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# The Canada School Journal.

Vol. III.

TORONTO, AUGUST, 1878.

No. 15.

REV. HENRY WILLIAM DAVIES, M.A., D.D.

When the late Thomas Jaffray Robertson, M.A., the first principal of the Toronto Normal School died, it was felt that it would be exceedingly difficult to secure a successor, who would be able to fill his place as a teacher of English. Mr. Robertson's acknowledged ability and extended experience made it necessary that the Council of Public Instruction should exercise great care and discrimination in the selection of the gentleman who would follow him. It was desirable that he should be taken from the ranks of Ontario teachers, that he should be eminent as a teacher in the special department named, and that he should have practical experience in the successful management of some large educational institution. The Council naturally looked towards the High School Masters as the most likely men from whom one could be selected who would give satisfaction. The "Special Reports" of the High School Inspectors, Rev. Mr. Checkley and Professor Young, contained full and reliable information in regard to the past success of the High School Masters throughout the Province, and a careful study of these documents led the Council to appoint Dr. Davies, then Principal of Cornwall High School, to the vacant position. A few brief selections from the reports referred to, will show how clearly they pointed to Dr. Davies as the gentleman whose talents and experience fitted him best for the work of the Normal School.

"I consider Mr. Davies to be in every respect an excellent teacher. He is, I believe, himself thoroughly competent, and has the proper combination of quietness and energy of manner. His discipline appears to be perfect, and as I learned subsequently, he is much liked and respected by all parties."

"The plan which Dr. Davies pursues in teaching would give rise to great thoughtfulness and expansion of mind."

"The discipline of the school is all that could be desired. The class arrangements are judicious. Mr. Davies is a good scholar; and his teaching is vigorous and efficient. The English Grammar was exceedingly good."

"His authority is perfectly established, and he teaches in an intelligent and vigorous manner."

Rev. Dr. Davies was born in 1834 in the city of Cleveland, Ohio. His parents removed to Ontario in 1840, so that he was educated

in this Province. He received his preparatory training in the Cornwall High School, the same institution in which he afterwards earned such well-merited distinction as a teacher. He graduated with honours in Trinity University, Toronto, receiving the degree of M.A., in 1857 and D.D. in 1870. He was appointed Curate of the Episcopal Church in Cobourg in 1856, but was soon after transferred to the Curacy of Cornwall, where he was appointed principal of the High School. When he received the position of English Master in the Toronto Normal School in 1866, he became Assistant in Holy Trinity Church. This position he still continues to fill.

Soon after taking his position in the Normal School, he was requested by the Council of Public Instruction to write two works on English Grammar, suitable for use in the Public and High Schools of Ontario. He complied with the request and issued two very carefully prepared volumes on the subject; the English Grammar for Junior Classes, and the Analytical and Practical Grammar. These books are still extensively used in Public and High Schools. He has since published an English Literature Primer, designed mainly for the use of candidates for Third Class Certificates. It is a very valuable little work, admirably adapted to fill the place for which it was prepared. He also prepared a series of very useful Blank Forms for use in schools in Analyzing and Parsing.

On the resignation of Dr. Sangster in 1871, Dr. Davies was promoted to his present position as Principal of the Normal School. Since that time he has laboured earnestly and successfully in connection with his associate Masters, to maintain and extend the

high reputation of the institution over which he presides. He is ever ready to make personal sacrifices for the benefit of his students, and it may be truly said of him, that the more fully he is known the better he is liked by them. He takes a deep interest in the general welfare of both the Normal and Model School students under his charge. He encourages athletic exercises and field sports, and has secured the establishment of a fine professional and general library for the use of the teachers and students at the Normal School.

Since he was appointed Principal of the School it has undergone a radical change in its organization. Under the new Departmental Regulations the Normal Schools are required to perform more fully their proper function of teacher-training. The only candidates who now receive instruction in them in regard to the subjects of their non-professional course are those of the First Class. The new arrangement is giving much satisfaction,



(From a Photograph by Hunter & Co., Toronto.)

## Cleanings.

### HINTS ABOUT LETTER-WRITING.

READ THIS TO YOUR SCHOOL.

Our letter-writing is very much a matter of habit, and for that reason it is important that young people should learn early to consider it a pleasant way of communicating thoughts and feelings to their friends, instead of a burdensome task to be got over as quickly as possible.

We often hear people excuse themselves by saying that they have no "gift for writing letters," as though it were something like an ear for music, only accorded to a favored few. But the truth is that any one can write interesting and pleasant letters who will take a little trouble and really persevere in the effort. The grand difficulty in the way is that they are too selfish and too indolent to try. Nothing that is worth anything comes without effort, and if you do not care enough about gratifying your friends to take a little pains for it, you deserve never to receive any letters yourselves.

A few simple rules, carefully observed, will help you over some of the things which you call difficulties. In the first place, *always write distinctly!* It destroys much of the pleasure in receiving a letter if it cannot be read without puzzling over every word. Many an epistle, written on heavy cream-laid paper, with a monogram at the top, is only an annoyance to the one to whom it is addressed, on account of pale ink and careless hand writing.

Be particular in the matter of dating, giving every item distinctly, and sign the letter with your full name. If this habit is formed, you will not run the risk of losing valuable letters, which cannot be forwarded from the Dead-Letter Office unless accompanied with the full address.

You will find it more easy to reply to a letter soon after you get it than if you neglect it for a few weeks, because you will have the impressions which the first reading made upon your mind. Tell your friend when you receive the letter which you are answering, and take up the topics in the order in which they naturally come, remembering to answer all the questions which have been asked. Try to think what your friend would like best to hear about, and when you undertake to tell anything, do not leave it half told, but finish the story. People who are not careful about this, often give a false impression without meaning to do so. For instance, one of these careless writers, in giving an account of a fire, simply stated that the house was burned, without giving any qualifications, thus giving the impression that it was entirely consumed, thereby causing a whole family much unnecessary trouble and anxiety, as the actual burning in question was very slight.

Do not consider anything too trivial to write about which you would think worth mentioning in conversation. Writing letters is simply talking upon paper, and your friends will be much more entertained by the narration of little every-day affairs, than by profound observations upon topics which you care nothing about.

In writing to very intimate friends, who will be interested in the details of your daily life, it is well sometimes to make your letters a sort of diary—telling something of how you have spent each day since you wrote last, what books you have been reading, what letters you have received from mutual friends, and what you have heard or seen which has interested you.

Write all that you have to say on one subject at once. That is, do not begin to tell about your garden and then about your school, and then about your garden again; but finish one subject before you begin another. Do not be afraid of using the pronoun *I*. Some people avoid it and thus give their sentences a shabby and unfinished sound, as "Went to Boston—called on Mrs. Smith." Never apologise for what you write, by saying that you do not like to write letters. You would not think it quite polite in visiting a friend, to say, "I do not like to talk to you, so I shall not say much." Keep the idea before you that you are writing for the sake of giving pleasure to your friend.

When your letter is merely an enquiry, or on a matter of business, the case is different. You then should try to be as brief, concise, and clear as possible. An elaborately drawn out business letter is as out of place as it is inconsiderate.

"Do not think what to write, write what you think," is an old rule, and a good one to remember. If you are away from home, it is very selfish not to share your good times with the family by writing frequent letters. You can tell what you are enjoying so

much better while it is fresh in your mind, than you can after your return, when you may not have leisure to go over the whole ground; and these home letters may be a means afterwards of refreshing your own memory, and reminding you of incidents which you would otherwise have forgotten. There are many other things which might be said here, but this will do for the present. A very good rule for letter writing is the golden one, "Do as you would be done by."—*Susan A. Brown in St. Nicholas.*

### SCHOOL COMMITTEE-MEN "COMMITTED."

BY M. P. COLBURN, IN NEW ENGLAND JOURNAL.

In order to show that the interests of education are not always served at the polls, I send you the accompanying "string of pearls," which have dropped from time to time from the mouths of various school committee-men within the range of my experience:

I.—One of the *grms* entered a school-room in one of our suburban towns, and, as he found the geography-class up for recitation, took occasion to expatiate upon the benefits accruing from the study of this branch in this wise:

"Yes, children, it does you good to know things. You don't want to be dolts all your life; but when you see things, you want to *know* 'em; when you see Alps, you'll know them's *mountains*; when you see Appenines, you'll know them's *mountains*, and when you see *Dardanelles*, you'll know *THEM'S* mountains!"

