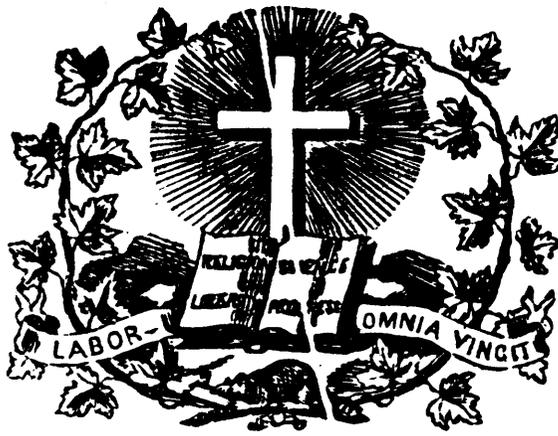


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EDUCATION.

The Teacher is the Book.

That the Teacher is the school, we find to be true in more than one sense; of course not in the full sense of the word, there

being, besides the teacher, some more constituents necessary for the full reality of a school—as, for instance, the pupils, the building, the school system, and its administration. But that the teacher ought to be the text book, is true in the proper sense of the word. The best school is that which makes the least use of text-books, the teacher filling their place.

The term text-book does not here apply to reading-books of whatever kind; no school can do away with these. But it applies to all other kinds of books which are commonly used in schools. Of these we hold that they ought to be replaced by oral teaching, and recitations by oral repetitions. It is no new theory which we here proclaim; it is the Pestalozzian system, as spread all over Germany and Switzerland, and tried and proved in half a century's practice of the reformed schools there.

On the other hand, the Anglo-Saxon system of teaching as practised in Great Britain and the United States, is book-teaching. Whenever any of the Sciences is to be taught in school, the teacher singles out a chapter of the text book introduced for learning by heart. The better class of teachers will, on this occasion, explain the contents of the chapter, or they will do the same thing after recitation—which is worse yet. The pupil has to recite his task, and a new chapter is committed to memory; and so on till the book is gone through. If there are practical examples given in the book, as for instance in all books of arithmetic, the pupil has to solve them, as well as he can, with, or without, the aid of the teacher—in a few cases in school, but on the whole at home. It strikes us that the teacher plays here a very subordinate part, and a machine might be invented to supplant him, in most cases; for hearing a recitation, and pronouncing a judgment on its perfection or imperfections, might generally be just as well performed by the better pupils of the class. The text-book here is almost everything, the teacher almost nothing or nobody. The pupil is passive and merely receptive; he is not guided to reproducing the matter to be mastered out of himself, to becoming active and independent. The matter is not developed in his mind, nor his mind developed through, and with the matter. It is only the best talent, a very small percentage of boys and girls, who will in this way become tolerably proficient in the science to be acquired; because only a very few have the mental capacity which is self-instructive, which digests mental food in whatsoever sauce served up. The balance of the pupils

will, after the lapse of a few months, have forgotten every particle of the truths thus received, but not assimilated. At least this is our experience.

In that system which makes a text-book of the teacher, the latter is, of course, required to be master of the science to be taught, to have it at his fingers' ends, thoroughly understood, and ready for communication. When he begins his instruction, it must be well prepared, and all he says on the subject must be calculated to inspire the learners with love for the science to be mastered, and its objects. Wherever it is possible to illustrate the subject by presenting it to ocular inspection, he will do it; each of his lessons is more or less an object-lesson. Whatever he can forego teaching himself, by eliciting it from the class through adroit questions, and by rendering thus the pupil self-active, he will make them see, and, in general examine with their own senses, what is to be seen or examined in the objects presented, and lead them to express their observations, when correct and complete, in proper language. The less he speaks himself, making the pupils speak instead, the better.

If he succeeds, in this way, in making them discover for themselves the principles and laws underlying the phenomena, he may depend on their never forgetting the chapter of science thus presented and illustrated. Thus he sharpens their perceptive powers, quickens their wits, their reflection, presence of mind, and attention,—he interests them in the objects presented to such a degree, that they acquire knowledge almost imperceptibly and without severe efforts. Learning becomes pleasure, and is accompanied with the same intense satisfaction which accompanies every kind of growth and perfect assimilation. Such a teacher is sure to attract and advance every single pupil of his class; and although learning in such a thorough manner must needs be slow and gradual from the outset, a great deal of time is gained in the end by the rapid mental growth of the pupils, and by their self-activity. Beginning slowly, he may make rapid strides in the end, because his pupils meet him half-way with keen mental appetites and ready assimilating powers. There is, of course, in every science a number of facts which are not mastered by simple reflection, but must, at the same time, be impressed upon the memory for immediate practical use. The teacher will further this work of memory either by dictating, at the end of the lesson, a short paragraph containing those facts, and by repeating the same with the class properly; or he will set the pupils themselves, when far enough advanced, to commit these facts to writing, and have the contents properly repeated; or he will, if a reading-book is at hand containing the facts, refer the class to their book, and repeat them from it. Thus the pupils will, in time, become living text-books, like the teacher, and what they have acquired will be their imperishable property, ready for any application in practical life. The science appropriated in this way will be alive in the scholars, and shed light on all cognate subjects. This is the Pestalozzian system of instruction, as compared with the Anglo-Saxon.

Now it will be easily seen that the system in which the teacher is the text-book, has great advantages over the other system, in which the teacher has a text-book, and the text-book is the real teacher. How superior soever be the text-book you may devise, they are dead teachers, and cannot engender life in the majority of the pupils. Besides, the pupils, if they advance materially by the aid of their books, will be grateful for this result, not to their teacher, but to their books. And if they do not advance, they will blame for this result not the book but the teacher. Thus the Anglo-Saxon system loosens, if it does not indeed destroy, the moral connection between the teacher and his pupils. The Pestalozzian teacher, on the contrary is very potent for good; there is a boundless confidence in his pupils, in him, and his office. They feel that they owe their rapid mental growth to him exclusively, and he is implicitly believed and obeyed. He sways their whole being as with a magic wand; he exerts over them an enormous moral influence for all educational purposes. He is to them the impersonation of truth, dignity, and moral worth; and he

must have very little moral character if he does not feel exalted by their appreciation of him, and stimulated to work out his own moral bearing into a model for them.

Now it may be pleaded in excuse for the Anglo-Saxon system, that there is in a country with a rapidly increasing population a great lack of competent teachers, and that, therefore, good text-books are to make up for this want, at least to some degree. Grant this is so, it is an evil to be overcome. Incompetent teachers lessen the respect due to science and education, thus doing almost more harm than good. The sooner you get rid of them the better. The radical reform is also, in this respect, the cheapest and most practicable of all. Besides that the text-books are, with scanty exceptions, faulty enough, and it is infinitely more difficult to prepare perfect text-books (nay, it is impossible, because the understanding and the wants of every individual learner are different) than to raise a generation of true and good teachers, who know how to accommodate themselves to the individual wants of every pupil. Finally, the text-books, need revision almost from year to year, science is now progressing in such a way as to revolutionize many old established truths, and it is opening new views in an unprecedented manner. But a live teacher may always control his science according to the latest discoveries, and conform his teachings to the modern improvements in knowledge and philosophy. He will be to the times, text-books never are.—*Am. Ed. Monthly.*

Mr. Froude's Inaugural Address at St. Andrew's University.

Those who have not had a university education, and those, also, who have to regret that, while at College, they neglected their opportunities, are receiving much comfort from very competent authorities. Mr. Anthony Froude cannot but know a good deal about it. On the one hand he went through all the successive stages of that process by which a well-born lad in these days is converted into an Educated English gentleman—that is, a person supposed to know enough about everything, to have received a capacity far learning more, and to be equal to most probable emergencies. Mr. Froude obtained honours, a fellowship, literary friends, and a start in life.....

The comfort he offers to persons of no education, or what is called neglected education, and to those who, by their own neglect, have thwarted the intentions of their friends, is that the best of an education is that which teaches a man to earn his bread, to be honest and true, to know just as much as he can be quite sure of and will certainly be of use to him. It may naturally be asked to whom it is that Mr. Froude addresses considerations with so good a basis in truth, but so contrary to the all-knowing, all-reaching, spirit of this age. Mr. Froude has just been elected Rector of the University of St. Andrew's, and they are to be found in his inaugural address.

We are always coming back to Dame Nature at last, and, when we have wandered into mazes of our own making, the best philosophy is that which brings us home again. Mr. Froude recalls us to those first and universal instincts and necessities which shape our lives, and ought to rule our studies. There is no education, he says, like doing—doing something good and useful, doing anything allowable so as it be doing. Our forefathers taught every child to do something or other. There was profit in doing, and progress in doing. Body, mind, and heart, friends and estate, all prospered in doing. For doing something must be known, and that indicates the knowledge to be acquired. When the world went mad after intellectual theories and transcendental dogmas, there came hordes of scholars and students, multitudinous schools and universities, in which poverty and actual mendicancy were very properly associated with knowledge by which nobody could live a day, and which added nothing to the common stock of the world. The present form of the delusion which dissociates knowledge from use, and mistakes for a finality that which should be only the means, is "cramming," and that which goes with it

—a servile cherishing of old-world thought and information. A man is now expected to know all the 'ologies, all countries, all histories, all languages, or at least something about everything there is, or ever has been, under the sun. It is quite impossible, Mr. Froude says, that any one man can possess very much and profitable knowledge of all things, or even many things. He is a bit of an historian himself; that or nothing; and upon glancing over an examination-paper in history for young men at college, he found one or two questions that perhaps he could answer. To minds engaged in the process of accumulation, all statements become verbal formulas, without life or meaning. Upon that other knowledge, which deals neither with men nor with things, but which professes to define the infinite and express the unknown, Mr. Froude is evidently sure of the full sympathy and concurrence of his northern hearers. A keen air has invigorated his mind, and he tells . . . the admirers of Knox, and the near descendants of Covenanters that all the matters with which the mind can deal belong to the age, that one controversy and one trial only succeeds another, and that the good and true man who would have been brought to the stake three or four centuries ago, has now to undergo a similar ordeal of mental perplexities, battle with prejudices and entanglement with human inventions.

There are several praises it would be impossible to deny to this address. It is really interesting. It throws the light of experience, of wit, and even of genius, on the folly of trying to teach a youth everything while he can do nothing, and while he really knows nothing. He exhibits the man stuffed with words and ideas hardly better than words, possessed with the conceit of universal knowledge and universal capacity, when a slight change of place and circumstances would bring out the lamentable truth that he can do nothing but break stones on the road — if, indeed, physical strength has survived his educational training. The world is full of such wrecks, and the addition of more studies and more subjects to the old, narrow routine, has not imparted to the education of an English gentleman either greater certainty of knowledge or more practical power. Mr. Froude evidently feels himself competent to measure, at least on one subject, the ignorance prevailing in the educated, or what should be the educated classes. They know nothing; or what they do know they know wrong, and to no good purpose. Meanwhile the world, while it flies from ignorance, attempts to learn still more; and they who know nothing well must show a smattering of every thing. All this is true, too true. It must be so, when Mr. Froude tells us so, for he ought to know; and it confirms our sad suspicion.—*Times.*

Individual versus Class Teaching.

When Lancaster, under high patronage, and with liberal support, introduced the monitorial, or mutual instruction system into these countries, a craze of admiration pervaded all classes interested in the progress of popular education, the most stupendous results were confidently predicted from its operation, and every partial success was received as incontestable proof of its universal adaptability. The ancient philosopher informed his prince that there was no royal road to the mathematics, but here was a republican road to the whole circle of the sciences; the master's labour was reduced to the minimum of mere superintendence, and according to the theory it did not much matter whether he himself was very deeply versed in the subjects to be learned or not. Some few who would have gone a little way with the system but could not be made to perceive all the results anticipated from it, were contemptuously regarded as narrow minded obstructives, old-world fogies whose mental vision was too contracted to permit of their sharing in the larger views of their contemporaries. A sufficiently long experience of the system, however, had the effect of very considerably moderating the enthusiasm of some of its most ardent supporters; it was found to fail in realising the great things expected from it, while its author, with those who still believed in it, attributed each

failure to want of capacity or of confidence on the part of those who had tried it in their schools. We believe the Lancasterian system, pure and simple, is still adhered to in a very few schools under local boards or committees, particularly in England; but though all that was good in it has been generally retained, no body of persons having a large control over popular education would now recommend the adoption of it in its entirety.

There are men however, at the present day, quite as much wedded to theories in education, and quite as jealous of any deviation from their favourite system as the most enthusiastic disciples of Lancaster were in respect of his. A large number of persons from whose minds the memory of the primary school, or the fire side, where they were instructed in the first rudiments, has faded away, remember only the lecture hall, or the class room, where the Professor, not held in the slightest degree accountable for those who *will* not learn, finds it as easy to impart instruction to one hundred adults, in the main attentive pupils, as to one. Conscious, for the time, only of how much of a subject they have mastered at a single lecture simultaneously with dozens of others, they are apt to forget how much at an earlier age, they have acquired from individual teaching nay, the amount of individual teaching they must have given to themselves in preparing for the lecture, and without which the Professor's labour would be comparatively fruitless. Seeing the decided advantage in schools and seminaries for advanced pupils, of simultaneous instruction, many are apt to rush to the conclusion that under all circumstances, and from the alphabet up to the sciences and humanities (inclusive), it must be the best, and, in fact, the only mode in which instruction should be imparted. So strongly is this idea impressed on the minds of some, that in the smallest primary school, they would not allow the least deviation from it; and the consequence is, under such strict and constant surveillance that he dares not venture an occasional departure from it, although a fair proportion of the more intelligent and attentive children will, in a reasonable time and with a hard working teacher, be found to have made fair progress, a large number of the slower and less attentive will, after perhaps a lengthened period of attendance, leave the school little better than they entered; and this is the experience of perhaps a greater number of teachers than are willing to acknowledge it.

