fact that their victories had been won at the expense of physical vitality. Physically, there was not a well developed man among them: and many of them were as thin as if they had just arisen from a bed of sickness. After they had left the stage, a whole class was called on, to receive their diplomas. The improvemet in the average physique was so great that there was a universal recognition of the fact by the audience; and whispered comments upon it went round the assembly. The poorer scholars were undeniably the larger and healthier men. The victors had won a medal, and lost that which is of more value than the aggregate of all the gold medals ever struck.

We cannot but believe that prizes do more harm than good, and that it will be a blessing to the nation if they could be ablished in every school and college in the country. They are won invariably by those who need more to be restrained than stimulated, and are rarely contended for by those whose sluggish natures alone require an extraordinary motive to exertion and industry. Their award is based upon the narrowest grounds. Their tendency is to convey a false idea of manly excellence, and to discourage the development of the stronger and healthier forms of physical and mental life. The young man who goes to the work of his life with a firm and healthy frame, a pure heart, and the ability to use such knowledge as he possesses, is worth to himslf, his friends, and the world, a thousand times more than the emaciated scholar whose stomach is the abode of dyspepsia and whose brain is a lumber-house of unused learning. If we have any prizes to give, let us give them to those young men of delicate orgrnizations and the power of easy acquisition who restrain their ambition to excel in scholarship, and build up for themselves a body fit to give their minds a comfortable dwelling-place and forcible and facile service. These would be prizes worth securing, and they would point to the highest form of manhood as their aim and end.

The tendency in all these educational matters is to extremes. It is quite as much so in England as here. We have no sympathy with the aim which is fostered in some institutions of making athletes of the students. Base-ball matches, and rowing matches, and acrobatic feats are well enough for those who have no brains to cultivate, or who are not engaged in educating or storing them; but they are not the things for studious young men. The awful strain that they inflict upon the body, draws all the nervous energy to the support of the muscular system, and kills the ability to study. More than all, they wound the vitality of every man who engages in them. We once heard an English clergyman say that every noted athlete of his (the clergyman's) class in the University was either dead or worse. Moderate play every day in the open air, limited hours of study in the day-time, pleasant social intercourse, unlimited sleep, good food, the education of power by its use in writing, speaking, and debating,—these make men of symmetry, health, and usefulness. The forcing process, in whatever way applied and to whatever set of powers, is a dangerous process. We make a great stir over the flogging of a refractory boy by a teacher. Whole communities are sometimes convulsed by what is regarded as a case of physical cruelty in a school, but the truth is that the ferule and the rawhide are the mildest instruments of cruelty in the hands of more teachers than can be counted. The boy who is crowded to do more than he ought to do in his study, and so crowded that he is enfeebled, or takes on disease of the brain and nervous system at the first onset of sickness, is the victim of the subtlest cruelty that can be practiced upom him.

We write strongly of these things because we feel strongly. We believe that there is a wrong practiced upon the children and young men of the country that ought to be righted. We believe, too, that not only teachers but parents are blameworthy in this matter. It all comes of a false idea of education. To acquire what is written in books,—in the quickest way and in the greatest quantity,—this is education in the popular opinion. The enormous mistakes and fatal policies of which we complain all grow out of this error. Half of the schooling which we give those children who go to school would be better than the whole; while the poor third, who do not go to school at all, would give employment to the unused energies of these teachers whose time would be released to them by such a reduction of school hours. Six hours of daily imprisonment for a child is cruelty, without any reference to the tasks to which he is held during that period.—*Scribner's.*

Physical Education of Girls—Girls from their childhood, have no proper means for unfolding and strengthening their physical natures, and through all succeeding years of their indoor life, their dress, their ordinary avocations and amusements, are directly opposed to the plainest requirements of health. We cannot wonder that the undeveloped forms, the pallid, flabby, faces the languid air of young ladyhood are the results of such a system. Rather do we wonder that we meet anywhere the bright, joyous girl, full of vitality and spirit; strong for an adventurous walk over sands and shores and desert wilderness, or for a hearty days work as the case may demand.