II.—To show what qualifications in a teacher seem to be necessary and sufficient in the opinion of some of the "powers that be" in some sections, I am able to vouch for this:

A gentleman, having a friend for whom he wished to obtain a school, called upon the man filling the office of committee, and stated his wish.

"Is she handsome?" quoth Mr. H—. "Yes, sir: she is called very handsome." "Well, then," said the high-minded dignitary, "*she shall have a school!*"

Alas, in this state of things, for the plain aspirants to pedagogic honors!

III.—About thirty miles "up north" is a *destrict* where the prudential committee is a man who was put in the position "just for fun," by his townsmen.

Joke as it was at first, it got to be dreadfully practical when the grave "know-nothing" grew to the habit of visiting his charge regularly once a week, and always making a speech, of which the following is a true transcript:

"Scholars, you must love your school, you must love your books, you must love your teacher,—*I do!*"

IV.—A very important personage was one who confided to me the trials of his public life. Said he:

"I have to work too hard. It is enough for me to have to 'tend to my milk bizness without doing so much else." "What else," I said, interestedly. "O, I am s'lect man, school committee man, and member of the House!" "Which shall you give up, do you think?" "Well, I've been thinkin' I'd better give up on the school committee!" and I thought so, too!—but I only said. "Do you find your duties onerous?" and his reply was worthy a Timon of Athens. "Yes, *I do*, but the honor is all a curse!"

V.—In discussing the question of music in the public schools, one remarked blandly to me that he "should as soon think of sending a boy to dancing-school as his children to learn to sing in one of 'em!"

VI.—Another stood with his hat on his head and his two hands plunged to the depth of his pockets, while listening to the repeating of the beautiful 23rd Psalm by the children: and when they were through with it, remarked, with a pleased air, "*They spoke that piece pretty well!*"

VII.—At one time, during a long visit, the committee-man only removed his hat to show me, with a pat on his bald head, what he was pleased to call the "*result of cramming.*" He didn't believe in it,—*he had suffered so himself!*

VIII.—But better than all is the following anecdote, which is true to the minutest particular:

One of our grammar-school principals was in the habit of conducting his class in geography in what was then rather a novel way. He would suppose some compounded article of food,—as a loaf of bread or cake, a mince pie, etc.,—and have the pupils "go on a voyage for the ingredients, telling where each came from, and the

route for it, over what mountains, rivers, lakes, seas or oceans, as well as the countries traversed,—a very valuable and interesting method, by the way, as it makes it a real thing, and is not all "book-learning."

Dr. H. happened in one day, during such an exercise, and being much pleased with it, asked Mr. S. to "send 'em for a plum pudd'n!" Accordingly they started off on their travels for the flour, sugar, salt, raisins, spices, milk, etc., till they stopped, as they thought, at the end. "Go on," said our committee-man. "I can't think of anything more," said one; "Nor I," said another, till all had spoken. "Why!" said he, looking triumphantly at the master, "where's your sass?"

## THE TELEPHONE, AND HOW TO MAKE IT.

What is a telephone?

Up go a hundred hands of the brightest and sharpest of the readers of *St. Nicholas*, and a hundred confident voices reply.

"An instrument to convey sounds by means of electricity."

Good. That shows you have some definite idea of it; but, after all, that answer is not the right one. The telephone does not convey sound.

"What does its name mean, then?" do you ask.

Simply, that it is a far-sounder; but that does not necessarily imply that it carries sounds afar. Strictly speaking, the telephone only changes sound-waves into waves of electricity and back again. When two telephones are connected by means of a wire, they act in this way,—the first telephone changes the sound-waves it receives into electric impulses, which travel along the wire until they reach the second telephone, here they are changed back to sound-waves exactly like those received by the first telephone. Accordingly, the listener in New York seems to hear the very tones of his friend who is speaking at the other end of the line, say in Boston.

Still you don't see how.

It is not surprising, for in this description several scientific facts and principles are involved, and all boys and girls cannot be expected to know much about the laws of sound and electricity. Perhaps a little explanation may make it clearer.

The most of you probably know that sound is produced by rapid motion. Put your finger on a piano wire that is sounding, and you will feel the motion, or touch your front tooth with a tuning fork that is singing, in the last case you will feel very distinctly the raps made by the vibrating fork. Now, a sounding body will not only jar another body which touches it, but it will also give its motion to the air that touches it, and when the air-motions or air-waves strike the sensitive drums of our ears, these vibrate, and we hear the sound.

You all have heard the windows rattle when it thunders loudly, or when cannons have been fired near by. The sound-waves in the air fairly shake the windows; and sometimes, when the windows are closed so that the air-waves cannot pass readily, the windows are shattered by the shock. Faint sounds act less violently, yet similarly. Every time you speak, your voice sets everything around you vibrating in unison, though ever so faintly.

Thus, from your every-day experience you have proof of two important facts, first, sound is caused by rapid motion; second, sound waves give rise to corresponding motion. Both these facts are involved in the speaking telephone, which performs a two-fold office,—that of the ear on the one hand, that of our vocal organs on the other.

To serve as an ear the telephone must be able to take up quickly and nicely the sound waves of the air. A tightened drum-head will do that; or better, a strip of gold-beater's-skin drawn tightly over a ring or the end of a tube. But these would not help Professor Bell, the inventor of the telephone, since he wanted an ear that would translate the waves of sound into waves of electricity, which would travel farther and faster than sound-waves could.

Just when Mr. Bell was thinking how he could make the instrument he wanted, an important discovery in magnetism was made known to him—a discovery that helped him wonderfully. You know that if you hold a piece of iron close to a magnet the magnet will pull it, and the closer the iron comes to the magnet the harder it is pulled. Now, some one experimenting with a magnet having a coil of silk covered wire around it, found that when a piece of iron was moved in front of the magnet and close to it without touching, the motion would give rise to electric waves in the coil

of wire, which waves could be transmitted to considerable distances.

This was just what Mr. Bell wanted. He said to himself, "The sound of my voice will give motion to a thin plate of iron as well as to a sheet of gold-beater's-skin; and if I bring this vibrating plate of iron close to a magnet, the motion will set up in it waves of electricity answering exactly to the sound-waves which move the plate."

So far, good. But something more was wanted. The instrument must not only translate sound-waves into electric impulses, but change these back again into sound-waves; it must not only hear, but also speak!

You remember our first fact in regard to sound: it is caused by motion. All that is needed to make anything speak is to cause it to move so as to give rise to just such air-waves as the voice makes. Mr. Bell's idea was to make the iron plate of his sound-receiver speak.

He reasoned in this way. From the nature of the magnet it follows that when waves of electricity are passed through the wire coil around the magnet, the strength of the magnet must vary with the force of the electric impulses. Its pull on the plate of iron near it must vary in the same manner. The varying pull on the plate must make it move, and this movement must set the air against the plate in motion in sound-waves corresponding exactly with the motion setting up the electric waves in the first place; in other words, the sound-motion in one telephone must be exactly reproduced as sound-waves in a similar instrument joined to it by wire.

So much for description. You will understand it better, perhaps, if you experiment a little. You can easily make a pair for yourself, rude and imperfect, it is true, but good enough for all the tests you may want to apply.

For each you will want: (1) a straight magnet; (2) a coil of silk-covered copper wire; (3) a thin plate of soft iron; (4) a box to hold the first three articles. You will also want as much wire as you can afford, to connect the instruments, and two short pieces of wire to connect your telephones with the ground. (Two wires between the instruments would make the ground-wire unnecessary, but this would use up too much wire.) The magnet and the coil you will have to buy from some dealer in electrical apparatus. They need not cost much. A small cigar-box will answer for a case.

In one end of the box cut a round hole, say three inches across. Against this hole fasten a disk of thin sheet-iron for a "diaphragm." For a mouthpiece use a small can, such as ground spices come in, or even a round paper box.

Now, on the inside of the box place the magnet, the end carrying the coil almost touching the middle of the diaphragm, and fix it firmly. Then, to the ends of the copper wire of the main coil fasten two wires—one for the line, the other for the "ground-wire."

The receiving and sending instruments are precisely alike; each answers for both purposes; but there must be two, since one must always be hearing while the other is speaking.