In the National Board's "First Book" in-use a few years ago, there was a preface the principle of which was deemed of so much importance that at their examinations by both Professors and Inspectors, the teachers were usually required to repeat it from memory; in that preface, teachers were enjoined "never to advance a child to any lesson till he had completely mastered the preceding one." The writer of that preface seems to have understood the requirements of the class for which the book was intended: but, as it could not have been meant that a child who had mastered a lesson should be kept back for days, or perhaps weeks, until the duller or idler of his class or draft had come to a level with him, it necessarily—as far at least as that book was concerned—implied individual lessons; hence, perhaps, its omission from the present book.

Plume ourselves as we may on the superiority of our present over former systems, or, as we would call them, no systems, of education, numbers who are old enough to bear testimony in the matter know that in former years, fluent readers were made with more ease and in a shorter time than at present; and that such was the result of the nature and arrangement of the lessons in the reading books then in use, and to the universal practice of the then unwritten principle of the preface alluded to above of individual lessons, and of thoroughly learning at least the mechanical reading of one lesson before proceeding to another. We think we see Theoricus and Egotus, those two great oracles in matters educational, start at the bare mention of the word "mechanical" in relation to the teaching art; but we say, even with the aid of Dean Swift's laputan literary machine, make your pupils

fluent readers and good arithmeticians, and you arm them with a power of mental development which all the intellectual manipulation you can possibly bestow on them in your school will never give them. But to our subject.

Let us take, as an example, a school in a rural district or small town, where there are eighty or ninety on the rolls, and an average attendance of perhaps not more than forty. Whatever number of sections a class is divided into, the pupils of each separate draft must, according to the strict application of the rule, be reading the one lesson; some of the children from natural slowness, some from irregularity of attendance or other causes, do not keep pace with the quicker or more attentive pupils; the master advances them slowly according as a fair number has mastered each lesson—he cannot wait for the laggards—until as much of the book as is intended that section should read has been gone over; the draft is then examined, and from some perhaps having forgotten the earlier lessons, some having never learned them, it may be that less than one fourth are found fit for promotion to a higher section. But what of the other three-fourths? Why, they must be “put back,” and the labour of working them up to the same point again re-commenced. Now, there are few teachers who do not feel how much children are disgusted and discouraged in the labour of learning by this process “turning back;” if they could maintain their footing in that part of the book to which they had been advanced—and to which they never should have been advanced if they were not capable of doing so—it would be an encouragement to them to labour still, no matter how slow, their progress; but they recommence their sisyphian task with a listless, apathetic indifference, and with the dispiriting consciousness that at the end of the course they will be again left behind by many younger children, but of quicker parts, who are now admitted to their draft. This “turning back” is also a cause of much vexation to parents, many of whom, after a couple of such operations, lose all confidence in the system, and in some instances withdraw their children from the school, to which perhaps, they never return.

The remedy for this seems to be, that while class teaching, in every branch and at every stage where it is practically useful, should be strictly adhered to, individual lessons, in particular branches and at certain stages should be the rule. The writer once knew a very painstaking and successful teacher, one whose heart was in his business that adopted a system of the kind, and a sketch of his plan in one important branch—that of reading—will best indicate the object of this paper. His first and second book classes were each divided into sections—though the attendance was sometimes large, his plan rendered a greater number of divisions unnecessary. It was only in the first or lower sections that individual teaching was practised, and in them each child has his own particular lesson from which he was not advanced until he had mastered every word of it. The course of individual lessons in the first book extended to about one-half, and in the second, to something better than one-third of the book. At the time for reading lessons one or two of the more advanced boys were sent to teach and examine each of these sections, the children of which were occasionally encouraged to assist each other in their lessons; the temporary monitor placed those who had “their lessons” at the head of the draft, so that when the master came round he had no trouble or loss of time in picking them out, but was enabled by a few rapid and judicious questions to test in each case the correctness of the monitor’s judgment; any of the other children who thought themselves unfairly passed over were encouraged to inform the master that they had their lessons, and were examined accordingly; but whether passed by the monitor or not the missing of a single word prevented any child getting a “new lesson.”

The advantages of such a plan must be obvious; the child from hearing constantly read lessons in advance of his own is in some measure prepared to grapple with their difficulties when he arrives at them; and in the same way he is continually kept *en rapport* with the lessons he has already passed, so that whatever

way he has made his footing is secure, and the discouraging process of “turning back” is rendered perfectly unnecessary.

On this system, our friend made the best readers in the district; but it is to be regretted that on one occasion he came to grief. A new Inspector who happened to be a martinet, entered his school one morning while those two very drafts were under manipulation, and stood aghast with horror at finding all the children in one draft with a different lesson; the poor teacher’s attempts at explanation were indignantly scouted and he was soundly rated, *in presence of the children*, for such a daring infringement of the law as laid down by Theoricus and Egotus, and interpreted by him, the Inspector. The examination of the school showed that while in no branch was it below the best, in reading and arithmetic it was SUPERIOR TO ANY OTHER SCHOOL IN THE DISTRICT; but the “results,” though patent, had not been arrived at by the legitimate road, and in a week after, the Manager of the School received a formidable looking document “On Her Majesty’s Service,” requiring him “severely to reprimand, &c. The reprimand was duly administered, and of course the teacher, as by necessity bound, expressed proper contrition for his fault, but in turning away could not help repeating to himself, in the spirit of Galileo, “My system is right for all that.”—*Irish Teachers’ Journal*.

An Error Illustrated.

The feeling has been quite too common that any one could “keep school;” so that many schools, have been *kept*, while but few have been well *taught*; they have been kept *from* true knowledge, and not in garnering up for future usefulness. Hence, mere striplings, or men of maturer age with no fixed views or plans, engage in “keeping school,” though they never teach, because themselves untaught. They can neither discipline nor instruct, because they have never themselves been properly disciplined and instructed.

When Dinter was school-counsellor in Prussia, a military man of great influence urged him to recommend a disabled soldier, in whom he was interested, as a school teacher. “I will do so,” said Dinter, “if he can sustain the requisite examination.” “Oh,” said the Colonel, “he does not know aught about school-teaching; but he is a good, moral, steady man, and I hope you will recommend him, to oblige me.” “Oh, yes,” said Dinter, “to oblige you, if you, in your turn, will do me a favor.” “And what favor can I do you?” asked the Colonel. “Why, get me appointed drum-major in your regiment,” said Dinter. “It is true that I can neither beat a drum nor play a fife; but I am a good, moral, steady man as ever lived.—*Northend’s “Teacher and Parent.”*”

Compound Words.

It is surprising with what frequency hyphens are omitted between the parts of compound words, and inserted where the purpose would be answered as well without. Persons are apt to write glass-house a house where glass is manufactured, for glass house, a house made of glass; paper-box, a box to put paper in, for paper box, a box made of paper, and *vice versa*. Other examples are the expressions live-oaks, and live oaks; the former meaning a species of oak, as the live oaks of Texas, the latter growing or thriving oaks. Honey-moon and honey moon are so different in meaning, that while the former refers to the first month after marriage, the latter, almost meaningless, means a moon of honey. Black-lead, black-grass, black-gum (for which see definitions in Webster Dictionary) are perceptibly changed in meaning by omitting the hyphen. Black lead means lead of a black colour; black grass means grass of a black hue; black gum means gum of a black color. High-sounding literature is a term implying a sort of pompous literature, or writing; but high sounding literature has hardly any meaning. Well-informed means intelligent, possessed of an accurate knowledge of things;

well informed means correctly informed; or so as not to admit of doubts. Several rules are laid down for this purpose, which are found quite important. Words:—Silk gown, salt mine, gold pen, no hyphen. Rule 1. "Omit the hyphen when the first substantive serves the purpose of an adjective, expressing the matter or substance of which the second thing is composed, and may be placed after it with *of* (not denoting possession.)" Words:—Laundry-maid, grog-shop, cork-screw, school-master, with hyphen. Rule 2. "When the first word does not express the matter or substance of the second, and may be placed after it with *of* (denoting possession,) or with *for*, or *belonging to*, the hyphen should be inserted." *Eclaircissement*. Rule 1. Silk gown means a gown of silk. The first substantive, by designating the substance of which the second consists, serves the purpose of an adjective, and may be placed after the second with *of* (not denoting possession.) Salt mine and gold pen, ditto. Rule 2. Laundry-maid, means a maid for the laundry; grog-shop means a shop for grog, —more distinctly, a place where grog is sold; school-master means a master of a school, &c. The first words do not express the matter or substance of the second, and may be placed after them with *for* or *of* (denoting possession.)

Of the many words, however, coming to our notice in the form of compounds, at least one fourth were better, if not more correctly, not hyphenated. The frequent and long use of them certainly sanctions the omission of the hyphen. The following are words of this class: Inkstand, schoolhouse, schoolroom, school-master, statesman, journeyman, bookstore, bookseller, fisherman, loghouse, honeysuckle, hummingbird, mockingbird, bumblebee, &c., &c. Most, if not all, of these, however, are often written by good writers, with the hyphen inserted.—*Anon. in Northampton Educator*.

Language and Grammar.

The proper studies of boyhood may be classified under three heads,—language, mathematics, and science, both natural and exact. Without going into much detail, we wish, first, to consider what the training of all boys whose parents can afford to let them study until they are twenty-one should be in each of these principal subdivisions up to about the seventeenth year.

In language, the first thing which a child should study with persistence and thoroughness is his native tongue; and this, not through its formal grammar, but by reading aloud, by committing to memory choice bits, and by listening to a good teacher's commentary upon passages selected from standard authors on purpose to illustrate the capacities and varieties of the English sentence, the nature of its parts, the significance of the order of words, and the use of epithets. A child can drink in and instinctively appreciate the beauties of a refined or noble style years before he can understand grammar and rhetoric, just as he admires the flaming woods of Autumn long before he even thinks to inquire into the elements and explanations of their sudden glory. The mother tongue should come to a child by unconscious imitation of good examples, by impregnation unawares with the idiomatic essence of the native speech. But to this end the best examples, in prose and poetry, must be kept constantly before him from the time when he can first commit to memory a bit of poetry (not doggerel) or a verse of the Bible. Almost all American schools utterly neglect this kind of training. French and German boys study their own languages in the manner above indicated early and late; but in England and the United States the study of formal grammar has unfortunately replaced the true study of English. When a boy has learned by imitation to know and use his mother tongue, it will be time enough for him to look at it as an instrument of thought; and before this time comes, it is to be hoped that he will have studied grammar in some other language than his own. English literature should be the first which an American boy studies. It is a shame that so many boys of seventeen read the *Georgics* before the *Midsummer Night's Dream*, *Horace* before *Milton*, and *Xenophon* before

Napier. The boys' school ought to teach English systematically and amply, so that no child's knowledge of his native language should be left to the chance influences of his home, the street, and the newspaper.—*From the Atlantic Monthly*.

Homes.

Recreation is a necessity of our hard-working, overstrained life. Men and women need it, and will have it. But should they go from home to find it? Is home nothing but a place to sleep, eat and drudge in? a place to be escaped from, as from a prison, whenever enjoyment is to be sought? Plainly false and injurious as is such a view, it seems to be that which generally prevails among us. The members of our households seek their recreation abroad. Yielding to different tastes, or controlled by different circumstances, they seek it in different places. Husbands and wives, parents and children, thus separate from one another in their associations, the family unity disappears, and the seeds of discord are planted in the home circle. Under this false and fatal idea, that it is necessary to go abroad to seek after enjoyments, society has become a travelling association of pleasure-hunters, as if pleasure could be found by thus hunting for it. The old, happy home-life is disappearing—we had almost sadly said, has disappeared; and with it is vanishing not only the truest enjoyment, but also the greatest safe-guard of our social state. Miserable or guilty is that man who quits his home to find enjoyment. Lost is that woman who does it. Unhappy is the son or daughter who does not find home the happiest spot on earth. The family circle is a misnomer, as applied to the members of households thus separate in their associations and pleasures. With them there can be no golden chain of holy affection strengthened and kept bright by loving association and the communion of the innocent joys and sacred sorrows of the family. Home should be the dearest, happiest spot on earth to every individual. There the weary man of business should find his needed rest. There the wife and mother should find her purest, deepest pleasure. And there children should find attractions stronger than all the world can present.

We tinker away at the evils of society, and go on making new "societies" to amuse, instruct or restrain our people, when the great want is *homes!*—*Spectator*.

The Result of Application.

Seek to acquire the power of continuous application, without which you cannot expect success. If you do this, you will be able to perceive the distance which it creates between you and those who have not such habits. You will not count yourself nor will they count you, as one of them. Thus you will find yourself emerging into the higher regions of intellectual and earnest men—men who are capable of making a place for themselves, instead of standing idly gaping, desiring a place without the power to command it. Keep on striving to accomplish more and more every day, and thus enlarge constantly the range of your intellectual ability. If you learn to do as much work in one day as you used to do in two or three days, you are as good as two or three such men as you formerly were, boiled down to one.—*Dr. Wayland*.