We believe that a radical change must be made in the training of our girls if we would escape a speedy physical degeneracy of our people. The busy lives our citizens lead would exhaust, in time, the strongest powers; yet every generation must bring less and less endurance to the eager work. Our intelligence,

energy, and productive talents will not save us so long as they are not directed to this theme. We must comprehend more, fully than we now do that, without strong and intelligent mothers, it is impossible for a nation to be strong and intelligent; and that not only the mental, but the physical education of our girls lies at the basis of the welfare of the State.

Girls must no longer be supposed to content themselves with looking on at the sports of their brothers, but it should be made honorable and praise worthy for them to excel in athletic sports of their own, and schools should confer prizes not only for mental excellence, but also for the strength, endurance, and harmonious growth which are produced by an enlightened obedience to the laws of health.

We need have no fears that she will become unfeminine by such exercise, for this quality, we may suppose; does not depend upon any feebleness of the body for its existence, but is an inherent part of her being, which will only be increased the more fully that being is developed. True womanhood cannot be a thing superinduced by our social customs, to perish, but must be something inseparable from the character and life.—*A. G. Woolson.*

Military Drill at Schools.—Though the Military School, which is in course of organization, seems to have met with the general approval of the public, yet it may be questioned if more real good would not have been accomplished if arrangements had been made for soldier-drill at the common schools What is peculiarly wanted in this "free and independent" country in schools is, subordination, and nothing, as is well known, tends so much in that direction as the physical control incident to the parade ground. And this subordination to authority once inculcated would soon become a valuable element in the national character. It is that that has made Germany so strong, and it is that which will strengthen any people. It is the leading defect in the volunteer arrangements as far as they have proceeded that Jack is as good as his master, if not a little better. And this is not because the material in the force is defective, but because the principle of subordination has not been inculcated at the proper period of life. If boys were to be put through a short military drill at school—lasting three hours a week—many benefits would accrue. The boys would not only become more tractable as scholars, but they would acquire a manly bearing, a brave and soldier-like disposition, which would prove of excellent value in national affairs. Education in Canada, as we have had before occasion to remark, leans too much to book learning. The boys come out well up in useful knowledge, but they have not been educated to their coming position as men. That is left to the chance of future accident. And in a country so sparsely populated as Canada is, the necessity of drill at school is of unusual importance. Here every man should be made to be of double the value of men elsewhere, because there are, comparatively, so few men among us. To reach such a standard it is neceesary to begin at school, so that prompt military habits may be acquired along with simple division and multiplication. The health of the children would also be not less improved than their temper and bearing. Take any one who has gone through drill in early life, and see how straight he holds himself. He walks erect even though carrying a weight of years, whilst most of those whose backbone has never been set up, whose chests had never been thrown out, or have been taught to hold their heads erect too frequently bend before the burden of years comes on. The good humour which well-calculated drill imparts to the boys is another feature which should commend such a system. A sulky scholar seldom excels, though he may get along tortoise fashion. But when good humour prevails, the intellect is always brighter, the task less irksome, and the result in every way more satisfactory. If drill should be introduced into the public schools, in the short space of ten years a vast change would be observable among the youth of that day. While the knowledge to be had from books would be theirs, there would be that communicated which books cannot impart, but which is as essential in the formation of manhood. That a very favourable opinion in the direction spoken of exists in the public mind there is reason to believe, and all that is necessary is or the class of instruction we advocate to be introduced in order that learning may be made easier, and the youthful population trained in such habits and bearing as would create a marked and valuable improvement in both morals and manners.—*The Daily Free Press.*

Agassiz on Education.—The idea that poor teachers can give elementary instruction, that in the beginning when children are young, the character of the instruction is less important, is a fatal mistake. The best teachers should initiate the studies, and guide the early development of children.