When you speak into the mouthpiece of one telephone, the sound of your voice causes the "diaphragm" to vibrate in front of the magnet. The vibrations cause the magnet's pull upon the diaphragm to vary in force, which variation is answered by electrical waves in the coil and over the wires connected with it. At the other end of the wire the pull of the magnet of the speaking telephone is varied exactly in proportion to the strength of the electric impulses that come over the wire, the varying pull of the magnet sets the diaphragm in motion, and that sets the air in motion in waves precisely like those of the distant voice. When these waves strike the listener's ear, he seems to hear the speaker's exact tones, and so, substantially, he does hear them. The circumstance that electric waves, and not sound-waves, travel over the wires, does not change the quality of the resulting sound in the least. I think you now understand Bell's telephone.—*From St. Nicholas.*

ENTHUSIASM vs. NOISE.—Some teachers object to a quiet manner in the school room, because, so they say, it indicates a "lack of enthusiasm." Herein lies a great mistake. There is no necessary connection between enthusiasm and noise; between a quiet determination to have order, and phlegmatic indifference to inattention and mischief.—*Pacific School and Home Journal.*

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## The Canada School Journal.

*Recommended by the Minister of Education for Ontario.*

*Recommended by the Council of Public Instruction in Quebec.*

*Recommended by the Chief Supt. of Education for New Brunswick.*

*Recommended by the Chief Supt. of Education, British Columbia.*

TORONTO, AUGUST, 1878.

### THE RELATION BETWEEN THE UNIVERSITY AND THE HIGH SCHOOL.

The enormous increase which has taken place this year in the number of candidates for junior matriculation in the Provincial University, suggests the propriety of modifying somewhat the relation subsisting at present between that institution and the High Schools. It would be a great mistake to suppose that the only, or even the principal, function of these schools is to prepare pupils for a Collegiate or University course, but that is, nevertheless, a very important part of this work; and in the interest of both the University and the Schools, of the teachers as well as the pupils, it may fairly be questioned whether the time has not arrived for making a very important change.

The University course at present covers four years, the first of which is a mere extension of Junior Matriculation subjects, with the addition of Trigonometry. Moreover, in all essential respects, the work for the First Year, or Senior Matriculation, coincides, or may easily be made to coincide, with that of the Upper School in our High Schools. Now, it is well known that the great majority of the successful candidates at Junior Matriculation afterwards attend lectures in University College, and that they go over just such work during their First Year as they would go over if they went back to school. This, on the face of it, seems to be a most un-called-for waste of teaching power, unless it can be shown that the teaching in University College is of such a character that, for the end in view, cannot be equalled in the High Schools and Collegiate Institutes. But the very reverse of this is the case, as every practical teacher knows. What is wanted at that stage of the candidate's training is drilling, and for drilling there is neither time nor inclination at the College. Many of the candidates come up with a very defective knowledge of Classics, for example, and if allowed to go on with their studies at College these defects will, ten chances to one, remain uneradicated, while if sent back to their schools for a year they would come back vastly improved. The same is

true, to a greater or less extent, of every subject in the curriculum, but particularly so of foreign languages.

Why not drop the first year from the University course altogether and commence with what is now called the Senior Matriculation? What would be the effect of such a change? In the first place, University College would be greatly benefitted by the exemption its teaching staff would obtain from teaching mere rudiments instead of more advanced work. This would enable the Professors to overtake work they find it utterly impossible to attend to under the existing arrangement, and would elevate enormously the character of the College teaching, as a whole, besides affording more leisure and better opportunities for original research. In the next, it would confer a great benefit on the High Schools by throwing on them the work of preparing candidates for a higher examination. Few of our High Schools are able to keep in existence an Upper School worthy of the name. In very few of them are the Natural Sciences taught to a more than nominal extent. Take a school, for instance, that sends up, as several of our High Schools do, an average of at least five matriculants. In the course of time the addition of these pupils would not only greatly increase the numbers in the latter, but would add greatly to the prestige of the school, and enable it to appeal more successfully than it can now do for popular support.

The approaching meeting of the Ontario Teachers' Association, and especially of the High School section of that body, might very profitably, it seems to us, be taken advantage of for the purpose of bringing this question into the prominence it deserves. If the time has not come for action, it is not too soon at all events for discussion, and the sooner the latter is begun the better.

### COUNTY MODEL SCHOOLS.

It is safe to say that no single step in advancement ever made by the Education Department of Ontario gave such universal satisfaction as that taken by Mr. Crooks, when he established the County Model Schools for the professional training of Third Class Teachers. Trustees, parents, and the teachers themselves, are of one mind in regard to the wisdom of the step, in nearly every portion of the Province. The County of Wentworth has earned unenviable notoriety by its action in refusing to make a grant to the Hamilton Model School. Doubtless they were prompted to take this step because Hamilton is a separate Municipality. They should not have forgotten, however, that the County receives the greater portion of the benefit derived from the training of the Third Class Teachers in Hamilton. Hamilton provides the accommodation for teaching its own pupils without expecting any aid from outside. It is behind no other municipality in this respect, but Wentworth should not expect Hamilton to do missionary work by training teachers for the County as well as for itself. One hundred dollars per annum is a small sum for the County to pay for the return received. When the Council decided not to aid in equipping and carrying on the Model

School, Mr. Johnston, Principal of the school, wrote to the Minister of Education in regard to the matter. Mr. Crooks' reply is given in the "Ontario Notes" of this number. It will be read with satisfaction by those interested in the professional training of the lower grades of teachers. It is especially satisfactory to know that Councils are not to have any option in the matter of making grants in aid of their Model Schools. The general policy of the Educational Department is to leave, as far as possible, the arrangement of local school matters to the people of the municipality or section concerned. The training of Third Class Teachers is not merely a local question, however. It is an essential part of our national system. It is true that, so long as the teacher has only the Third Class rank, his being trained or not simply affects the County in which he receives his certificate. But as soon as he gets one step higher his domain becomes the Province. The Province recognizes this fact, and gladly pays its grant to secure the efficient working of the County Model Schools, so that the foundation of the training system may be properly laid. It has, therefore, a right to say to every County, "Do your duty." It is pleasing to know that the intelligence of the people throughout the land is so great, that in nearly every County it was only necessary to call attention to the duty. Where it has been so cheerfully assumed and so readily performed, its enforcement will be no burden.

#### FIRST CLASS TEACHERS' EXAMINATION.

The number of candidates for First Class Certificates at the recent Ontario examinations did not average one for each county. Of those who succeed in obtaining a First Class Certificate for the first time there will probably be, on an average, one for every two counties in the province. Nearly, if not quite, as many First Class Teachers will leave the profession during the year for various reasons. Their number is not therefore likely to increase under present arrangements. It may not be desirable that very large additions should be annually made to their ranks. It would certainly be unfortunate if an increase in their numbers should be secured by lowering the standard to which they must attain before receiving a certificate. There is no doubt, however, that there should be more First Class Teachers than there are at present. It is not possible, while retaining the present high standard of acquirements, to secure a large number of candidates for First Class Certificates. Is it the high standard required that discourages so many from attempting to obtain the highest rank? We think not. The deterring cause is the extent rather than the difficulty of the work to be accomplished. There are too many subjects embraced in the First Class programme for one examination. A teacher who is engaged at his professional work cannot get time to cover so much ground in one year. Even when he tries to do so, and succeeds in passing the examination, he does so by "cramming." This is what the Education Department wish to avoid, but under existing circumstances it is unavoidable. Would it not be better to divide the work at present crowded into one examina-

tion, into three parts—namely, two non-professional and one professional examination? The non-professional work might be grouped under two general heads, Mathematics and English; and the professional work might be extended and taken at least one year after a First Class non-professional standing had been attained. Each teacher would by this arrangement be enabled to study each subject much more thoroughly, and higher percentages might be required for the various grades of certificates than at present. The pure professional work of the teacher's course would be made to occupy a more important position. The time necessarily occupied in obtaining a First Class Certificate would be such as would ensure sufficient practice in teaching on the part of each candidate. The Normal Schools would become more thoroughly training institutions. But the chief benefit to be expected from the change would result from the largely increased number of good Second Class Teachers, who would be induced to work for a higher certificate. More First Class Teachers are needed everywhere; leaving out the cities, there are only three of them for each county on an average. There must be more of them before teaching can properly be regarded as a profession.