Manners.

Manners are much with all, but most with teachers. Children live with them several years. They catch their ways. Postures, changes of countenance, tone of voice, minutest matters, are taken and transmitted, and go through generations. Teachers should think of these things. Carelessness in dress, language, position, carriage, are all noticed, often imitated, always ridiculed. *Teachers should have no tricks.*—*Bishop Doane*.

LITERATURE.

POETRY.

DISMISSED.

"*Tecum, vivere amem; tecum obeam lubens.*"

I have stood the last time in my school-room,
And have said that the school was dismissed,
My loved ones have gathered around me
To bid me good-bye and be kissed.
In the emerald lanes and the meadows
Their musical voices depart;
There is silence at last in my school-room,
A silence that saddens my heart.

Alone, all alone, in my school-room,
Where three happy winters I've been,
Alone, all alone, in my school-room,
Where I shall be never again;
And, methinks, as the lengthening shadows
Obscure the old maps with their gloom,
That some of life's sunniest hours
May close with the door of my room.

Hours spent with the gentle and loving,
Too bright and too blissful to last,
Yet leaving a mellower twilight
To fade with the dawn of the past.
Hours bright with the footsteps of angels,
And pure as the regions above,
'Tis sweet to be loved by the many,
'Tis sweet to have many to love.

Yes, I have been happy this winter,—
Wherever my lot may be cast,
My mind will go back in its dreamings
To the beautiful light of the past.
To the school-house that stood by the meadow,
To the play-ground, the pond, and the swing,
And memory find in the Autumn
The gentle aroma of Spring.

They go from their books and their study,
They go from their pastime and play,
From a band that was tender and loving,
Uncertain their lot and their way;
Their faces all bright with the sunset,
As they leave the old house in their tears;
May their faces be bright with the sunset,
When turned to the valley of years.

I have set no examples of passion
For them to embitter their lot;
I've appealed to their gentler nature,
And taught them what Jesus had taught;—
And if, in their moments unguarded,
Their errors suggested the rod,
I've gone with my burden of sorrow
To them and the presence of God.

I would pray for the loved ones departing,
That God would direct them aright,
Till the bells of the school-room of glory
Ring out from the portals of light.
That they may go forth in their beauty,
As in childhood and youth unbeguiled,
And meet for that heavenly kingdom,
Which Jesus compared to a child.

My life shall be wiser and calmer
By the lessons I've learned from the young,—
I ask not for riches and honor,
Nor love that the poets have sung;
But, when, in life's wearisome journey,
My lot is less pleasant and mild,
I solace would seek from the children,
My sorrows would tell to a child.

—*Boston Recorder.*

IF ?

If our path were strewn with roses
That concealed no stinging thorn;
If the hour when one joy closes
Saw another newly-born—
If our dreams were full of beauty,
And our waking hours of peace,
Would we feel for those whose duty
Never gives their hearts release?

If our dwelling were a palace,
Where we knew no pang or pain.
Where the red wine in life's chalice
Bore no bitterness, no bane,
Would our sympathies awaken,
Would our velvet hands be spread
For the outcast, the forsaken,
Who has neither home nor bread?

If our raiment were the fairest
That the Indies could afford;
If the daintiest food and rarest,
Daily crowned our glittering board,
Could our full hearts know the sorrow
Of the patient, toiling poor,
Who tremble lest to-morrow
Bring gaunt famine to their door?

If we knew no lack, no losses,
Disappointment, toil, or care,
Would we succor him whose crosses
Are too wearisome to bear?
If we slept on silken couches
Prankt with costly gems, and gold,
Would we pity him who crouches
By the wayside in the cold?

If the world were juster, truer,
In its censure and its praise—
If our doubts and fears were fewer;
Fewer weary nights and days.
If there were no graves behind us
Where the loved and lost ones sleep,
No sweet memories to bind us,
Would we weep with those who weep?

If our hopes were never blasted—
If our love grew never cold,
If our strength and beauty lasted
Till a hundred years were told,
Would our hearts be humbly given
To the giver of such bliss—
Would we ever think of heaven
As a better place than this?

From Round Table.

CANADIAN HISTORY.

Memoirs of the Richelieu.

No. VIII.—ST. DENIS.

Who has not heard of the battle of St. Denis? It is, perhaps, the chief incident of the rebellion of 1837, and, as such, has given a celebrity to the village of that name, that it would otherwise not have. St. Denis is situated on the right bank of the Richelieu, five miles below St. Charles, and twenty above the mouth of the river. It does not differ from any of the neighboring hamlets, except that it is one of the largest.

When the insurrection had fairly broken out, St. Charles and St. Denis, especially the former, were chosen as the head-quarters of the *Patriotes*, in the district southeast of the St. Lawrence. Dr. Wolfred Nelson, one of the principal leaders, being a resident of St. Denis, most of his partisans naturally joined him there. As we mentioned in our last paper, Cols. Gore and Wetherall were despatched against him. We have already seen how Wetherall succeeded at St. Charles. We are now to relate how Gore was foiled in his mission.

He started from Sorel with a force of 300 regulars, a few cavalry

and one field-piece. He was accompanied also by a company of volunteers, but it appears that these proceeded no farther than St. Ours and did not come under fire. Instead of following the line of the river, Gore passed through the country roads, meeting with no obstacle till he reached the southern outskirts of St. Denis village. There Dr. Nelson determined to oppose his march, and prevent him, if possible, from forming a junction with Wetherall, at St. Charles. The insurgent commander had about 800 men under his orders, only 120 of whom were provided with muskets, the rest being armed with pikes, pitchforks and bludgeons. Nelson barricaded himself, with a number of these, in a large stone house on the river bank. This house, known as that of Mad. St. Germain, still stands, a monument of the battle. Those who were provided with fire-arms were stationed in the upper story, while those who had no muskets, kept guard below with all kind of utensils. It was a very unsoldierly arrangement, for if Gore had been able to surround the house, it would have become a slaughter pen. Luckily for themselves, the insurgents abandoned this position after receiving a few volleys which brought down five of their number. The troops, in their turn, took possession of several adjoining houses, which manœuvre enabled them to keep up a rolling fire at the insurgents, without being much exposed. Though the artillery was also brought to play, Col. Gore perceived that he was making very little progress. He ordered Capt Markham to assault a distillery defended by some fifteen or twenty Canadians. This attack was likewise fruitless, Markham himself was severely wounded, and several of his men were killed.

In the early part of the afternoon, when the inhabitants of the surrounding country discovered that their companions were still holding their own in the village, many of them plucked up courage and joined the insurgent camp. The reinforcement raised the number of those who bore fire-arms to 206. Nelson immediately resolved on assuming the offensive. After a great deal of dodging about fences and walls, he succeeded in dislodging a considerable part of the troops who were firing upon them from behind a barn.

The engagement soon became general throughout the southern portion of the village, but after a contest of two hours, the veteran Gore, an officer who had fought in the Peninsula and at Waterloo, was obliged to sound the retreat. He left his field-piece, part of his ammunition, and many of his wounded in the hands of his enemy. Nelson pursued him a little way, without however doing any further damage.

The leaders Papineau and O'Callaghan took no part in the fight. There was an amusing controversy carried on in 1848, in regard to the former gentleman's behavior on this occasion. Some pretended that he showed the white feather when the hour of danger appeared, while his friends maintain that he was persuaded by Nelson himself to escape before St. Denis was attacked.

If November 23, 1837, was a day of glory for the insurgents, it was stained by a crime, for which their leaders were not responsible, and which the *patriotes* themselves reprobated in open terms. The night before the battle a handsome young officer, Lieutenant Ware, was taken prisoner at St. Denis. He was bearer of a despatch from Gore to Wetherall. Nelson ordered four of his men to transport him to the entrenched camp at St. Charles, and on the way, he asked to be relieved of his handcuffs, giving his word that he would not attempt to escape. This favor was granted, but the prisoner finding a chance to abscond forgot his pledge and jumped out of the waggon. Mignault, one of his guards, seized him by the collar and could easily have mastered him, but a cry was raised in the village to cut him down. Two or three fell upon him and inhumanly cleft his skull. The poor youth made signs to them to despatch him as soon as possible, and one of them acceded to his request. The body was then thrown on the river bank and left there during the whole day of the battle while some one or two of those who had participated in his murder, strutted through the streets, boasting of their crime.

The grave of Lieut. Ware could be seen up to lately, in the soldier's cemetery on the Papineau road at Montreal.—*St. Johns News*.

The Queen's Pedigree.

The royal house springs from three stems—Saxon, Norman, and Scotch—though it has never repudiated the Conquest, and dates itself we believe, only from the bastard son of Duke Robert, heir of Rollo, the Viking who conquered Normandy from Charles the Simple, and married the French King's daughter Gila. The Conqueror's son, Henry the First, married Matilda, daughter of Malcolm III., of Scotland, and Margaret, grand-daughter of Edmund Ironsides, and representative, after the death of Edgar Atheling, of the old Saxon line. Their daughter, another Matilda, was mother of Henry the Second and from his accession the Plantagenets represented both Norman

and Saxon lines, and were entitled, on the principles now held by legitimists, to the loyalty of both races—the conquering and the subject one. This House continued unbroken till the death of Edward the Third, when the abstract right fell for a century into dispute. The "legitimate" claim, in modern parlance, was with the House of York, which inherited direct from Edmund, third son of Edward the Third, and was therefore the nearest male branch. The fourth son, however, John of Gaunt, "time-honoured Lancaster," had married Blanche of Lancaster, representative of the second son of Henry the Third, and therefore of an elder, though female, branch. Both Roses, however, were descended from the Plantagenet stock, and each, in default of the other, was admitted to be unquestioned heir of the throne. Henry the Seventh, the direct representative of Lancaster, fortunately married Elizabeth, heiress of York, and Henry the Eighth therefore united every possible claim—was, in fact, the strict lineal representative of the Plantagenets, and therefore of both Saxon and Norman dynasties. The name of Tudor became that of the family, because the Countess of Richmond, mother of Henry the Seventh, and heiress of the Lancastrian claim, had married a Welsh squire of that name. The three next Sovereigns, Edward the Sixth, Mary and Elizabeth, are out of the line of succession, all dying, fortunately for Great Britain, childless. Henry the Seventh's daughter Margaret, however, whose claim was as perfect as that of her brother, Henry the Eighth, had married James the Fourth of Scotland (killed at Flodden,) and the Scotch House, then called Stewart, on Elizabeth's death, ascended the English throne as representative of every English line.

This House had become regal in Scotland in 1418, Marjory, sole child of Robert the Bruce (of Bannockburn,) having married Walter, eighth Lord Stewart of Scotland, and, like herself, a descendant of Kenneth the Second, stem of all Scotch royalty.

The Stewards, the Stewarts, or Stuarts, were therefore "legitimate" Sovereigns both in Scotland and England, and neither the Rebellion nor Revolution, strange, to say, broke up the line. They accepted descendants of the daughter of James the First, instead of descendants of his son. This daughter, Elizabeth of Bohemia, was the mother of the Electress Sophia, and grand mother of George the First, from whom the reigning Sovereign is directly descended. Hers is not, it is true, the most direct branch of the Stuarts, for, on the failure of the Pretender's line—which expired in the Cardinal of York—the "legitimate" claim reverted to the children of Henrietta daughter of Charles the First, and ancestress of the "legitimate" Bourbons, and of the House of Savoy, the latter being the nearer to the succession. Nevertheless, though not heiress, the Queen is the direct descendant of the Stuarts, and it is a mistake in this sense, to call the royal house a purely German one. No English house in existence is nearer the ancient stock. The great points in the pedigree, the junctions, as it were, which alone it is necessary to remember, are Henry the Second, who inherited from his mother the representation of both Norman and Saxon lines; Margaret, of Lancaster-cum-York, who united all the fibres of title derivable from the Plantagenets, and, therefore, from Henry the Second; James the First, who inherited her rights and those of the Scotch throne; and George the First, through his daughter Elizabeth. The Queen is, therefore, by a curious series of circumstances, the only Protestant with a claim to be heir to every family which has occupied the British throne since the Seven Kingdoms were united, and though there are descendants nearer to Charles the First, they, like her, claim through the female line, and her ancestress is the one furthest back on the tree. The inquiry may seem, to modern ideas, to involve some waste of time, but England owes much of her special character, her fixed dislike to break with the past, to the fact that she had never been forced either to import a new dynasty, as the French have done, or to give up the hereditary principle altogether.

The royal title to Ireland, and some other portions of the Isles, rests on a different foundation. Ireland, unluckily for us all, had no regal house to bring to its rulers the advantage of a title by admitted descent. The Channel Islands are the last relic of the old Norman Dukedom, and belong, therefore, rather to the dynasty than the kingdom; the Orkneys came from Norway through Margaret, wife of James the Third,—the King of Norway, unable to pay her portion, having offered the islands in pawn for the amount; and the sovereignty over the Isle of Man was bought during our own day from the representatives of the house of Stanley.—*Spectator*.

Foreign Faces.