Not by a superficial familiarity with many things, but by a thorough knowledge of a few things, does any one grow in mental strength and vigor. De Candolle told me that he could teach all he knew with a dozen plants. Unquestionably he could have done it better perhaps with so few than with many, certainly for beginners. If a teacher does not require many specimens, so they be well selected, neither should he seek for them far and wide. Let the pupil find in his daily walks the illustrations and repeated evidence of what he has heard in the school-room. I think there should be a little museum in every school-room, some dozen specimens of radiates, a few hundred shells, a hundred insects, with some crustacea and worms, a few fishes, birds and mammalia, enough to characterize every class in the animal kingdom. Pupils should be encouraged to find their own specimens, and taught to handle them. This training is of greater value and wider application than it may seem. Delicacy of manipulation, such as the higher kinds of investigation demand, requires the whole organization to be brought into harmony with the mental action. The whole nervous system must be in subordination to the intellectual purpose. Even the pulsation of the arteries must not disturb the steadiness of attitude and gaze of the investigation.

Causes of Short Sight.—A recent paper by Dr. Liebreich throws light upon the origin of this defect. He demonstrates that the two evils of permanent short sight and curvature of the spine, both so much more frequent among the educated than the uneducated classes of society are developed by the unnatural posture usually enforced in schools. During childhood the eye possesses a great power of accommodating itself to distance, and if in reading and writing the desks are so arranged that the eye, instead of being twelve to fifteen inches distant, is kept at seven or eight inches from the book or paper, the eye adapts itself to the near object, and permanent short sight is the result. Moreover, as the predisposition to the disease is hereditary, short sight is constantly on the increase in highly civilized countries. The bad posture adopted at writing desks is also the chief cause of lateral curvature of the spine. In extreme cases, says Dr. Liebreich, the copy-book is pushed forward, so that its lower border is inclined at an angle of forty-five degrees with the edge of the table. The head is lowered and so much twisted that the left eye is only a few inches distant from the book; the left cheek almost touches the left hand, or even leans upon it; the ribs of the left side are pressed against the edge of the desk, and taller children slip backward on the forms, as that only the lower part of the thighs rests on the narrow bench. In many schools the pupils maintain this unnatural position for several hours daily until at last the muscles are over-tired, and premanent distortion of the spine is the inevitable result. To avoid these evils, desks should be so constructed that when the pupil is seated the shoulders should be even, the spine straight, the head balanced on the top of the spine, the elbows on a level with each other, and only the hands and part of the fore arm resting on the desk. In order to effect this, Dr. Liebreich recommends a desk in which the angle is twenty degrees, for writing; and which, by turning up a flap gives an angle of forty-five degrees, for supporting a book for reading. He strongly condemns the absurd, unanatomical motion that straight spines can be insured by making children sit up straight without support for the back, thus over-fatiguing the muscles, and producing the very effect desired to be avoided.

Meteorology.

Observations taken at Halifax, Nova Scotia, during the month of August, 1874; Lat: 44° 39' North; Long. 63° 36' West; height above the Sea, 125 feet, by 2nd Corporal J. T. Thompson, A. H. Corps.

Barometer, highest reading on the 17th	30.242	inches.
" lowest " " 6th	29.512	"
" range of pressure	.730	
" mean for month (reduced to 32° F)	29.793	
Thermometer, highest reading, on the 11th	82.2	degrees.
" lowest " " 25th	40.1	
" range in month	42.1	
" mean of highest	73.7	
" mean of lowest	49.2	
" mean daily range	24.5	
" mean for month	61.3	
" highest reading in sun's rays	133.9	
" lowest " on the grass	37.6	
Hygrometer, mean of dry bulb	65.7	
" mean of wet bulb	61.1	
" mean dew point	57.5	
" elastic force of vapour	.474	grains.
" weight of vapour in a cubic foot of air	5.2	
" weight required to saturate do	1.7	
" the degree of humidity (Compl. Sat. 100)	75	
" average weight of a cubic foot of air	523.9	
Wind, mean direction of, North	2.50	days.
" " North East	2.00	
" " East	1.50	
" " South East	3.50	
" " South	6.00	
" " South West	5.50	
" " West	4.00	
" " North West	6 00	
" " Calm	"	
" force by estimation	2.8	
" average daily velocity	190.7	miles.
Cloud, mean amount (0 to 10)	6.0	
Ozone, mean amount (0 to 10)	2.4	
Rain, number of days it fell	14	
Snow, number of days it fell	00	
Amount collected on ground	3.63	inches.
Fog, number of days	9	