#### TEACHERS' EXAMINATIONS.

The examinations, which have caused so many hours of anxiety and toil to such a number of teachers and students in Ontario during the past year, are over. The number of candidates for certificates, especially for those of the Second and Third grade, is larger than ever before. The results are not yet fully known, but so far as the examiners have been able to report the candidates have done, on the whole, better than usual. The work of preparing for the non-professional examination is now done chiefly in the High Schools, and is therefore more thoroughly and carefully done than formerly. The High Schools have found the preparation of candidates for the examination to be one of their most important functions, and have therefore made greater exertions to perform it properly. The adaptation of the Intermediate and Second Class work has enabled the Masters to do this work successfully. The papers of the Central Committee have, on the whole, given more uniform satisfaction than formerly. This is what might be expected, and shows that the Examiners have learned to estimate correctly the general advancement of education throughout the country. Another reason for the general approval which has been given to the papers may be found in the fact that the examinations are no longer competitive. Mr. Crooks decided wisely, that the object of all the examinations conducted by the Department should be simply to find out whether a candidate was possessed of a sufficient amount of knowledge to entitle him to a certain standing or not, instead of to discover which candidates were possessed of the greatest amount of knowledge. The "grouping" system has also produced good results. There is, no doubt, still room for improvement. The general principles upon which First Class certificates, at any rate, are granted may be somewhat modified by experience, and the papers in one or two of the subjects may



yet be more nearly adapted to the work which should be done in High and Public Schools. The Examiners and the profession are to be congratulated, however, on the fairness of the papers set for the late examinations, and the number of candidates that have shown themselves competent to pass creditably the tests submitted to them. The Education Department are also deserving of praise for the very satisfactory manner in which the papers were printed and distributed. The execution and accuracy of the work throughout reflects great credit on the Departmental printer, and those on whom devolved the most laborious task of sealing and distributing to all parts of the Province such a vast number of papers for the different examinations.

### A MISUNDERSTANDING.

At the late meeting of the Teachers' Association for Eastern Ontario a motion for the appointment of delegates to the Provincial Association was voted down because the Provincial Association had not extended a similar courtesy to the Eastern Association last year. The members of the Eastern Association are to be congratulated on the fact that they reconsidered their action and appointed two delegates to the Provincial Meeting. It would be a great pity if any one should be allowed to cause one portion of the Province to be jealous of the other in educational matters, or that one educational society should in any way regard another as a rival. The two Associations named can be rivals in no sense. Their functions and spheres are totally different. The one is local and the other provincial in its character, and while it is quite proper for the Eastern Association, and all County, and other Associations, to send delegates to the Provincial Convention, it is not to be expected that the Central Association could return the compliment. As well might the Legislative Assembly send representatives to the various ridings represented in it. The oldest and best friends of the Provincial Association are rejoiced to see a section of the Province organizing an Association for the consideration of the educational questions of the day, but they would regret that such a course should in any way weaken the interest of any one in the proceedings of the Provincial Association.

**NEW MANUAL OF SCHOOL LAW.**—The appearance of the "Manual of School Law," just issued by the Minister of Education for Ontario, will be received with delight by School Boards and the teaching profession throughout the Province. The complaint has been made frequently that it was next to impossible to understand what the law was in regard to many questions, owing to its disjointed condition. It must be admitted that until its consolidation during the late session of the Legislature there was a good deal of force in the complaint. But, if the Law was a source of trouble, the Regulations were infinitely more mystifying. Sent out, as they were, in sheet form, at irregular periods, many of them were lost, and the most careful had difficulty in keeping track of them, so as to be sure he was acting in accordance with the Statute.

Now, however, all is changed. The Law and the Regulations are all arranged in natural order, with a complete index, and bound in a neat and convenient form. The volume contains, in addition to the Law and Regulations, Memoranda and opinions of the Minister on various points submitted to him since he took charge of the Educational Department, and lists of the Text-books and course of study prescribed for Public and High Schools. Mr. Crooks deserves, and will undoubtedly receive, the thanks of the School authorities of the Province for his most excellent work. A copy will be sent to each School Board.

**CONGRATULATORY.**—It is with much pleasure that we record the marriage of Mr. Morris Johnston Fletcher, Provincial Editor of the JOURNAL for Manitoba, to Miss Annie Adams, of Toronto. Mr. Fletcher is Principal of the Winnipeg public schools, and he will no doubt receive many valuable suggestions to aid him in carrying on his work from Mrs. Fletcher, who has been for some years a very successful teacher in the Toronto Model School.

### Contributions and Correspondence.

#### WHAT IS CRAM?

BY C. CLARKSON, B.A.

It is a word in common use to denote the ability of a pupil to repeat by rote what he has never understood. In its proper application it means the collection of undigested and unassimilated knowledge. The sayings of Mrs. Partington are "cram" in the sense of a person's having caught the language without having apprehended the idea wrapped up in that language. The youth who protested to his college tutor that he would "get up" anything, but would never undertake to *understand* Euclid, was guilty of "cram" in the first degree.

A distinction must be made between this "cram" and that careful storing of the memory with the result of previous knowledge which has been realized in consciousness, carefully thought out and made a personal possession—that memorizing, accompanied by clear intelligence, which is an essential part of true education. So long as the term "cram" is confined to its proper signification we cannot object to the name. It is a short emphatic expression for a foolish and reprehensible practice, which ought to be vigorously condemned wherever it is fairly detected.

But as the term has lately been applied in an offensive sense to a kind and quality of work of the best sort, simply because it happens to cut athwart some ancient prejudices, it becomes necessary to insist on a proper distinction between the two kinds of "cram"—*bad cram* and *good cram*—and to place the former in its proper light by a few illustrations taken from actual school life.

According to Whately, knowledge consists in three things. 1. The thing must be true. 2. One must believe that the thing is true. 3. This belief must rest on sufficient grounds. Now, bad cram never attains these three conditions; good cram invariably fulfils all three conditions. Sometimes bad cram gets as far as one condition, namely, the second; very often, however, it falls short of even persuading the learner that there is any truth or meaning in what is learned. Let us illustrate this by some easy examples in elementary school work. We will select Geography as one of the easiest and least abstract subjects—one about which the very

smallest child in the infant class may be taught some real knowledge. Here, then, is a class from a school which has been many years under the influence of authority which fulminates against "cram" in the abstract. The class has had instruction in Geography one or two years. The pupils can repeat in concert the names of many places. They can point to certain marks on a thing called a map, and can pronounce certain words printed on the map. They do this with great apparent ease. Now, let us stop the exercise and try to ascertain how far the class goes by blind memory, and how far by the light of intelligence.

What is the map? No answer. Which part of the map represents the North? The top. The South? The bottom. The East? The right hand side. The West? The left hand side. All the class point to the North of this room. Every hand points to the ceiling. Point to the South. All hands point directly toward the floor. For east and west they point to the right and the left, which, as they stand, is entirely wrong. Here is genuine bad cram of the worst sort.

Let us enter another class of young children. They are reciting in grand chorus the definitions of some geographical terms. To the unsuspecting observer the recitation is a perfect success. Not a child falters, not an answer is missed. Well, now, we have heard mountain, island, river, etc., defined in appropriate words; just one question if you please. Children, what is a strait? Grand chorus: "A strait is a narrow passage of water connecting two bodies of water." Quite right; very fluently answered. Now, think a moment. If the shore is very crooked, will this narrow passage be a strait—(drawing on the board)—like this? No, sir. Why? Because it would not be straight at all. Humph! we say: *Verba et preterea nil*, cram of the bad sort, names without things, memory without intelligence.

We will step into a higher class. It is Arithmetic. This is the problem: "A can do a piece of work in 2 days, which B can do in 3 days. Find the time both will do the work when they work together." It is done in less time than the teacher required to read it out. Admirable! This boy, please explain how you did it so rapidly. "I divided the product of the numbers by their sum." Why? No answer. Well, you all did that cleverly. Try this question of the same sort. A can do a piece of work in 2, B in 3, and C in 4 days. How long will they all require? Class answers promptly  $2\frac{2}{3}$  days. Very quickly done; but A alone can do the work in two days. Do the three together take longer than one man alone? We leave the teacher to meditate on his bad cram.