Beranger had a beautiful face; it beamed with a genial and fatherly spirit; Lamennais, with his immense brow and piercing eyes, looked like a converted Mephistopheles still troubled with questions, the most purely intellectual and intense of human faces,—to me a terrible face; then there was the extraordinary face of Michael, the advocate, described by George Sand in "Histoire de Ma Vie," looking as if he had two craniums, one soldered upon the other; the sign of all the high faculties of the soul not more prominent at the brow than the generous instincts were at the stern of the strong vessel. At the first glance, although but thirty, he looked sixty years old. When you enter the French Chamber of Deputies you are struck with the resemblance to American faces, but they are more refined. The men of state all over the world have the same general traits. It is only by watching the play of emotion and the movement of thought that you notice the difference. Then you see that they have thoughts that are not our thoughts, and are qualified by fine and exquisite things. In one word, they have a refined scale of emotions unknown to us. It is a great misfortune to be pre-occupied with vulgar or trivial things; they cannot make the heroic face. The reason that poets have such beautiful faces, in spite of habits like Burn's and Poe's is that they contemplate beautiful things and think grand and generous thoughts. All the great painters have been handsome and remarkable looking men; Titian and Raphael and Rubens and Vandyke readily illustrate my statement. Tintoret had a solemn and grand face; Da Vinci, a noble and beautiful face; Rembrandt, a sagacious, honest, profound face. Our fine sculptors Brown, Ward, Palmer, and Thompson—have something continental about their faces, and do not look narrow, but as if illuminated by a ray of the ideal. The finest faces in Europe were the faces of Shakspeare, Molière, and Goethe. Their faces prove to us that just in the measure that we escape sordid thoughts and material cares, and occupy our minds with the beauty of nature, the wit of men, the poetry of life, we set to work a skilful sculptor, who day by day models with an imperceptible and sure hand the heavy, expressionless clay; and in time the rude features become almost grand with goodness like Lincoln's, beautiful with tranquillity like Washington's, or Titanic like Webster's. Let us imitate the Greeks, the most beautiful of all the historic races, or the Etruscans, who were the most elegant, and recommend to the women of the land to place in their houses the statues of antique heroes the pictures of beautiful women. Each generation should be the perfected illustration of all that we admire or ought to admire. But let us dispense with cast-iron dogs, deer, and nymphs, manufactured by enterprising Americans for our country homes. The worse than barbarous taste shown in these hideous imitations of reality must make a lover of the beautiful despair. We have got to learn that statues and fountains and vases cannot be made as we make sewing-machines and steam-ploughs; that a cast-iron dog, from a poor model, does not take the place of the antique boar of the Tuileries or the lion of Barye. It is because poets and painters and men of science are admitted into the universal life that their faces lose mean local traits and resemble each other. The noblest men are not national, but universal. When we think great actions we look them; when we entertain dreams and have sentiment we look it, as Hawthorne, as Shelley as Keats. The face betrays the thought. What would Whittier's face be without the poetry that has flown over it? What is any face that has not been touched, shaped, developed by those invisible influences which come to us from the ideal world and nature, which we call art, science, music? If we spend our days monotonously, like fabricators of pins, we must drain our faces of even what we bring from our anterior life; and how soon most of us lose the traces of that life which in childhood gives such a magic and innocent depth to the eye, which remains sometimes in boyhood and youth,—a wide-eyed, bewildered expression, as if to say the soul does not yet understand why it is subjected to the enormous pressure of prosaic and deadening circumstances accumulated by the machinery of social life—*Atlantic Monthly*.

How to Retain a Good Face.

A correspondent has some fair ideas on the importance of mental activity in retaining a good face. He says: "We were speaking of handsome men the other evening, and I was wondering why K. had lost the beauty for which five years ago he was so famous. "Oh, it's because he never did anything," said B.; "he never worked, thought, or suffered. You must have the mind chiseling away at the features, if you want handsome middle-aged men." Since hearing that remark, I have been on the watch to see whether it is generally true and it is. A handsome man who does nothing but eat and drink, grows flabby, and the fine lines of his features are lost; but the hard

thinker has an admirable sculptor at work, keeping his fine lines in repair, and constantly going over his face to improve the original design."—*Penn. S. Journal*.

SCIENCE.

Progress of Astronomy in 1868.

BY W. T. LYNN, B.A., F.R.A.S.

Of the Royal Observatory, Greenwich.

The Sun.—The principal point of interest in regard to the great central luminary of our system, has been the observation of the total solar eclipse last August. British, French, Prussian, and Austrian expeditions were sent out, and were all, more or less, successful. The accounts of the English observers, Major Tennant, Lieutenant Herschel, and their colleagues, will be found referred to in November number of *The Student*, which also contains a translation of the account of Dr. Weiss, who had charge of the Austrian expedition. The German observations were made at Aden; the French, in Hindostan and in the Malayan peninsula, by M. Janssen and by M. Stephan respectively. A conclusion of great importance resulted from the observations. The rose-coloured protuberances of prominences, concerning which there has been so much discussion, were definitely determined to consist of gaseous matter in a state of ignition. The thought occurred to M. Janssen to endeavour to see the spectrum produced by the protuberances after the eclipse, when the protuberances themselves were not visible. And accordingly, the next day, August 19, very early in the morning, he succeeded in seeing the bright lines, which he now knew were due to their presence, and was thus enabled to study the region and extent of the prominences more at leisure, than in the short space of time allowed by the duration of the eclipse. Frequent and great changes were shown in their distribution, and the presence of hydrogen fully proved. On the 4th of September, further observations were made, and M. Janssen considered that he had completely established as facts, "that the luminous prominences are formed of incandescent hydrogen, the gas, which, at least, predominates in them, if they are not exclusively composed of it; and that they are the seat of movements of which no terrestrial phenomenon can afford any idea; masses of matter, the volume of which is many hundred times greater than that of the earth, completely changing their position and form in the space of some minutes." Not long after Janssen's observations, an observer in England, Mr. Lockyer, also succeeded, on the 20th of October, in seeing the spectrum of the prominences at a time when there was no eclipse to make the prominences themselves visible. The idea had indeed been suggested some time before, and Mr. Huggins had also searched for the lines given by the prominences, but without success. Mr. Lockyer, however, had the advantage of a new spectroscope, specially adapted for the purpose, and obtained evidence of the existence of protuberant matter completely surrounding the Sun like an envelope. Indeed, many of the observations made during total eclipses, had made it probable that the so-called prominences were local heapings-up of matter which, to a less extent, surrounded or nearly so the whole body of the sun. It may now, therefore, be considered as proved, that it is enveloped all round by a considerable thickness of gaseous matter, in a state of ignition. The spectral observations made at the late eclipse, show also that beyond this envelope is a far larger one, consisting of non-luminous gaseous or vaporized matter, made visible by reflecting the solar light, and forming the corona.

Another very interesting discovery resulting from the August total eclipse (which will always be a memorable one in the history of astronomy) was the *spiral* conformation of the protuberances, indicating a rotatory motion in the ignited gaseous matter composing them. This was shown by the photographs made under the direction of Major Tennant, and also by the changes of form of the same prominence, as seen at successive times along different parts of the line of totality.

In speaking of the Sun, we must not omit to mention the satisfactory investigation of the transit of Venus, across his disc, in 1769, which was made last year by Mr. Stone, and of which an account was given in considerable detail in the December and January numbers of *The Student*. Its result was completely to confirm the recent measures of the Sun's mean distance, which all methods are now proved to unite in determining to be about 91,500,000 miles. Of course this decides also the distance of all the planets, the periods of which are well known, and these periods accurately giving the relative distance by Kepler's third law.

The Planets.—Not much new has transpired in regard to the planets that is worthy of special remark. A larger number of the so-called Minor Planets, forming the group between Mars and Jupiter, was discovered in 1868 than in any previous year. That number amounted to eleven, making the whole number of planets in the group 106. The latest four were discovered by Professor Watson, of Ann Arbor, Michigan. Some further use has been made of these minute bodies in physical astronomy, Professor Hansen, of Gotha, having redetermined the mass of Jupiter by means of the perturbations produced by him on the motions of Egeria. The result agrees pretty nearly with previous determinations.

Comets.—In cometary astronomy, something has been added to our knowledge. The periodical comets of Encke (1) and Brorsen have returned according to prediction, and been well observed. A new comet was discovered by Dr. Winnecke on June 13th, and became for a short time just visible to the naked eye. Its orbit was parabolic, so that it is not periodic. The new powerful agent in astronomical research, spectrum analysis, has again been applied to comets with success. Mr. Huggins examined the spectrum of the new comet just mentioned (which is denominated II. 1868), and found a close agreement between it and the spectrum of carbon. It would appear, therefore, that carbon is a constituent in the composition of comets. The identity of orbit which has been proved to exist between some comets and the more remarkable groups of meteors, has led to some speculation on a possible identity or similarity of constitution. The existence of carbon in comets does not militate against this, as that element has also been found in several masses of meteoric matter which have fallen to the earth. Perhaps the fact may even not be without some suggestiveness that the substance in question enters, on the earth, so largely into the composition of *organic matter*.

Mr. Huggins, and Father Secchi, at Rome, also examined Brorsen's comet with the spectroscope, as they had previously done some others, with the view of ascertaining how far they were either self-luminous or visible by reflected light. The conclusion was that the nucleus alone (with sometimes part of the surrounding nebulous matter), shines with its own proper luminosity, whilst the greater part of the coma and envelopes derive their light from the Sun. Mr. Huggins made formerly a valuable suggestion on this head, viz., that as the comæ and tails appear to be formed of matter thrown off from the nucleus, which gradually condenses afterwards into a cloud-like mass, there must be an intermediate state in which the matter ceases to be self-luminous, but yet retains its gaseous state and reflects but little light. Thus would be explained the existence of the dark spaces which, in some comets, separate the cloud-like envelopes from the nucleus and from each other.

Meteoric Observations.—These now form a branch of astronomy, and one too of high interest. An account of a very valuable paper, by Dr. Weiss, was given in *The Student* for October (p. 199). It refers more particularly to the curious identity of orbit which exists between some comets and meteors, which was first called attention to by Signor Schiaparelli, in the case of the August meteors. This was afterwards shown to be true also of the November meteors, the orbit of which agrees very closely with that of Comet I. 1866, as that of the August meteors does with the orbit of Comet III. 1862. Dr. Weiss's calculations make it probable that the group of meteors seen about April 20th, move in the same orbit with Comet I. 1861; and that another, which has been found to appear about November 28th, has the same path with the comet of Biela, which has been seen only once since its separation into two parts in 1846. He also found that Comet III. 1853, had a remarkable similarity of orbit with a group of meteors seen about August 11th (somewhat later than the Perseides or Principal group of that month), excepting in the element of perihelion distance; and concluded that it was possible he had hit upon a case in which the tail of the Comet extended over the Earth's orbit, and originated a stream of meteors of considerable length in radial, though small in tangential, direction. If comets really are the original bodies, the gradual dispersion of which, through the feeble cohesion of their parts, produces those meteoric rings, the appearances of which have for some years formed so diligent a subject of investigation, it is undoubtedly a very interesting circumstance, and

1. In addition to the observations of Encke's comet, mentioned in our last number, a good series made at Lund, in Sweden, by Professor Möller and his assistant Herr Dunér, between July 28 and August 30, 1868, has since been published ("Astronomische Nachrichten," No. 1728). I have been informed by Mr. H. Wortham, F. R. A. S., of Royston, Herts, and by Mr. T. W. Backhouse, of Sunderland, that they both obtained a view of the comet on more than one occasion, though they did not make any accurate observations of it.

one from which we may look for further increase in our knowledge of their constitution. But the subject is still in its infancy, and there can be no doubt that comets are bodies of widely different conformation, since any matter existing in space which comes within the sphere of the Sun's attraction, must necessarily be drawn into an orbit of some kind (permanent only if elliptic) round him. No perfectly satisfactory theory of the tails, by which they are frequently accompanied has yet been brought forward. Too little, moreover, is known of the actual position and curvature of form of these to expect any positive manifestation of their existence, as shown in other phenomena.

Dr. Weiss is of opinion that it deserves more attention than has yet been given to it, that the meteors belonging to different streams possess, to a great extent, distinct peculiarities of colour, appearance of train when such exists, and other particulars. Thus, the meteors belonging to the Perseides constantly increase in apparent brightness as they pass along their path in the sky, being most conspicuous at the time of their disappearance. On the other hand, those which appear about the same time of the year (mentioned just now as possibly due to the tail of the Comet III. 1853), and radiate from the neighbourhood of the pole-star, have a whitish colour, a much less intense light, and exhibit no change in apparent brightness during their course, moving indeed for the most part with such velocity as to leave the impression of mere phosphoric lines.

He goes on to show that the actual height at which meteors appear and disappear is connected with the velocity of their motion, being greatest for those which move fastest. An instance of this is furnished by the well-known August and November showers (the Perseides and Leonides), the latter of which move much more rapidly, and are seen at greater elevations, than the former. Dr. Weiss thinks that it is desirable to ascertain for every known group of meteors, as far as possible, the mean height of appearance and disappearance. At present this can only be done with any certainty in the case of the Perseides, which are first seen at an elevation of about seventy miles, and vanish from sight when about fifty-five miles in height.

The observation of shooting-stars has been well continued during 1868, but all the results are not yet known. Those of last November gave a very brilliant display, even in many parts of Europe. It was most conspicuous about six o'clock on the morning of the 14th, which being several hours after we expected to be in the middle of the stream, proves that its thickness and extent is greater than had been supposed. It was well seen at Rome by Secchi, and at Madrid by Aguilar, and partly also by some observers in this country and elsewhere. A very interesting account of the display, as seen in Canada by Mr. Elvins, and Professor Kingston, at Toronto, was contributed by the former gentleman to the last number of *THE STUDENT* (p. 467.). The discussion of the observations will doubtless lead to improved knowledge of the constitution of the ring of meteors composing the so-called Leonides.