Synopsis of Temperature, Cloud and Precipitation for June, 1874, compiled at the Toronto Observatory, from Observations in the several Provinces of the Dominion of Canada :—

PROVINCE.	ONTARIO.				QUEBEC.		NEW BRUNSWICK.		NOVA SCOTIA.			P. E. ISLAND.	MANITOBA.	NEWFOUNDLAND.	B. COLUMBIA.
STATION.	Toronto.	Little Current.	Welland	Point Clark.	Quebec.	Huntingdon.	St. John.	Fredericton.	Bathurst	Sydney.	Halifax.	Truro.	Charlottetown.	Winnipeg.	St. Johns	Spence's Bridge.
Hours from which means are derived	6, 8 A. M. 2, 10 & 12 P. M.	7 A. M., 2 & 9 P. M.	8 A. M. 2 & 9 P. M.	7 A. M. 2 & 9 P. M.	Bi-hourly.	7 A. M. 2 & 9 P. M.	Bi-hourly.	Tri-hourly.	7 A. M. 2 & 9 P. M.	Tri-hourly.	Tri-hourly.	7 A. M., 2 & 9 P. M.	8. A. M. 2 & 10 P. M.	7 A. M. 2 & 9 P. M.	8 A. M. 2 & 9 P. M.	7 A. M. 2 & 9 P. M.
Mean Temperature uncorrected for diurnal variation	Magnetic Obsvtry' 62.49	59.41	68.28	60.10	57.87	62.77	53.82	57.05	53.28	49.54	53.66	54.50	52.11	63.05	47.36	62.50
Warmest day	23	22	28	28	27	28	7	23	23	23	28	22	27	17	23	13
Temperature	78.03	74.80	80.80	74.30	69.83	78.25	63.70	68.80	68.77	64.29	68.83	63.90	62.45	78.25	62.50	70.00
Coldest day	11	12	1	1	1	1	1	1	1	2	2	1	1	8	2	23
Temperature	50.85	48.20	55.00	46.00	44.35	51.25	43.70	41.55	41.16	36.14	45.79	42.30	39.25	48.25	34.50	53.26
Mean of daily Maxima	72.34	68.94	76.77	.....	66.05	72.13	60.40	67.97	61.60	58.84	64.26	64.30	60.61	75.91	54.53	73.30
Mean of daily Minima	53.02	50.72	54.90	.....	49.31	55.80	47.27	48.83	43.70	41.10	45.57	46.20	46.58	51.24	38.83	50.90
Highest Temperature	88.0	86.1	90.0	80.0	83.0	90.0	75.0	81.0	82.0	78.4	79.2	77.1	75.0	94.0	71.5	82.0
Date	22	22	28	28	5	29	26	16	23	23	15	23	27	24	24	13
Lowest Temperature	44.2	35.8	40.0	44.0	37.1	43.0	38.0	37.0	33.0	27.2	36.5	30.5	36.3	30.5	28.0	44.0
Date	2	2	2	1	11	2	2	1	2	3	3	3	1	9	3	24
Percentage of Cloud	54	62	.....	46	52	52	75	.....	67	76	73	86	74	46	76	57
Depth of Rain in inches	1.80	4.19	1.78	3.32	2.59	2.59	6.17	2.94	5.84	5.98	7.92	3.02	3.38	4.95	5.51	1.03
Number of days in which rain fell	13	13	7	10	15	11	17	15	13	18	21	16	23	9	13	9
Depth of snow in inches	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of days in which snow fell	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
Total depth of rain and melted snow	1.80	4.19	1.78	3.32	2.59	2.59	8.17	2.94	5.84	5.98	7.92	3.02	3.38	4.35	5.51	1.03
Number of fair days	18	17	23	20	15	19	13	15	17	12	9	14	7	21	18	21

Printed by Léger Brousseau, 7 Buade Street, Quebec.