Here is a lower class working questions in Reduction. This is the one on the board, "Reduce £19 19s. 11½d. to farthings." Nearly all in the class obtain the correct answer. Let us see how much they understand of the process, and how far they go blindfold. How did you reduce the £19 to shillings? Multiplied it by 20. Why? Because 20s. make £1. Very good; what is this 20 by which you multiply, 20 what? 20 shillings. Then did you multiply £19 by 20s.? Yes. Then what is multiplication? Whole class in sing-song concert—"Multiplication is the process of finding what a number amounts to when it is repeated a number of times." Well, that may do. Which number did you repeat here? £19. How many times? No answer. Did you repeat it 20 shillings' times? No, and laughter. What then? After a pause, 20 times. Well, if you take £19 once, what have you. £19. Twice? £38. Twenty times? £380. Then what is the 380 you have on your slates? £380. Then have you reduced the £19 to shillings or to pounds? To pounds. Bad cram again, the how without the why; mechanical drill without education of the thinking power.

But lest we become nauseated with "cram," lose faith in all teaching, and begin to think that it is all bad cram together, let us adjourn and find some school where the "cram" is of a better sort,

and pushed energetically forward in such a way as to carry along Master Intelligence as well as that useful beast of burden, Memory. If the omen is propitious, perhaps we may consult the oracle and pay a visit with the object of satisfying ourselves that good cram is a very different thing from what we have witnessed, entirely fulfilling the essential conditions of knowledge. We shall see whether the things taught are true, whether the pupils fully believe them to be true, and whether they have sufficient grounds for their belief.

(To be continued.)

To the Editor of the Canada School Journal.

SIR,—Perhaps the conductors of the JOURNAL will lend the aid of their circulation for the rescuing of two very worthy common sayings from perversion and consequent oblivion.

"He will never set the Thames on fire," is incorrect; it should be "temz" instead of Thames. The "temz" was an instrument used in barns in former times, and required such quick manipulation that a lazy or inapt person was not likely to cause its ignition by friction. The application, when we use the right word, is obvious. As it is commonly written, it is so hyperbolic as to lose its significance.

So with another, "To the manner born," is utterly vague and meaningless. "To the manor born" conveys its own origin and authenticity. It was used by our earlier writers to distinguish those born on the estate of a feudal lord, from his recently purchased or acquired vassals. To this the more extended application of modern usage can be easily traced.

The student of Etymology will be at no loss to account for the way by which the words "temz" and "manor" have glided into "Thames" and "manner" in using, or rather misusing, the above pithy aphorisms.

Wishing the SCHOOL JOURNAL the high success it deserves, and that others of its readers may make bold to rescue the pithiness of our "good" old Saxon tongue from the inroads of careless innovation, I am, Yours respectfully,

WM. G. STEWART,

July 12th, 1878.

Hilly Grove, Manitoulin Islands.

### Examination Questions.

Under this head will be published from month to month the papers set at the examination for entrance into the High Schools of Ontario, the Intermediate High School Examination, the examination of candidates for Public School teachers' certificates, and the Junior and Senior Matriculation examinations of the University of Toronto. The Mathematical papers will in all cases be accompanied by analytical solutions of the more difficult problems and hints on the best methods of solving the others.

#### JULY EXAMINATIONS, 1878.

##### SECOND CLASS TEACHERS AND INTERMEDIATE.

##### ALGEBRA.

TIME—TWO HOURS AND A HALF.

NOTE.—The minimum required for pass is 20 per cent. of the marks on each paper, and 40 per cent. of the marks in each group.

Values.

5 1. Multiply  $a^2 + b^2 - c^2 + 2ab$  by  $a^2 - b^2 + c^2 + 2ac$ , and divide the product by  $a^2 - b^2 - c^2 + 2bc$ .  $(a + b + c)^2$

8 2. Simplify  $\frac{18a^2b^2}{x+y} \div \left\{ \frac{8ab(x-y)}{7(c+d)} \div \left( \frac{4(c-d)}{21ab^2} \div \frac{8(c^2-d^2)}{a(x^2-y^2)} \right) \right\} = \frac{a}{b}$

8 3. Find the L. C. M. of  $4x^2 - 9y^2$ ,  $4x^2 - 12xy + 6y^2$ , and  $6x^2 - 18xy + 6y^2$ , and the G. C. M. of  $1 + x^2 + x + x^3$  and  $2x + 2x^2 + 8x^3 + 8x^4$ .  $(2x - 3y)(2x + 3y)(3x - 2y)$

6 4. Obtain the square root of  $\frac{a^2}{b^2} = 1 + \frac{c^2}{b^2}$

7  $\frac{1}{2} - \frac{3}{4}\sqrt{\frac{1}{2}}$ , and find the value of c when  $4x^2 - 12xy + cx^2y^2 - 12xy^2 + 4y^4$  is a perfect square.

$c = 17.$



- ✓ 3 5. Distinguish between an equation and an identity. Give an example of each. What value of  $m$  makes  $(x-3)^2$
- ✓ 5  $-(x-1)(x-5)=m$  an identity? Can any value of  $m$  make it an equation?  $x=4$
- 8 6. Reduce to its simplest form
- $$\frac{\sqrt{2+x} - \sqrt{1+x}}{\sqrt{1+x} - \sqrt{x}} = \frac{1 + \sqrt{1-1} \div (1+x)}{1 + \sqrt{1+1} \div (1+x)}$$
- Solve the equations—
- ✓ 5 (1)  $\frac{2x+5}{x+2} + \frac{2x-5}{x-2} - \frac{4x-5}{x-1} = 0$ .  $x=0$   
 $x=4$
- 5 (2)  $\frac{a}{\sqrt{x} + \sqrt{a}} = \frac{a}{\sqrt{x} - \sqrt{a}} + \sqrt{a}$ .
- ✓ 6 (3)  $78y-5x = (x-5y)(x+3y)$   $y=1$  or  $0$   
 $\frac{2}{x-5y} - \frac{5}{x+3y} = \frac{7}{38}$ .  $x = \frac{200}{38}$  or  $11$
- ✓ 10 8. A person performed a journey of  $22\frac{1}{2}$  miles, partly by carriage, at 10 miles an hour, and partly by train, at 36 miles an hour, and the remainder by walking, at 4 miles an hour. He did the whole in 1 hour 50 minutes. Had he walked the first portion, and performed the last by carriage, it would have taken him 2 hours  $30\frac{1}{2}$  minutes. Find the respective distances by carriage, train and walking.
- ✓ 4 9. Solve (1)  $ax^2+bx+c=0$ . *Carriage 12, Train 7, walk 3*
- ✓ 6 (2)  $\frac{x+5}{x+4} - \frac{2x+1}{x+2} = \frac{4x+9}{2x+7} - \frac{12x+17}{6x+16}$ .
- ✓ 5 10. What value of  $y$  will make  $2x^2+3xy+6y^2$  exactly divisible by  $x-3$ ?
- ✓ 9 If  $a$  and  $b$  are the roots of the equation  $x^2+x+1=0$ , show that  $a^3-b^3=0$ .

SOLUTIONS.

1.  $= \frac{(a+b+c)(a+b-c)(a+b+c)(a-b+c)}{(a+b-c)(a-b+c)} = (a+b+c)^2$ .
2.  $\frac{a}{b}$ .
3.  $2(\sqrt{x-3y})(2x+3y)(3x-2y)2x^2-6xy+8y^2, 1+x^2$ .
4.  $\sqrt{\frac{1}{3}} - \sqrt{\frac{1}{3}}$ . Extracting sq. rt. we see that  $c$  must equal 17; same obtained on comparing quantity with square of  $2x^2-mxy+2y^2$ .
5.  $m=4$ .  $m$ =some quantity involving  $x$  would make the expression an equation.
6.  $\frac{\sqrt{2+x} - \sqrt{1+x}}{\sqrt{1+x} - \sqrt{x}} \times \frac{\sqrt{2+x} + \sqrt{1+x}}{\sqrt{1+x} + \sqrt{x}} = \frac{2+x-1-x}{1+x-x} = 1$ .
7. (1) Reduces to  $\frac{1}{x+2} - \frac{1}{x-2} + \frac{1}{x-1} = 0$ ; whence  $x=4$ , or 0.
- (2)  $a\sqrt{x} - a\sqrt{a} = a\sqrt{x} + a\sqrt{a} + \sqrt{a}(x-a)$ ; whence  $x = -a$ . (3) Clearing second of fractions and combining it with the first, we have  $7(78y-5x) = -99x+1028y$ , or  $8y = x$ ; thence  $x=8, y=1$ .
8.  $x$  = dis. by carriage,  $y$  = dis. by train; then  $\frac{x}{10} + \frac{y}{36} + \frac{22\frac{1}{2} - x - y}{4} = \frac{11}{6}$ , and  $\frac{x}{4} + \frac{y}{36} + \frac{22\frac{1}{2} - x - y}{10} = \frac{801}{120}$ ; and  $y = 12, x = 7\frac{1}{2}$ ; he walked 3.
9. (2) Equation reduces to  $-\frac{1}{x+4} + \frac{1}{x+2} = -\frac{5}{2x+7} + \frac{15}{6x+16}$ ; whence  $\frac{2}{(x+4)(x+2)} = \frac{2x+7}{(6x+16)}$ ;  $x = 4$ , or  $-6$ .
10. (1) Remainder,  $2(8)^2 + 3(8)y + 6y^2$ , must = 0; whence  $y = -8 \pm \sqrt{-89}$ . (2)  $a+b = -1, ab = 1$ ;  $\therefore a^3+ab+b^3 = (a+b)^3 - ab = 0$ ;  $\therefore a^3-b^3 = (a-b)(a^2+ab+b^2) = (a-b) \times 0 = 0$ .