The Fixed Stars and Nebulæ.—In the wide field of stellar astronomy, observers have been, during 1868, by no means idle. But, partly by reason of the vastness of the field, it is only at distant intervals that results appear which materially affect the extent of our knowledge. A few special points may be just named, whilst the reader is reminded that material is being constantly accumulated which will doubtless hereafter be productive of abundant fruit. Dr. Schmidt, at Athens, and Professor Schonfeld, at Mannheim, have been vigorously following up the subject of variable stars. It is now one of great extent, as well as interest, and its continued prosecution exceedingly desirable. Constant and diligent observation will probably here, as in so many other fields of study, lead in time to a clearer understanding of the true nature and causes of the phenomena seen.

We may mention here that Mr. Birmingham, of Milbrook, who was, we believe, the first to detect the extraordinary outburst of light in a small star in Corona in 1866, discovered also a similar one, but somewhat less conspicuous, in Ursa Major last year. The small star known as 83 Ursæ Majoris, which is barely visible to the naked eye, was seen by him on the night of August 6th, equal in brightness to δ of that constellation, or of the third magnitude. It afterwards gradually faded away again to its ordinary size. So far as we know, Mr. Birmingham was the only observer of this remarkable fact, which affords another instance that naked-eye observing is even still sometimes not unproductive.

Professor D'Arrest, of Copenhagen, has been prosecuting his nebula observations with his magnificent refractor. We mentioned, in the April (1868) number of *THE STUDENT* (p. 213), his additional interesting observations of the great nebula in Orion (now known to be gaseous in constitution) and its connections.

We gave also an account, in the number for May (p. 284), of a re-investigation, by Dr. Schur, of Berlin, of the orbit of the double star 70 Ophiuchi, which appeared to reconcile all the observations better

than the calculations of his predecessors. The result was that the one star revolved round the other in the space of ninety-four years: also using Kruger's previous determination of the parallax (which gave a distance of the star from the solar system amounting to about 120 billions of miles), that the mass of 70 Ophiuchi is about three times as great as that of the Sun, and that the distance of the two stars composing it from each other is about thirty times that of the Earth from the Sun. Double-star observations generally continue, and will doubtless long continue, to be an interesting field of research.

Another determination of the parallax and distance of a fixed star has been published, and is referred to in the June number of *THE STUDENT* (p. 377). The star is *a Centauri*, in the southern hemisphere already known to be the nearest of all the fixed stars. Professor Moesta, Director of the Observatory at Santiago in Chili, discussed a large number of observations made by him and came to the conclusion that the parallax was $0''.88$. Comparing this with other determinations, it may, we think, be safely inferred that this quantity is really about nine-tenths of a second, and consequently the distance a little more than twenty billions of miles.

From the above hasty and imperfect sketch, it will be seen that the progress of astronomy during the past year has been far from unsatisfactory. And we may hope that during the present it will at least be not less so.—*The Student*.

The Coming Transits of Venus.

The London Herald says: The Astronomer Royal is doing good service in preparing betimes for the greatest astronomical events of the century. The transits of Venus will take place in 1874 and 1882. Though it may seem a long time to look forward to, to those who are unacquainted with the amount of preparation required for such observation, those who know the difficulty of procuring a large number of first-rate instruments, unless plenty of time is allowed, will know that there is really no time to be lost, especially if, as we should hope would be the case, all the expeditions sent out are provided with precisely similar instruments and apparatus. If any amount of failure takes place, it will not be from want of preparation on Mr. Airy's part. At the late meeting of the Royal Astronomical Society, he showed that there was nothing indefinite about his ideas; he had already prepared careful maps both for observing the ingress and the egress of the planet. He showed the importance of sending expeditions to several places, because, among other considerations, a thousand obstacles might interfere with the observations in any particular place.

There are places which, if weather, etc., are favorable, will be admirable for all purposes, but, as in the case of Kerguelen Land, the chances are very much against a clear atmosphere. Captain Toynbee said this Land is seldom to be found on account of the fog. If practicable, no expedition will be of the importance of one sent to the South Pole, *i. e.*, as near to it as possible. At the South Pole the effect of parallax will be greatest, that is to say, the position of Venus will vary to the greatest extent on the sun's disc. The Astronomer Royal in his maps suggests two points, one in Enderby's Land but here the sun would be too low for it to be a certainly advantageous position—he greatly preferred a point in the Antarctic Continent, where Sir James Ross landed.

As a place for observation nothing could be better. The only point is, will the severity of the climate admit of the expedition? Captain Richards the hydrographer to the Admiralty, spoke well upon it. He showed that if properly fitted out and provided with good huts, clothing and food, there would be no further objection to the place than must stand in the way of any arctic expedition. Those, however, who joined in it would have to make up their minds to one thing, namely, that they would have to spend a year upon the spot; because it was unapproachable at anything near the time when the transit will take place. To show, however, that he did not consider this any way fatal to the position as a station for observation, he said that he should much like to be one of the party himself. In this he was fully borne out by Captain Davis, who landed there with Sir James Ross. So that we may hope that this, at least, will be one station, and that the government will not postpone till too late the preparations to make it as favorable for the comfort of the spirited observers who will join in the expedition as for the objects of the enterprise. It may possibly be advisable to send out an exploring party previously, though Captain Davis did not seem to think it would be necessary.

The first great difficulty in all places will be to get the absolute longitude. No ordinary nautical longitude will be of the slightest value. Observations necessary can be made at any places easily ac-

cessible, as far as England is concerned, as at Alexandria, where the telegraph will be of great use; at many places too in the United States, where we can safely leave the work to the Americans. We may especially do the same in the case of the Russians, where the exact longitude of Orsk, the extremity of the great arc of longitude extending from that place to Valencia, is known to a millionth part of a second, or in other words, to absolute certainty. The other places which are recommended to the English Government are—Mauritius for one season, and Madagascar for another. If, however, it should be thought unnecessary to fix on both of these spots, then an intermediate station, *viz.*, on the Island of Bourbon, would be preferable. If the Astronomer Royal can show that the two stations would be of a considerable advantage we hope no financial reasons will prevent his wishes being carried out. Above all things we would urge upon the authorities the importance of making up their minds as to the instruments to be used, and in losing no time in having them put in hand. There is one more point worth noticing. How far photography can be depended upon as to accuracy in helping to discover the sun's distance is not easy to answer off-hand, but certainly it is not to be doubted that much useful and interesting information may be secured by its means.

ART.

New Uses Of Aniline.

Coal, a substance which we take up with tongs in order not to soil our fingers, is not only concentrated heat and light, but is the producer of the most beautiful coloring substances with which we are acquainted.

It has long been known that the aniline colors extracted from coal are used by the dyer, but it is much less generally known that they are applicable to many other purposes.

Since the year 1862, large quantities of aniline colors have been employed by paper manufacturers for the coloring of their paper pulp, or for the azuring of the surface of the paper after its final manufacture.

Aniline has here replaced ultramarine, metallic oxides, and dye woods. It is introduced in aqueous solution into the pulp or at the period of sizing.

The various kinds of shades for windows, lamps, etc., made to imitate fine porcelain, are covered by aniline. A design is printed on paper by means of an aniline lake, dissolved in a solution of a salt of aniline. This is then laid on damp albuminous paper. The color is taken up and fixed by the albumen, and the whole design is reproduced on the paper in a beautiful manner.

Wafers, sand for drying ink, etc., are colored by means of aniline.

Red and violet writing inks are prepared with salt of rosaniline.

Typographical inks are made by dissolving the colors in alcohol holding a resinous substance in solution, and which are precipitated by the addition of water. The precipitate, when dry, is pulverized and mixed with varnish and with ground barytes or white zinc. Instead of barytes or zinc, starch colored by aniline may be rubbed into the varnish.

The same aniline colors are utilized for the coloring of hanging papers, aquarelles, photographs, etc. Photographs obtained by this process are very remarkable for their transparency and delicacy of tint.

Refuse of wool, in the shape of dust colored by aniline, is employed to manufacture the "velvet coated" papers.

Lakes on wood, with splendid metallic lustre are obtained by steeping the wood in hot concentrated solutions of aniline colors, drying rapidly in a current of heated air, and coating with a transparent varnish of copal dissolved in ether. The same operation applies to the coloring of straw hats, and to the production of artificial leaves.

Beads and false enamels are colored with aniline.

The colored globes used for public illuminations are also stained in the same way. For this purpose, they are steeped in a solution of albumen, dried, and thrown into the aniline solution. By this simple process, globes are obtained more splendid even than by the use of the solution of gold or Cassius purple.

Artificial stones, mother-of-pearl, and ivory are treated in an identical manner.

Soap, cold cream, pomatum, cosmetic powders, candles, and lucifer matches are colored by aniline.

The aniline blues and violets are at present of great benefit to the micrographer and anatomist for the dyeing of tissues which they color diversely according to the nature of their parts. For this purpose, they have advantageously replaced carmine and ammonia, which often corroded and destroyed delicate membranes.

The red, blue and violet with collodion form the best kind of liquid for the anatomical injection of capillaries and other minutes vessels. After being thus injected, they may be indefinitely preserved in glycerine.

Aniline colors derived from coal were discovered in 1856, a date which must ever be memorable in the annals of technology.—*Scientific American*.

Photographs in Quinin

A salt well known to pharmacists called the "*citrate of iron and quinine*." This is essentially a compound resulting from the combination of per-citrate of iron (containing some proto salt) with citrate of the well known vegetable alkaloid, quinine. As usually sold, it presents the appearance of a mass of fine greenish-yellow scales, which have been long known to be somewhat sensitive, when dry, to the action of light. The compound is so very soluble in water that it cannot be obtained in crystals; hence the solution of the substance is evaporated to dryness, and the residue sold as the citrate of iron and quinine.

But in this part of the manufacture of the compound, a peculiarity has been introduced. The solution of the citrate of iron and quinine, after its preparation, is evaporated to a sirupy consistence; and now, instead of carrying the evaporation further in an ordinary dish, the sirupy liquid is painted over glass or porcelain plates, and the remaining moisture driven off in a hot-air chamber. When perfectly dry, the compound is removed in greenish-yellow scales by scraping each plate with a knife. This is the general mode of making "scaled" preparations.

Mr Wood, in preparing some of the citrate of iron and quinine in scales, conducted the final evaporation in the full light of an April sun instead of in the dark hot-chamber; as the desiccation proceeded the salt decomposed easily under the influence of the solar rays, those parts of the plate crossed by shadows of bottles, &c., placed in a window, not giving evidence of any reduction. The change observed was simply a whitening of those parts which had been acted upon by light. The salt was now placed in water, and it was found that, instead of dissolving very rapidly as usual, a white residue was left on treatment with water, and this white substance subsequently dissolved very slowly.

The question may now be asked—What is the white insoluble substance resulting from the action of the light on the double citrate of iron and quinine? Mr. Wood, believes that this white substance is *citrate of quinine*, no doubt accompanied by some proto-salt of iron.

If this be true, a photograph is, therefore, obtainable, in which a salt of quinine constitutes the lights of the picture; and so the title which we have given to this article is justified.

But our object in drawing attention to the matter here is to point out the curious and interesting fact (if it be so) that the simple destruction of a solvent, *i. e.*, solution of nitrate of iron, appears here to be the prime cause of the production of the quinine photograph; thus affording us a more extended view of possible processes than we would otherwise have had, while the experiment alone is interesting as touching the manufacture of a beautiful compound of per-citrate of iron—a substance which has long since attracted attention in consequence of the facility with which it is acted upon by light.—*British Journal of Photography*.

OFFICIAL NOTICES.



Ministry of Public Instruction

APPOINTMENTS.

The Lieutenant-Governor, by an Order in Council dated the 12th ult., was pleased to appoint the following School Commissioners and Trustees for the following Municipalities:

SCHOOL COMMISSIONERS.

St. Hélène, Co. of Bagot: Mr. Jérémie Déry.
St. Canut, No. 1, Co. of Two Mountains: M. Paul Joly.
St. Côme, Co. of Joliette: Mr. Jules Marion.
Mont-Carmel, Co. of Kamouraska: Mr. Rémy Lavoie.
Ripon, Co. of Ottawa: Mr. Joseph Sabourin.
Mansfield, Co. of Pontiac: Messrs. George Bryson, John Coble, Thomas Bryson, Patrick Davis, and James McNaughton.
Brompton, Co. of Richmond: Mr. Benjamin Greenlay.

TRUSTEES.

St. Eustache, Co. of Two Mountains: Mr. Robert Miller.
Côte des Neiges, Co. of Hochelaga: Mr. James Snowdon.
St. Romuald, Co. of Lévis: Mr. C. Henry Crawford.
Ste. Foye, Co. of Quebec: Mr. John Pye.

The Lieutenant Governor by an Order in Council dated the 4th inst., in virtue of the powers conferred on him by the Statute concerning Schools, passed in the last session of the Legislature, has been pleased to appoint the following Gentlemen to form part of the Board of School Commissioners for the City of Montreal, namely: the Revd. Paul Leblanc, and Peter S. Murphy and Louis Bélanger, Esqs., conjointly with the Revd. Mr. T. Rousselot, and Edward Murphy and Narcisse Valois, Esqs., appointed by the City Council, in virtue of said Statute.

DIPLOMAS GRANTED BY BOARDS OF EXAMINERS.

KAMOURASKA BOARD.

Session of May 4th, 1869.

ELEMENTARY SCHOOL DIPLOMA, (F.) 1st Class:—Misses Alphonsine Bard, Palmyre Blanchet, Marie Philomène Cloutier, Arthémise Côté Anaïs Desjardins, Augustine Dionne, Euphémie Dionne, Léa Fournier Rosalie Fraser, Célestine LeBel, Demerise Levasseur, Justine Lévêque Adèle Michaud, Eugénie Sirois, and Georgina Soucy.

2nd Class:—Misses Hélène Lagacé, and Adèle Paré.

P. DUMAIS,
Secretary.

WATERLOO AND SWEETSBURGH PROTESTANT BOARD.

Session of May 4th, 1869.

ELEMENTARY SCHOOL DIPLOMA, (E.) 1st Class:—Misses Matilda J. Armstrong, Emma Abbot, Flora M. Bedee, Anna E. Boothe, Dorothy E. Beattie, Mary J. Clark, Jane O. Gilbert, Edna A. Hunt, Susan C. Hemphill, Sophia E. Johnston, Lucy E. Mills, Ella J. Rhicard, Sarah Rudd, Eunice Reuter, Margaret Robinson, Hannah Symms, Catherine L. Truax, Sophia Willard, Messrs. Alfred Hill and John E. Lawrence.

2nd Class:—Misses Mary L. Barnes, Rebecca Galbraith, Almada Gardner, Elizabeth Hammond, Rachel Hunt, Susan Lee, Charlotte Reuter, Messrs. Alvin Batcheller, James M. Montle and George H. Prentice.

WM. GIBSON,
Secretary.

RICHMOND PROTESTANT BOARD.

Session of May 4th, 1869.

ELEMENTARY SCHOOL DIPLOMA (E.) 1st Class:—Misses Louisa M. McCullough, Hannah E. Smith, Rebecca F. McKenzie, Frances Ellen Towne, Eliza A. Atkinson, Elizabeth J. Wilson, Messrs. Ralph Travis and Charles E. Andrews.

2nd Class:—Misses Hattie H. Cleveland, Lucinda Wilson, Sarah Carson Fanny Armstrong, and Mary E. Gold.

C. P. CLEVELAND,
Secretary.

AYLMER BOARD.

Session of May 4th, 1869.

ELEMENTARY SCHOOL DIPLOMA, (F.) 2nd Class:—Miss Maria Angelina Landriault.

JOHN R. WOODS,
Secretary.

GASPÉ BOARD

Adjourned Session of May 13th, 1869.

ELEMENTARY SCHOOL DIPLOMA, (F.) 1st Class:—Misses Anaflette Laliberté and Georgiana Tremblay (E. & F.)

E. J. FLYNN,
Secretary.

MONTREAL PROTESTANT BOARD.

Session of May 4th, 1869.

MODEL SCHOOL DIPLOMA, (E.) 1st Class:—Misses Janet McNaughton, Janet Muir, and Mr. William McDermid.

2nd Class:—Mr. David F. Hawley.

ELEMENTARY SCHOOL DIPLOMA, (E.) 1st Class:—Misses Agnes Cousins, Ellen E. Dean, Augusta A. Derrick, Elizabeth Nicholson, Margaret Nicholson, and Bunnie A. Pollica.

2nd Class:—Misses Mary E. Featherstone, Euphemia Ferris, Mary McMartin, Sarah Whiteside, Messrs. Robert Graham, and George M. Miller.

T. A. GIBSON,
Secretary.

MONTREAL CATHOLIC BOARD.

Session of May 4th and 5th, 1869.

ELEMENTARY SCHOOL DIPLOMA, (F.) 1st Class:—Misses Philomène Beauchemin, Angèle Bénard, Tharsile Bergeron, Marie Anne Bernier, Philomène Evelina Bertrand, Adèle Brien dit Desrochers, Aglaë Brodeur, Azilda Colin, Eliza Corbeil, Elvina Mélina David, Constance Dupras, Normandie Dutrisac, Euphéb e Frégeau, Malvina Fontaine dit Bienvenue, Marie Gabouriau, Zoé Gaudette, Alphonsine Guérin, Marie Virginie Hémare, Marie Lacas, Rose de Lima Lalancette, Elizabeth Lallier, Octavie Joséphine Lambert, Edwidge Laporte, Apolline Laurence, Gléphire Lauzon, Emma Lefebvre, Hermine Louise Lefebvre, Azilda Noiseux, Elizabeth Perrault, Céline Pinsonneault, Marie Léna Poitras, Odille Racicot, Léocadie Roberge, Elmire Robert, Rose de Lima Robillard, Emma Sabourin, Emélie Sagala, Aurélie Tétrault, Louise Mélina Villeneuve, Mrs. Bonin, (née Adeline Soucis), Messrs. Nectaire Galipeau, and Magloire Black (E. & F.).

2nd Class:—Misses Philomène Aubé, Elmire Augé, Cordélia Champoux, Adée Gazaille, Hermine or Arménie Lachapelle, Emélie Milot, Azilda Pelletier, Marie Christin St. Amour, and Henriette Vézina.

F. X. VALADE,
Secretary.

WANTED.

A school by a gentleman furnished with an Elementary School Diploma and good testimonials. Address Ministry of Public Instruction, Quebec.

DONATION TO THE LIBRARY OF THE DEPARTMENT OF PUBLIC INSTRUCTION.

The Hon. the Minister of Public Instruction acknowledges, with thanks, the following donation to the Library of the Department:

From M. Vidal, Esq., Representative for the Fourth District of Louisiana:—

Annual Report of the Board of Regents of the Smithsonian Institution for the year 1867.

Report of the Commissioner of Agriculture for the year 1867.

Report of the Secretary of the Treasury on the State of the Finances for the year 1868.

THE JOURNAL OF EDUCATION.

QUEBEC, PROVINCE OF QUEBEC, JUNE, 1869.

The Gilchrist Scholarships.

Our readers are aware that the late Mr. Gilchrist bequeathed funds for endowing scholarships, tenable by competitors to whom they might be awarded, at the London University and several other Collegiate Institutions in Great Britain. Of these one has

been assigned to be competed for by the youth of the Dominion of Canada.

Last year it was gained by a young man belonging to the Province of Ontario, there being only one candidate for that of Quebec, who, it would appear, was not eligible on account of his age exceeding 22 years.

This year, it is believed, there will be five or six candidates in the Province of Quebec, who are to compete for the Scholarships on the 28th instant, and following days, in the cities of Montreal and Quebec respectively. The sub-examiners for the city of Quebec are Dr. Miles, of the department, and Dr. Chandonnet of the Laval Normal School, and, for Montreal, Professor Robins of the McGill Normal School, and Mr. Archambault.

The prize to be contended for is £100 sterling per annum for each year of a collegiate course to be attended by the successful candidate in the London University, England, or such other of certain designated Universities as may be preferred at the option of the successful candidate.

It is likely that the interest taken in this competition will increase from year to year, and we hope that, in this and following years, the educated youth of the Province of Quebec will not be found to be behind those of the other Provinces of the Dominion in the race for academical distinction. It will, in any case, be an honor worth contending for, even if the successful candidate may not choose, eventually, to expatriate himself for the purpose of attending upon a collegiate course, during three or four years, in a British University. We shall duly chronicle the results of the competition for this year, when they become known.

Educational Reports.

We would hereby tender our thanks to the following Gentlemen,—Hon. A. J. Craig, Superintendent of Public Instruction, State of Wisconsin; Hon. Oramel Hosford, Superintendent of Public Instruction, State of Michigan; Hon. J. P. Wickersham, Superintendent of Common Schools, State of Pennsylvania; Hon. E. A. Apgar, Superintendent of Public Instruction, State of New Jersey; J. D. Philbrick, Esq., Superintendent Boston City Schools; B. C. Hobbs, Esq., Superintendent of Public Instruction, State of Indiana; T. H. Rand, Esq., Superintendent of Education, Nova Scotia; Revd. T. W. Conway, Superintendent of Public Education, State of Louisiana; B. G. Northrop, Esq., Secretary State Board of Education, Connecticut; Commissioner Norris of Ohio, the Superintendent of Public Schools of the City Rochester, and John Haddon, Esq., Inspector of Protestant Schools, New Foundland,—who have kindly favored us with their late Reports on the State of Education in their respective States, Cities, and Provinces. A few of these have been on our table for some time, and others have come to hand quite recently.

In our April number we gave a condensed analysis of the Reports for New-Brunswick for 1867, Pennsylvania, Maine and Missouri for 1868, and promised to pay off arrears in May, but were unable. In our present issue we have confined our attention to a synopsis of the statistical portions only of the Reports for Massachusetts, Michigan, Wisconsin, New Jersey, Connecticut, Indiana, and Ohio. In a future number we hope to give the remaining ones in the same order, and afterwards some

extracts from these Reports on Normal Schools, Teachers' Institutes, District Superintendency, etc.

MASSACHUSETTS, 1868.

The Board say:—"At no previous time in the history of the country, has there been in the public mind so deep a conviction of the value and need of the best education for the people.

The sum expended on the Public Schools, exclusive of expense of erecting new school houses and of school books, exceeds that of last year by nearly a third of a million of dollars. Nearly one hundred new public schools have been established during the year, and the number of scholars has increased in the public and decreased in the private schools.

No statute limits the amount that may be raised by taxation for the support of schools. Good men can be found every where who will supervise the schools, and for adequate compensation, good teachers can be procured and retained. With wise supervision, good teachers and liberal appropriations, the schools cannot fail to flourish.

Upon the Teacher, however, rests the responsibility of imparting thorough instruction, without which all other means and helps are of little avail. Hence every movement made and every dollar spent for the purpose of multiplying good teachers is evidently in the right direction, and it is mainly to their proper education, and to the elevation of teaching to the dignity of a distinct profession, offering as strong inducements as any other, that we must look for permanent improvement in our Public Schools.

The Board of Education long since felt the importance of establishing professional schools, for the instruction of teachers in the Art of teaching, and, in the face of much opposition which has mostly died away, succeeded in founding those grand institutions the Normal Schools which the people of the Commonwealth have learned to regard with a just pride. As a proof of the confidence bestowed upon these schools, we need only state, that there are now more pupils in them than at any former period, and two of them have more pupils than they can well accommodate. The demand for graduates from these schools has been greater than the supply for some years past.

In 1858, 76 per cent of all the teachers employed in the Public Schools were females; and, in 1868, they had increased to 87 per cent; a gain of 11 per cent in ten years. It is a gratifying fact that, while they have so largely taken possession of the Public Schools, they have also recognized the necessity of preparing themselves in the Normal Schools for the work of teaching."

The Secretary's Report furnishes the following:—Number of School Districts, 1834; School-houses, 3,350; Public Schools, 4957; number of persons in the State between five and fifteen years of age, 266,745; number of Scholars of all ages in all the Public Schools in summer, 242,760; in winter, 243,425; average attendance in summer, 195,216; in winter, 199,228; ratio of mean average attendance for all between five and fifteen, .74; number under five attending Public Schools, 3,450; number over fifteen, 25,347; number of male teachers during the year, 939; females, 6,862; average length of school year, 8 mos. 5 d.; average salary of male teachers per month, \$72.93; females \$27.84; amount raised by taxes for the support of Public Schools, \$2,635,774.06; increase for the year, \$280,268.10; amount paid for Superintendency of Schools and printing of School Reports, \$88,496.96; aggregate return as expended on Public Schools alone, exclusive of repairing and erecting School houses, and of School-books \$2,850,704.52; increase for the year \$318,903.90; estimated value of Public School-houses in 1867, as returned, \$9,603,674.24; amount paid in 1867, for erecting and repairing School-houses for Public Schools \$1,495,573.78.

Amount expended on Public Schools alone, including the interest on money, invested in School-houses, including also the expense of erecting and repairing, as returned for 1867, and the estimated annual cost of School-books, is about five millions of dollars per annum, or \$18.70 for every person in the State between five and fifteen. The whole amount expended on Schools and academies in Massachusetts, exclusive of Colleges and Professional Schools, is *five millions five hundred and fifty thousand* per annum, or \$20.75 per scholar in the State, between five and fifteen years of age.

Brookline appropriates \$29.82 for every child between five and fifteen; Nahant, \$21.62; Arlington, \$20.54; Newton, \$20.00; Milton, \$19.80; Boston, \$17.71; and so on descending as low as \$1.13. Boston raised by taxes for the support of Schools 1867-68, \$638,450.00 for 36,030 children between five and fifteen. Population of Boston,—State census of 1865,—192,324; Valuation (1865), \$378,303,357; no. of Schools, 283; School-houses, 77; estimated value of do., \$1,776,176.26; cost of erecting in 1867, \$203,883.81; average salary of teachers per month, including the value of board,

males, \$242.69; females, \$86.43; the Principal's salary of High-School, is \$4,000.00 per annum; there are 56 unincorporated Academies and Private Schools, with an average attendance of 2,180, paying tuition fees, \$186,173.00.

MICHIGAN, 1868.