ARITHMETIC.

TIME—THREE HOURS.

Values.

- 4 1. From 78004 take 29078, explaining clearly every step of the process.
- 4 Multiply 5981 by 427, and then divide the product by 5981, showing that the latter process is the converse of the former.
- 8 2. What is a composite number? a prime number? When are two numbers prime to each other?
- 6 Of all the numbers, besides unity, that may be subtracted from 18445 an exact number of times, which may be taken the greatest, and which the least number of times?
- 11 3. Show that the value of a fraction is not altered by multiplying both terms by the same number.
- Simplify  $\frac{\sqrt[3]{5 \cdot 12} + \sqrt[3]{0 \cdot 03375}}{\sqrt[3]{80} - \sqrt[3]{0 \cdot 01}}$
- 9 4. A room is 24 ft. 6 in. long, 18 ft. 8 in. wide, and 11 ft. 9 in. high, how many yards of paper 27 in. wide would be required to cover its walls?
- 9 5. If 2 lbs. of tea were worth 8 lbs. of coffee, and 4 lbs. of coffee worth 21 lbs. of cocoa, and 7 lbs. of cocoa worth 9 lbs. of sugar, and 20 lbs. of sugar worth 43 lbs. of raisins, how many lbs. of raisins would be worth 80 lbs. of tea?
- 10 6. A person discounts a note due in 15 months, so as to make 10 per cent. per annum on his money, what rate per cent. on the face of the note does he exact?
- 5 7. Extract the square root of six million seven hundred and eighty thousand eight hundred and sixteen ten billions.
- 7 An estate which has been surveyed is 400,000,000 times as large as the map of it which has been made; express the linear scale of the map in terms of an inch to a mile.
- 10 8. A rectangular solid 10 ft. long and 8 ft. broad weighs 43 tons, and a cubic inch of the same material weighs 2 oz.; find the depth of the solid.
- 12 9. A certain metal weighs 480 lbs. per cubic foot, and is worth \$50.40 per ton (2000 lbs.); what will be the cost of a quantity of the metal sufficient to make a mile of piping of 9-inch bore and 3/8 of an inch thick? (Use 84 as ratio of the circumference of a circle to its diameter.)
- 10 10. Two circular plates of gold, each an inch thick, the diameters of which are 9 inches and 12 inches respectively, are melted into a single plate 1/2 an inch in thickness; find its diameter.

SOLUTIONS.

3. Multiply num. and den. by  $\sqrt[3]{100}$ ; then  $\frac{\sqrt[3]{512} + \sqrt[3]{8 \cdot 875}}{\sqrt[3]{8000} - \sqrt[3]{1}} = \frac{8+1\frac{1}{2}}{20-1} = \frac{1}{2}$ .
4. Area of walls =  $2(24\frac{1}{2} + 18\frac{1}{2}) \times 11\frac{1}{2}$  sq. ft. Area of 1 yd. paper =  $24\frac{1}{2} \times 8$  sq. ft.;  $\therefore$  no. yds. =  $\frac{2(24\frac{1}{2} + 18\frac{1}{2}) \times 11\frac{1}{2}}{24\frac{1}{2} \times 8} = 148\frac{1}{2}$ .
5. 1 lb. tea = 2 lbs. of coffee; 1 lb. coffee = 3 lbs. cocoa; 1 lb. cocoa = 3 lbs. sugar; 1 lb. sugar = 3 lbs. raisins;  $\therefore$  80 lbs. tea =  $80 \times \frac{1}{2} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3} = 70\frac{2}{3}$  lbs. raisins.
6. If \$100 represent P. W. of note discounted for 15 mo. at 10 per cent.; face of note =  $112\frac{1}{2}$ ; hence int. on face of note is  $12\frac{1}{2}$  on  $112\frac{1}{2}$ , for 15 mo., or  $11\frac{1}{2}$  per cent., or  $\frac{1}{3}$  of  $11\frac{1}{2}$  =  $8\frac{1}{3}$  per cent. per annum.
7. (a) \$02604. (b) If estate equal 400,000,000 sq. miles, side of estate = 20000 linear miles. Now 1 mile, or 63860 in. on side of estate = 1 in. on side of map,  $\therefore$  20000 in. on side of estate =  $\frac{20000}{63860} = .315$  in. on side of map. Or, 20000 in. on side of estate = 1 in. on side of map,  $\therefore$  63860 in. on side of estate =  $\frac{63860}{20000} = 3.16$  on side of map.

8. Block  $10 \times 8$  ft. 1 in. thick weighs  $2 \times 80 \times 144$  oz.; if  $2 \times 80 \times 144$  oz. has 1 in. in thickness, block has  $\frac{4\frac{1}{2} \times 2000 \times 16}{2 \times 80 \times 144} = 6\frac{1}{4}$  in. in thickness.

9. Rad. of bore =  $\frac{3}{8}$  ft.; rad. of pipe =  $\frac{1}{4}$  ft. Volume of pipe =  $8\frac{1}{2} \left\{ \left(\frac{3}{8}\right)^2 - \left(\frac{1}{4}\right)^2 \right\} \times 5280$  cub. ft. 1 cub. ft., or 480 lbs., cost \$12.096;  $\therefore$  pipe costs  $8\frac{1}{2} \left\{ \left(\frac{3}{8}\right)^2 - \left(\frac{1}{4}\right)^2 \right\} \times 5280 \times 12.096 = \$4900.50$ .

10. Vol. of plates 1 in. thick =  $\left\{ (4\frac{1}{2})^2 + 6^2 \right\} \times 2^2 = \frac{225}{4} \times 2^2$ , or if  $\frac{1}{2}$  in. thick, =  $\frac{225}{2} \times 2^2$ ;  $\therefore 2^2 \times$  (rad. of new plate)<sup>2</sup> =  $\frac{225}{2} \times 2^2$ ;  $\therefore$  rad. =  $\frac{15}{\sqrt{2}}$ , or dr. =  $15\sqrt{2}$ .

NATURAL PHILOSOPHY.

TIME—TWO HOURS AND A HALF.

NOTE.—Candidates, in order to pass, must make at least 22 marks on this paper, and at least 120 marks on the group—Natural Philosophy, Chemistry, and Book-keeping.

Values.