The Statistics furnished by the Inspectors' Reports, afford gratifying evidence of progress. Although errors abound, there is still a vast improvement over any previous year, — which is to be attributed very much to the county supervision. The number of towns and cities reported, is 778; districts 4843; the number of children reported between five and twenty years of age, is 354,950; a gain of 16,756; the number attending School is reported at 249,920; 6,637 of these, under five or over twenty; the number of male teachers was 2,086; females, 7,522; 78 per cent of the teaching is done by females; average length of School year six and one-fifth months; number of School-houses 4,694; there are not less than 200 districts without houses; the value of School-houses and sites reported, is \$4,285,627; number of graded schools, 207; average salary of teachers, per month,—males \$47.78; females \$21.92; the number of visits by County Superintendents, was 5,243; of directors 9,575, an increase of 2,142,—an improvement in the attention of executive officers, attributable directly to the influence of County Superintendency. In 1857, the whole no. of children was 215,928; attending School 162,936; no. of male teachers 2,131; females 4,605; average of School year 5.7 mos.; salaries of teachers \$425,129.22; raised by rate \$121,650.14; for building and repairing \$161,350.91;—for 1868 respectively 353,838; 249,920; 2,086; 7,522; \$1,038,131.38; \$110,654.97, and \$805,382.41.

WISCONSIN, 1868.

From a perusal of the report for 1868 we find that in every particular, there seems to have been a slight gain on the record of the preceding year, though not more than the natural growth of the State would warrant. The whole number of districts in the State is 3,881; number of children over four and under twenty, in the State, 386,640; attending School, 246,105; total no. who have attended Public Schools during the year, 249,007; average number of days School was maintained, 141½; number of pupils who have attended Private Schools 14,679; number of teachers required 5,267; number employed during the year, 8,566; average monthly salary of male teachers \$42.97; females \$27.18; number of Schools visited by the County Superintendent, 4,177; Public Schools in the State, 4,646; no. of Pupils they will accommodate 271,009; total valuation of School-houses \$2,573,393.99; expended for building and repairing, \$452,419.08; expended for furniture, registers and records \$68,897.75; total expended \$1,791,940.52; expended for each person of School age \$4.64; for each pupil registered \$7.19; the ratio of apportionment last year was 48 cents per scholar.

NEW JERSEY, 1868.

The following is the amount of money received from various sources for the support of Public Education during the School year ending August 31, 1868, \$1,313,358.02.

The whole number of children in the State between five and eighteen years of age is 240,870, an increase over last year of 9,852. The amount of voluntary school tax paid in 1857 was \$317,184.93; in 1868 \$1,140,142.33; the total increase from 1857 to 1866 ten (years) was \$189,477.67; the increase of 1868 over 1867 is \$355,411.91. The amount of School tax raised this year is more than double the amount ever raised in one year previous to 1867, and the increase since last year is nearly double the total increase for the ten years preceding 1866. The amount paid, in 1854, for building and repairing School-houses was \$44,925.99,—this year it is \$805,581.01—a sum greater than the total amount raised during the fast fourteen years. The total valuation of the School property in the State is returned at \$2,114,509.87. According to reports made 104,506 children have attended the public schools some time during the year; 16,755 have attended private schools, and 32,189 attended no school,—leaving 86,290; of which 67 per cent attended the public schools 11 per cent, the private schools and 22 per cent no school. Taking this percentage on the whole number of children in the State, there are 161,048 attending Public Schools, 26,441 attending Private Schools, and 52,881 attending no school; making 240,370 the whole number in the State. Taking the percentage of attendance for the different periods on the whole number estimated to have attended the public schools, there are 19,230 who have attended 10 months; 21,633, between 8 and 10 months; 26,441, between 6 and 8 months; 33,652, between 4 and 6 months, and 60,092 for a period less than 4 months, a total of 161,048.

CONNECTICUT, 1868.

Number of School Districts in the State, 1,572; number of common or Public Schools, 1,640; number of departments in Public Schools, 2,140; number of children between four and sixteen years of age, January, 1868, 123,650; number of children between four and sixteen years of age, January, 1869, 129,082; average number in each district between four and sixteen years of age, January, 1869, 79; average length of Public Schools for the year, 8 months, 3 days; number of Scholars over sixteen years of age in Public Schools, 2,644; number of teachers in winter; males, 645; females, 1,580, total, 2,225; number of teachers in summer; males, 150; females, 2,057, total, 2,207; number of teachers of the same School two or more successive terms, 1,453; number of teachers who never taught before, 651; average wages per month of male teachers, including board, \$56.64; averages wages per month of female teachers, including board, \$26.93; capital of the School Fund, \$2,046,108.87; dividend per child from School Fund, 1869, \$1.00; amount raised for Schools by town tax, \$160,347.35; increase for the year, \$10,666.36; amount raised for Schools by district tax, \$467,804.77; increase for the year, \$872.87; total amount received for Public Schools from all sources, \$1,048,086.71; increase for the year, \$59,280.39; amount received for each child enumerated \$8.44; increase for the year, .30; amount expended for teachers' wages, \$609,658.05; increase for the year, \$52,464.83; amount expended for new buildings, \$276,901.14; increase for the year, \$80,447.86; amount expended for repairs, \$51,781.32; amount expended for libraries and apparatus, \$3,898.87; increase for the year, \$1,095.94; amount expended for other objects, \$97,746.85; increase for the year, \$5,546.10; total amount expended for Public Schools, \$1,102,170.19; increase for the year, \$139,441.98.

INDIANA, 1868.

Whole number of children between 6 and 21 years of age, 591,661; number of School Districts in the State, 8594; number of Districts in which Schools were taught within the year, 8,453; Pupils attending Primary Schools, 275,746; Pupils attending High Schools, 10,991; average daily attendance in Primary Schools, 275,745; average daily attendance in High Schools, 7,595; average length of Schools in days, 87; number of Male Teachers employed, 6,462; number of Female Teachers employed, 4,236; number of Male Teachers licensed, 4,588; number of Female Teachers licensed, 3,108; average monthly compensation of Male Teachers in Primary Schools, \$37.00; average monthly compensation of Female Teachers in Primary Schools, \$28.40; average monthly compensation of Male Teachers in High Schools, \$64.60; average monthly compensation of Female Teachers in High Schools, \$42.00; average cost of Tuition per pupil, per month, in both grades, \$1.20; amount expended for tuition, \$1,474,832.49; number of School Houses built within the year, 424; total value of School Property, \$5,228,501.00; number of Frame School Houses in the State, 6,906; number of Log School Houses in the State, 831; total number of School Houses, 8,403; amount of Special School Revenue expended within the year, \$1,050,139.03; number of volumes of Township Library, 282,802; number of volumes taken out of Township Library for use during the year, 140,279; amount paid Trustees for managing educational matters, \$43,598.39.

By an expenditure of \$1,474,000, the schools throughout the State have been kept in operation for an average of eighty-seven days,—or a little less than four and half months.

OHIO, 1868.

The leading facts and transactions in the administration of the school system of this State in the past year may be summed up as follows:

At the beginning of the School year (September 1st, 1867) there were in the State 1,019,292 youth legally entitled to admission to the Public Schools; 672,053 of whom were residents of the sub-districts, and the remaining number, 347,139, were residents of the separate districts (cities, towns and villages).

At the same date, there were in the State 11,353 school-houses, the value of which, together with the grounds and out-buildings, as estimated by local school authorities, was 9,072,443 dollars.

It appears that in the sub-districts there was one school-house to every sixty-three resident youth of School-age. For the schooling of the 1,019,192 youths to be provided for, 11,784 schools, located within easy reach of the homes of the pupils, affording accommodations for all, and requiring constantly 14,070 teachers, were opened and sustained, on an average, 27.81 weeks, or 139 days. The number of persons actually employed in the schools in the capacity of teachers

was 21,592. The number of youths whose names were entered on the school registers was 731,772, the average daily attendance being 410,721. From these facts it appears that of the School opportunities offered, considerably less than one-half was accepted, the average attendance to each youth of legal School age being only eleven weeks and two days, or fifty-seven days.

To provide School revenues, in addition to those arising from the "irreducible School Funds of the State," the maximum rates of levy authorised by law were as follows: "on each dollar of taxable property in the State, as valued and entered on the grand list," for the year, one mill and three-tenths; on the dollar valuation of the property of each township, five mills; and on the dollar valuation of the property of each separate district, seven mills. The rates of levy actually assessed for School and School-House purposes were as follows: by the State authorities on the grand list, one mill and three-tenths; by the local authorities, in townships, three mills and twenty-eight hundredths, and in the separate districts, six mills and fifty-seven hundredths. The total receipts from these sources, including the balances from the year preceding, amounted to 7,395,231 dollars. Of this amount, 4,060,880 dollars were expended in payment of teachers' wages, and in defraying the contingent expenses of the schools, and 1,644,176 dollars in the purchase of School-House sites, the erection of new buildings and the repair of old ones, leaving a net balance in the treasuries, at the beginning of the current year, of 1,690,175 dollars.

Exclusive of State Officials, the whole number of School Officers required by law in the general administration and local management of the Schools, was 38,905.

The appropriations for the purchase of sites and the erection of new School-buildings have been liberal beyond precedent, and the work of providing substantial and commodious buildings have been prosecuted with unexampled vigor and intelligence. The whole number of School-houses erected or completed within the year, was 635. Of the number (574) erected in the sub-districts, 427 are framed and 147 are brick buildings. The average cost of these buildings was \$931, the aggregate cost being \$534,577. The remaining number, sixty-one, were erected in the separate districts at an average cost of \$10,556, the aggregate cost being \$643,934. Of these, nine are framed and fifty-two brick buildings. They are almost without exception, large, substantially built and pleasantly located, many of them being models of architectural beauty, well lighted, and provided with the most approved methods of heating and ventilation. One noticeable and most commendable feature in providing new school-buildings in the separate districts is, the increased attention given to the selection of suitable sites. As a rule, the new buildings are not located near the business centres of the towns and villages, but may be found in the most healthy, sightly and quiet localities within the limits of the districts. The school-grounds adjacent to these buildings rarely, except in the cities, consist of less than one and one-half acres of land, often consist of from three to five, and in some instances of from five to eight acres. Increased attention is also given to the embellishment of these grounds, with a view, of course, to the cultivation of taste, and the promotion of good order, habits of cleanliness, and social refinement among the pupils.

Books and Current Exchanges Received.

From Dawson Bros., Montreal: *The Old Testament History*, from the Creation to the Return of the Jews from Captivity, with maps and woodcuts: Edited by William Smith, LL. D., Classical Examiner in the University of London.

POPE'S PORTICAL WORKS, with a Biographical Notice: Edited by the Revd. H. F. Cary, M. A.

COMPLETE PORTICAL WORKS OF H. K. White, with a Life of the Author.

A COMPENDIUM OF MENTAL ARITHMETIC, for the use of Schools, by F. E. Juneau, Esq., Inspector of Schools.

ANNUAL REPORT of the Board of Education of the State of Connecticut together with the Annual Report of the Secretary of the Board for the year ending August 31, 1868.

FIFTIETH ANNUAL REPORT of the State Commissioner of Common Schools of the State of Ohio for the School year ending August 31, 1868.

THIRTY-SECOND ANNUAL REPORT of the Superintendent of Public Instruction for the State of Michigan for the year 1868.

AN ACT AND ACTS Amendatory thereto to Establish and Maintain a System of Free Common Schools for the State of Arkansas.

ANNUAL REPORT of the Jersey State Board of Education with the Report of the State Superintendent of Public Instruction for the School year ending August 31, 1868.

TWENTY-SIXTH ANNUAL REPORT of the Public Schools of the City of Rochester.

ANNUAL REPORT of the Common, Superior, Academic, and Normal and Model Schools in Nova Scotia for the school year ended October 31st 1868,—by the Superintendent of Education.

REPORT upon the Inspection of Protestant Schools in Newfoundland for 1859, 1864, and 1867; For which we are indebted to John Haddon, Esq., Protestant Inspector of Schools, N. F. (1)

Journal of Education, (St. Louis) for June.

Ohio Educational Monthly, a Western School Journal, (July.)

The Maine Journal of Education for June.

The California Teacher for June.

The Pennsylvania School Journal for June.

The Minnesota Teacher and Journal of Education for May and June.

The Young Crusader for June. — Just the thing for youth.

The Printer, a Monthly Newspaper devoted to the interests of the "Art Preservative of all Arts," No. 1 for April; published by John Greason, 75, Gold Street, N. Y. Price \$2.00 per annum in advance.

The Manufacturer and Builder for June.

Educational Gazette for May and June. Both good.

LEISURE HOURS, a monthly Magazine, devoted to History, Biography, Prose, Poetry, Wit, Romance, Reality, and Useful Information, for June. This is an excellent number.

ADVERTISERS GAZETTE, (June) Journal Devoted to the Interests of Advertisers and Newspaper Publishers;—Issued monthly at 40 Park Row, New-York.

PETER'S MUSICAL MONTHLY, for June, contains I'm still a friend to you; Carrie Vaughan; Darling Linnie Dorn; "Those Dark Eyes;" Pet Schottisch; Rêve Angélique—Valse Brillante; Golden Chimes; Hattie Bell; My Southern Sunny Home; Ellanore, besides a great deal of most agreeable reading.

American Educational Monthly; Devoted to Popular Instruction and Literature, for July; published by J. W. Schermerhorn & Co., 14, Bond St., New-York, \$1 50 per annum. This Journal is one of our great favorites,—not only for the vigour with which its articles are written but for their freshness of treatment.

The Illinois Teacher; Devoted to Education, Science, and Free Schools, for June.

The Cincinnati Medical Repertory, edited by J. A. Thacker, M. D., one dollar a year in advance. (2)

The National Normal for June.

The Nursery, (July) a Monthly Magazine for Youngest Readers,—beautifully illustrated, and only \$1.50 a year.

The Mount Auburn Index, for June.

The National Normal, (June). An Educational Monthly, edited and published by R. H. Holbrook, 176, Elm St., Cincinnati, O. The articles are varied and good.

The Indiana Teacher, (June). A Monthly Journal, devoted to the interests of Common Schools. \$1.50 per annum.

Dayton Weekly Ledger, Dayton, O. June 10th, 1869.

Journal of Education, Province of Ontario, for April and May.

The Albion, a Weekly Journal of Literature, Art, Politics, Finance, and News;—Kinahan Cornwallis, Editor and Proprietor, No. 39, Park Row, N. Y. Subscription for one year, with any two of the large-sized Albion steel engravings, in addition to a small one of the Prince of Wales, free and prepaid by mail, six dollars in advance.

Hearth and Home, for the Farm, Garden, and Fireside, July 3rd, 1869, is received and well sustains its established character as a family paper.

The Weekly Spirit of the Times, and Northampton Educator is to hand for May 1st. We have only received in all about four Nos. of this Journal.

Southern Illinois Teacher for May. Glad to see the face of our old friend, who Phoenix like has arisen from its ashes

Packard's Monthly for June and July.

(1) We have to thank Mr. Haddon not only for his Reports, but for his very kind note. We are pleased to earn the favorable opinions of such men as Mr. Haddon.

(2) We never received Nos. 1, 4 and 5 of this valuable exchange.

MONTHLY SUMMARY.

EDUCATIONAL INTELLIGENCE.

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

—*Expenses at Cambridge University*.—All students dine in hall, a certain number of dinners there per week being compulsory. The charge for this varies in the different colleges from 1s. 6d. to 2s. 6d. per day. This comprises a certain dinner, and anything had which is not comprised in the college provision is supplied from the kitchen and charged for separately. As regards breakfast and tea, the student may supply himself, if he pleases, from shops in the town; but more usually bread, butter, and milk are dealt out from the college butteries every morning to the various gyps for their respective masters. Other things will be kept in stock by the student himself. To sum up briefly the annual expense while at Cambridge, and taking rather a low estimate, we may compute them as follows:—For a pensioner—Tuition, £18; rooms, £8; attendance, gyp and wife, £4. 10s.; coals, about £3; cost of living for 25 weeks, at 25s. per week, £31. 5s.; sundries, about £5: shoe-cleaning, £1. 1s; extras, £3; total, £73. 16s. Under the heading "extras" are included all fines, library payments, &c. A sizar's expenditure will be diminished by £12 in the tuition, by £1. 10s. in the gyp, and possibly by £3 in the rooms, making the total about £57. 6s. This, again, is a very low estimate, and does not include private tuition, clothing, pocket-money, the cook's bill, or any expenses except those which are absolutely necessary during a residence of twenty-five weeks at the University. Taking every thing into consideration, except the expenses of living while away from Cambridge, we should say the lowest amount upon which a man can live with any thing like comfort is £140 for a pensioner, and £120 for a sizar. A syndicate of the University have just presented a report on a scheme for enabling students to be members of the University and obtain a degree without being members of a college. This will probably materially diminish the expenses of residence.—*Cassell's New Popular Educator*.

—*Proposed Examination of Schoolmasters*.—The Syndicate of the Senate appointed by the University of Cambridge, December 10, 1868, to consider a memorial from the Scholastic Registration Association on the subject of instituting an Examination for Schoolmasters, reported on April 14th, that in accordance with the terms of the reference, they had directed their attentions to two points (1), whether the University can undertake to test the acquirements and intellectual ability of Schoolmasters; (2), whether it can provide the means of testing their professional ability and power of teaching. With regard to the first point the Syndicate are of opinion that it is not desirable to institute any new examination, as such an examination must embrace a wide range of subjects, in order to meet the requirements of different Schoolmasters. They are further of opinion that the Local Examinations, though embracing to a certain extent such a range, are not suited to the object of the memorialists. But they consider that Schoolmasters may be admitted, under certain conditions, to many of the examinations at present held within the University, with much benefit to the Scholastic profession, and to the public at large.

The Vice-Chancellor convened a meeting of Members of the Senate to consider this subject on the 16th, when it came on for discussion accordingly. No opposition was offered to the scheme.

—*Cambridge Examination for Schoolmasters*.—It was with sincere pleasure that we read the announcement that the University of Cambridge resolved to admit Schoolmasters of a certain standing to the regular University Examinations, without requiring them to be resident. We are sure that the Syndicate, i.e. Committee of the Senate, appointed to consider the petition of the Scholastic Registration Society, to whom the credit is due of having originated the proposal, did not recommend the measure without having given it most anxious attention; but their recommendation of it was so decisive that the Senate adopted their opinion almost without discussion. This is fresh evidence of the large liberal spirit for which Cambridge has so long been conspicuous, which leads her, while not omitting her primary duty of directing the highest education of the country, to sympathise with every judicious effort to improve the education given in the schools of England. Conjointly with Oxford she now, as every body is aware, administers the Local Examinations. It may not be so well known that in 1862 a grace was also passed by the Senate authorising the Syndicate already charged with the admini-

— From the Records of the Montreal Observatory, Lat. 45° 31' North; Long. 4h. 54m. 11sec. West of Greenwich, and 182 feet above mean sea level for May, 1869.—By Charles Smallwood, M.D., LL.D., D.C.L.

DAY.	Barometer corrected at 32°			Temperature of the Air.			Direction of Wind.			Miles in 24 hours.
	7 a.m.	2 p.m.	9 p.m.	7 a.m.	2 p.m.	9 p.m.	7 a.m.	2 p.m.	9 p.m.	
1	29.574	29.557	29.451	33.4	54.6	42.1	W	SW	SW	89.74
2	.225	.149	.050	41.2	39.7	33.0	N	E	E	97.70
3	28.875	28.842	.043	33.1	40.2	37.7	N	N	N	88.24
4	29.151	29.301	.325	38.0	42.1	40.2	W	NE	NE	69.74
5	.451	.518	.649	40.0	56.2	41.7	N	NE	NE	99.84
6	.700	.627	.541	36.1	66.2	53.0	NE	NE	NE	101.10
7	.626	.637	.650	50.1	73.7	54.2	NE	NE	W	91.11
8	.626	.600	.551	47.8	76.4	56.2	NE	W	W	86.74
9	.500	.459	.499	52.8	61.1	53.9	NE	NE	NE	104.10
10	.531	.517	.462	47.3	76.2	56.7	NE	W	W	97.97
11	.349	.347	.350	52.0	78.9	54.7	WSW	WSW	WSW	67.24
12	.449	.479	.501	50.2	52.7	46.2	NE	NE	NE	211.04
13	.422	.414	.310	44.9	54.1	43.3	NE	NE	NE	191.10
14	.112	.109	.111	47.0	56.0	47.0	NE	NE	NE	211.21
15	.111	.174	.200	46.0	49.2	44.9	NE	NE	NE	247.16
16	.151	.109	.041	46.9	52.6	47.0	NE	NE	NE	279.94
17	.050	.197	.208	47.2	49.2	47.9	NE	NN	NE	141.10
18	.361	.362	.450	46.9	48.4	48.0	W	W	W	97.90
19	.450	.411	.362	50.0	52.6	53.0	W	W	W	101.10
20	.411	.442	.511	54.1	56.1	49.9	NE	W	W	98.12
21	.550	.537	.500	44.2	55.0	48.7	W	NE	NE	71.12
22	.451	.449	.449	46.3	58.4	52.2	NE	NE	NE	81.10
23	.401	.462	.449	52.1	71.2	59.6	W	W	W	107.24
24	.502	.501	.449	53.9	78.4	66.2	WSW	WSW	WSW	117.19
25	.498	.462	.420	59.7	78.0	67.9	W	W	W	204.12
26	.525	.447	.650	57.0	44.1	42.0	NE	NE	W	119.10
27	.702	.722	.747	38.2	58.6	54.7	N	N	NE	199.74
28	.812	.657	.611	47.3	70.1	52.8	NE	SW	SW	101.00
29	.601	.619	.675	54.4	73.5	58.0	SW	S	W	88.24
30	.701	.602	.560	57.9	78.6	63.3	W	W	W	91.11
31	.551	.459	.478	63.1	72.2	65.8	W	WSW	WSW	88.24

REMARKS.

The highest reading of the Barometer was on the 27th day, and was 29.747 inches; and the lowest reading was on the 3rd day, and indicated 28.842 inches, giving a monthly range of 0.905 inches. The highest reading of the Thermometer was on the 30th day, and was 78° 6; the lowest reading was on the 1st day, and was 32° 9, showing a monthly range of 45° 7. The mean temperature of the month was 52° 96, which is a trifle lower than the Isotherm of the month of May, for Montreal, reduced from observation during a long series of years. Rain fell on 13 days, amounting to 2.855 inches. Snow fell on 2 days, amounting to 3.14 inches; making a total amount of 170.53 inches for the winter 1868-9.

ADVERTISEMENT.

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The Journal of Education,—published under the direction of the Hon. the Minister of Public Instruction and edited by H. H. MILES Esq., LL.D., D.C.L. and P. DELANEY Esq., of that Department,—offers an advantageous medium for advertising on matters appertaining exclusively to Education or the Arts and Sciences.

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Public School Teachers advertising for situations, free. School-Boards &c., free.

All communications relating to the Journal to be addressed to the Editors.

tration of the Local Examination Scheme 'to entertain applications for the appointment of one or more persons that should examine the scholars of the school that makes the application,' in other words authorising them to send down an Examiner, to examine and report upon any school which shall desire to have the efficacy of its general work thus tested. Now it offers to give credentials of ability, which all must recognise as conferring a real claim to public confidence, to any Schoolmaster who upon examination reaches that standard of attainment which the University now recognises as conferring on residents the title to a Degree. We are sure that many, who having been educated in our Training Colleges, have since qualified themselves by self-denying labour, for taking posts in higher schools, will most gladly take advantage of this offer. Hitherto they must have often felt that their claims in their new position on the confidence of their chief, their colleagues, and the parents, in some respects lacked support. Their Certificates might stand for much, but it did not guarantee knowledge of all the subjects, it might be, which they were called upon to teach. Dublin University has long been ready to grant degrees to non-residents, but Dublin is a long way off, and there are comparatively few Graduates of Dublin holding assistant masterships in English schools. Now to have passed the Cambridge Degree Examination is to take rank in point of attainments at the least, with the University men working in the same school. We suppose that most of our readers are to some extent aware of these Examinations, which are now open to them. We can assure them that but for the Latin and Greek, which after all will not take them into such very deep water, the ordinary A.B. examination may be successfully passed on a year's reading (very possibly on less) by any man who at the end of his second year at a Training College has been placed in the first class. The 'Honour' examination is of course another matter altogether. But here there is a fine field open to any man of ability who has worked hard at any favourite subject. The mysteries of the 'Classical Tripos,' the 'Mathematical Tripos,' the 'Natural Science Tripos,' the 'Moral Science Tripos' must be learnt from the 'Cambridge Calendar,' if possible, illuminated by the comments of some friend who has lately left Cambridge. We promise to give our readers some assistance in this matter on a future occasion. At present we will do no more than recommend all certificated teachers, who are present or paulo-post-future masters in classical schools, to present themselves for examination at Cambridge at the earliest opportunity, convinced as we are that it will give them stability and gain them respect in those positions, and impressed as we are profoundly with the belief that, whether it stands alone, or is merged shortly in some larger scheme of Scholastic Registration to be initiated by Mr. Forster's Bill, this recognition by the University of scholastic attainments, as such, is a measure which will tend most powerfully to the advantage of our secondary schools, to the improvement of the schoolmaster's social position, and to the ultimate confusion of charlatany.—Papers for the Schoolmaster.

METEOROLOGICAL INTELLIGENCE.

— Meteorological observations taken at Quebec during the month of May, 1869—Lat. 46°48'30" North; Longitude 71°12'15" West; height above St. Lawrence, 230 feet, by Sergt. John Thurling. (1)

Barometer, highest reading on the 28th.....	29.945 inches.
" lowest " 3rd.....	29.017
" range of pressure.....	0.928
" mean for month reduced to 32°.....	29.530
Thermometer, highest reading on the 25th.....	81.2 degrees.
" lowest " 1st.....	27.0
" range in month.....	54.2
" for month.....	50.1
" mean of maximum in sun's-rays, black bulb..	94.1
" mean of minimum on grass.....	39.1
Hygrometer, mean of dry bulb.....	52.7
" wet bulb.....	46.9
" dew point.....	40.5
Elastic force of vapour.....	.252 inches.
Vapour in a cubic foot of air.....	2.8 grains.
" required to saturate, do.....	1.6 "
Mean degree of humidity (Sat. 100).....	63
Average weight of a cubic foot of air.....	534.6 grains.
Cloud, mean amount of (0-10).....	6.8
Ozone " (0-10).....	1.0
Wind, general direction.....	E. and S. E.
Mean daily horizontal movement.....	128.7 miles.
Rain, number of days it fell.....	13
amount collected on ground.....	2.74 inches.

(1) Correction of error in May number :—

- Barometer — read lowest on 21 instead of 31.
- Hygrometer— read mean of dry bulb 39.2 instead 35.8.
- " read mean of wet bulb 35.8 instead of 39.2.