- 8 1. (a) What are the conditions that two forces acting on a body may produce no effect?
- 5 (b) What are the conditions for three forces so acting?
- 6 (c) Show by a diagram how to arrange pressures of 8 lbs., 4 lbs., and 7 lbs., so that they may be in equilibrium. (The pressures must not be taken acting in the same straight line.)
- 6 (d) Similarly show how to arrange pressures of 5 lbs., 12 lbs., and 18 lbs., to be in equilibrium.
- 10 (e) In like manner show how to arrange pressures of 8 lbs., 4 lbs., 12 lbs., and 18 lbs. to produce equilibrium.
- 8 2. (a) What is meant by the moment of a force?
- 5 (b) How can moments be represented if forces are represented by straight lines?
- 10 (c) Find the resultant in magnitude and position of four pressures, of 1, 2, 8, and 4 lbs. respectively, acting in the plane of a square at its angles and parallel to one of its diagonals, the length of a side of a square being 10 inches.
- 5 3. Define the term "centre of gravity."
- 10, 10 Two heavy spheres, whose diameters are 4 and 3 $\frac{1}{2}$  inches respectively, are suspended from the opposite extremities of a horizontal straight rod 4 feet 9 inches long. How far from the extremity to which the larger sphere is attached must the rod be supported for the spheres to balance, (a) if the rod is weightless, (b) if the weight of the rod is  $\frac{1}{2}$  that of the spheres together?
- 5 4. Enunciate the principle of virtual velocities.
- 10 (a) Show by the principle of virtual velocities that a pressure of 869 lbs. applied parallel to the base of a smooth plane 41 feet long and rising 9 feet will keep in equilibrium a weight of 1640 lbs. resting on the plane.
- 5 5. State the law of the tensions of the parts of a perfectly flexible weightless cord passing around one or more smooth pulleys.
- 10 (a) A man stands in a bucket suspended from a system of pulleys in two blocks; the upper block (fixed) contains three sheaves, the lower (movable) contains two sheaves. If the man weigh 160 lbs., the bucket 40 lbs., and the lower block 10 lbs., with what force will the man have to pull on the rope to keep himself suspended in mid-air, the rope, as it passes from one block to the other, being vertical?
- 5 6. Show how to determine the specific gravity of a solid by weighing it in air and in water.
- 10 (a) Forty pounds of gold, specific gravity 17.5, are coined into 1869 sovereigns. How many grains will a sovereign weigh in water?
- 10 7. A square board floating in water descends one-third of an inch when a weight of 10 oz. is placed upon it. Find the length of an edge of the board, assuming a cubic foot of water to weigh 1000 oz.

SOLUTIONS.

1. (c) Forces are parallel, in same pl., 8 and 4 opp. to 7 and on opp. sides of it, and their distance from 7 as 4 : 8. (d) 5 and 12 at right angles, and 18 along diag. of rectangle of which they are sides. (e) 12 and 18 opp. to one another; 8 parallel to and in same dirn. as 12; 4 parallel to rest, opp. to 18 and 8, and dividing dis. bet. them in ratio 8 : 1. Other arrangements may be made.

2. (c). 10 lbs. acting  $\sqrt{2}$  in. from centre of sq. and parallel to the forces.

8. Weights of spheres are as cubes of dimensions; hence (a) 57 in. must be divided in ratio  $(8\frac{1}{2})^3 : (4)^3$ , and distance required =  $(3\frac{1}{2})^3$

$\frac{(4)^3 + (8\frac{1}{2})^3}{(4)^3}$  of 57 = 22.86. (b) Here weights on bar are as  $(4)^3$ ,  $\frac{9}{7} \{ (4)^3 + (8\frac{1}{2})^3 \}$ ,  $(8\frac{1}{2})^3$ ;  $\therefore$  if  $x$  be required distance, taking moments about end,  $x \{ (4)^3 + \frac{9}{7} \text{ of } (4)^3 + \frac{9}{7} \text{ of } (8\frac{1}{2})^3 + (8\frac{1}{2})^3 \} = \frac{9}{7} \times \frac{9}{7} \text{ of } \{ (4)^3 + (8\frac{1}{2})^3 \} + 57 \times (8\frac{1}{2})^3$ ; or  $x = 25.46$ .

4. Horiz. length of pl. is 40 ft. Let weight be displaced along entire length of pl.; then virt. vel. of wt. is  $W \times 9$ , the weight having moved in direction in which it acts 9 ft., also power has moved in its direction 40 ft.;  $\therefore$  its virt. vel. is  $869 \times 40$ ;  $9 \times W = 40 \times 869$ , or  $W = 1640$ .

5. (a) 35 lbs.; one end of string is attached to lower block.

6. (a) Since water weighs  $\frac{1}{17.5}$  of wt. of equal bulk of gold, wt. of gold in water is  $\left(1 - \frac{1}{17.5}\right)$  of its wt. in air;  $\therefore$  wt. of sov. in water =  $\frac{16.5}{17.5}$  of  $40 \times 12 \times 20 \times 24 = 116.2$ .

7. Let  $x$  be length of side in inches then  $\frac{1}{3} x^3 =$  vol. of fluid displaced;  $\therefore \frac{1}{3} x \times \frac{1}{17.5} =$  wt. of fld. displaced = 10 oz. or  $x = 7.2$ .

Since the publication of the July number we have received correct solutions of Problem 3, June, by J. B., of Wendover, J. R. Stirling, of McIntyre, and \_\_\_\_\_ of Trenton; of Problems 8 and 4, June, by W. B., of Fenelon Falls, and by A. H., of Kingston, the proposer of them; of Problem 1, June, by Thomas Campbell, of Ottawa; and of Problem 2, June, by A. Hay, of Kingston.

Mr. A. Hay, of Kingston, gives the following solution of Problem 1, July:

Let  $A, B$  and  $C$  be the angles of elevation, with sights at  $h_1, h_2, h_3$ , respectively;  $H$ , the height through which a body must fall to acquire the initial velocity of the bullets;  $l$ , the length of the barrel from back-sight to fore-sight—

$$\begin{aligned} \text{We have } r_1 &= 4H \sin A \cos A, \\ r_2 &= 4H \sin B \cos B, \\ r_3 &= 4H \sin C \cos C; \end{aligned}$$

$$\therefore r_1 = 4H \frac{h_1 l}{h_1^2 + l^2}, \quad r_2 = 4H \frac{h_2 l}{h_2^2 + l^2}, \quad r_3 = 4H \frac{h_3 l}{h_3^2 + l^2};$$

$$\therefore \frac{r_1}{r_2} = \frac{h_1(h_2^2 + l^2)}{h_2(h_1^2 + l^2)}, \quad \frac{r_1}{r_3} = \frac{h_1(h_3^2 + l^2)}{h_3(h_1^2 + l^2)}; \text{ whence}$$

$$\text{we find } l^2 = \frac{r_2 h_1 h_2^2 - r_1 h_2^2 h_1}{r_1 h_2 - r_2 h_1} = \frac{r_3 h_1 h_3^2 - r_1 h_3^2 h_1}{r_1 h_3 - r_3 h_1}$$

Striking out the common factor  $h$  in the last equation, clearing of fractions and arranging the terms, we obtain

$$r_1 r_2 h_3 (h_1^2 - h_2^2) + r_2 r_3 h_1 (h_2^2 - h_3^2) + r_3 r_1 h_2 (h_3^2 - h_1^2) = 0.$$

Pressure on our columns prevents us from giving solutions of rest of problems proposed.

FOR SOLUTION.

- 1. The square of half my age is my age inverted. Find my age. W. B., Fenelon Falls.
- 2.  $ABC$  is a right-angled triangle,  $A$  being the right angle;  $AD$  is drawn perpendicular to  $BC$ . Prove by means of Euc. Bk. I. that the rectangle contained by  $BD, DC$  is equal to the square on  $AD$ . R. B. COCHRANE, Ottawa.
- 8. A grocer buys a stock of tea and calculates to sell it as follows:  $\frac{1}{2}$  of it at 65 cents per lb.,  $\frac{1}{3}$  of the remainder at 70 cents, and the residue at 75 cents, and by so doing will gain 40 per cent. on it; but when he has apparently sold half of it, he discovers that his

scales have been giving  $\frac{1}{4}$  of an oz. too much on every lb.; he then rectifies his scales and sells the remainder at 75 cents per lb., and gains as much above 40 per cent. as would buy  $2\frac{1}{2}$  lbs. tea at the cost price. Find the number of lbs. bought.

JAMES PARIS, White Lake.

V. B.—Your 3rd problem is wrong. You will find that if the condition be introduced that the planks are of equal length, two, each 14.668 ft. long, will do. Your second is too easy.

J. W., London's Algebra, page 145. 4. Divide by  $x-2$ , and resulting quadratic gives other roots. Page 164. 7. Divide by Coeff. of  $x^2$ , and equation becomes  $x^2 + \frac{b}{a}x + 1 = 0$ , whence product of roots,  $\alpha\beta = 1$ ,  $\therefore \alpha = \frac{1}{\beta}$ . 8. First equation may be written  $\frac{a}{x^2} + \frac{b}{x} + c = 0$ , whence, comparing it with equation  $ax^2 + bx + c = 0$ , the statement is evidently true.

## Practical Department.

### MENTAL ARITHMETIC. III.

J. A. McLELLAN, M.A., LL.D.

#### METHODS.

From what has been said in the previous articles, it is plain that mental or oral arithmetic is not intended to supersede written arithmetic, but should rather be its constant auxiliary. In fact, since there is but one science of arithmetic, mental and written arithmetic are logically one. Mental arithmetic is mainly concerned with the discussion of principles; written arithmetic, with their practical application. In the one case, by means of small numbers whose combinations the mind easily grasps, the pupil becomes master of the principles of the science, and familiar with the types of questions to which they may be applied: in the other, he applies the knowledge thus acquired to the more elaborate combinations and more complex operations which cannot be effected without written aids. In both cases, the *rationale* of the operations is the same—the only difference being that, pencil and paper are used when the problem involves large numbers and extended operations, or when its conditions are so numerous that the entire series of arguments involved in the solution cannot readily be retained in the mind. The principles, then, which underlie the proper teaching of mental, or oral, arithmetic, are of universal application; and he who teaches this part of the subject well—guided by a knowledge of the laws which regulate mental action—will teach all arithmetic with equal efficiency. There are three general principles which form the basis of all good teaching of arithmetic:

(1) All the fundamental operations, formation of tables, &c., should be taught by means of sensible objects.

(2) The order of procedure should be from the *known* to the *unknown*.

(3) The inductive method should be followed, at least in the earlier stages of the pupil's course.

These principles are almost universally accepted in theory, but by no means universally followed in practice. They are, on the contrary, by too many teachers persistently ignored. Is the law that the first ideas of numbers must be obtained from the presentation of visible objects always observed? The child is taught to count without any objects before him which he can see or handle, and his counting is a vain repetition of visible unmeaning words. Instead of being led, through the presentation of visible objects, to form clear notions of numbers and their primary operations, he is taught to sing, or chant,

with the intelligence of an automaton, the tables connected with the fundamental rules; while with "ravished ears" the teacher apparently listens, as if some inner sense had caught an echo of the music of the spheres. He receives, for example, on the authority of the teacher, the facts that 5 and 4 are 9, that 5 times 4 is 20, that 20 divided by 5 is 4, &c., while he has no clear notions of the values represented by the several numbers, and of course can form no clear conception of their combinations. How much better the method which, appealing to the "trusty eye," imparts the clearest possible ideas of such facts, so that the memory quickened by intelligence makes them its own forever.

So, in the case of the second principle, do we always make use of what the child knows to enable him to grasp what he does not know? The various arithmetical rules, representing merely artificial and frequently illogical and inconvenient divisions of the subject, are too often regarded in practical teaching as demanding the application of new methods and principles. When the child knows that 5 and 4 are 9, he knows that 4 from 9 leaves 5, and 5 from 9 leaves 4. When he knows the elements of addition, he knows how to form the multiplication table; and when he knows that 4 times 5 is 20, he knows that 20 divided by 5 gives 4, and divided by 4 gives 5. When he has become familiar with division, he is in possession of all the principles necessary, under proper teaching, to enable him to master with ease the so-called *difficult* subject of fractions; and then he is potentially master of the whole of ordinary arithmetic. But instead of the entire subject being taught from a few germinal principles, mark how divisions and subdivisions are multiplied in the ordinary text-books to perplex the student and nullify the efforts of the teacher. How many "cases" have we of *Profit and Loss*, with their independent rules? How many "cases" of *percentage* with their corresponding rules and definitions? "Given the buying price and the selling price to find the gain per cent.;" "Given the buying price and the gain per cent. to find the selling price;" "Given the *base* and *rate* to find the percentage;" "Given the base and rate to find either the *amount* or the *difference*," &c., &c. It is certainly no wonder that the student fails to apprehend the logical unity of a science really involving only a few simple principles, and that he soon becomes thoroughly lost in a maze of rules and formulæ—the multitudinous inventions of a perverse ingenuity to render mathematics in general, and arithmetic in particular, abhorrent to the race. He turns with dread the page which is to introduce him to a new rule; for it introduces him to a *terra incognita*, an unexplored region in which are to be found no traces of the familiar landmarks of the tract he has already painfully explored—a very wilderness of "rocks, caves, lakes, fens, bogs, dens," with little prospect of a coming Moses to guide him on his way.

The third principle certainly gives the true order of procedure in elementary teaching. In the earlier stages of mental development, the faculties chiefly prominent are observation, perception, memory: the child is therefore capable of acquiring—and derives pleasure from acquiring—facts which are to serve as the materials of thought; but he is incapable of grasping truths embodied in abstract propositions, or of even formulating the results of his own incomplex thinking. We act, then, in direct violation of one of the most obvious laws of mental action when we compel a child to memorize the formal statement of abstract conceptions as embodied in definitions and rules which, being the highest results of thought, are utterly beyond his power to grasp. We should rather give the general in the concrete; we should present fact after fact in illustration of the principle. The child cannot grasp the general principle, but he can understand the facts which it comprehends as they are severally presented, till at last the

general truth is revealed to his mind. The three principles which have been thus briefly noticed will be kept steadily in view in our attempt to illustrate the rational method of teaching arithmetic.

In giving first lessons on the subject, we think the following order may be observed with advantage: (1) First notions of numbers—counting. (2) Analysis of the elementary numbers, so as to give the clearest ideas of the values they represent. (3) Notation of numbers (tens and units), with further analysis. (4) Addition and subtraction, with formation of tables. (5) Multiplication and division, with formation of tables. This order we shall now proceed to illustrate.

### CALISTHENICS IN SCHOOL.

**NECESSITY FOR CALISTHENICS.**—Educators all over the world are learning rapidly to remember that the little beings entrusted to their care have two natures to be developed—the mental and the physical. To develop the one at the expense of the other produces an unnatural being, who is incapable of performing the duties of life in so perfect a manner as he might have done. Studying too constantly draws the blood from the extremities of the body to the brain, and also concentrates the nervous energy to the nerve centres. This enfeebles the body and robs it of its power of development. Calisthenic exercises distribute both blood and nervous energy to the different parts of the body. The one is the natural antidote for the evil effects of the other. Each used alone will produce good results, but evil ones also. Used judiciously together each neutralizes what is bad in the other, and thus a total of two benefits is secured, instead of one good and one bad result. The physical man will be developed as well as the intellectual, and the natural growth of the form adds greatly to the strength and vigor of the latter. Children in schools have generally far too much intellectual exercise—at least their intellectual employments are continued too long and too continuously. It is therefore imperative that the teacher should give considerable attention to the cultivation of the physical powers to secure and preserve the proper energy of all the vital powers. Calisthenic exercises afford the best means of giving a correct muscular cultivation in school. Of course the teacher's duty in regard to the physical well-being of his pupils does not begin or stop with calisthenics. He should attend most carefully to the temperature and ventilation of the school room, and give his pupils practical rules with reference to their clothing, cleanliness, food, &c.

**MISTAKES.**—Two mistakes are usually made, even where calisthenic exercises are well taught, which greatly reduce the amount of benefit derived from them. They are taught and practised only at stated times in school; and the pupils are led to regard the school room and the school yard as the only places in which calisthenics should be practised. Both mistakes have the same source. The teacher confounds the means with the end to be accomplished, or forgets that he has any ultimate object to attain. This error is, unfortunately, not confined to the teaching of calisthenics. Many teachers teach every subject, as though the school-room was the only sphere in which the knowledge acquired was to be used. Arithmetic, they teach to a child, that he may solve problems in his class, not that it may develop his mental powers, and become an additional force to enable him more successfully to perform his duties in life. Calisthenics taught once a week will certainly do good, but neither teacher nor pupils will derive much benefit from such a course. *Exercise should not be taken for the benefit of the health, either when at school or in after years. The exercise should be taken for pleasure; it should be presented in such a form that pupils forget the muscular exercise itself, and think only of the movements they are attempting to perform. It should be made a*

play or a game, in which the pupil becomes interested, as he does in Lacrosse or Cricket. Then and only then does exercise invigorate and stimulate as it is capable of doing. Frochel recognized this fact, and the whole of his system of Kindergarten "plays," "gifts," and "work" is founded on the principle that the good to be received by mind or body should be received incidentally. No system of exercise for juniors is so perfect as his. The immediate object of calisthenics is to amuse and relieve the pupils; the ultimate object is to develop their physical systems.

**WHAT, WHEN AND HOW TO TEACH.**—Teach free calisthenics; that is, calisthenics without any apparatus, clubs, poles, &c. Teach mainly those practices which exercise the upper or inactive half of the body, and stimulate the vital functions. The exercises may be taught at stated times indicated on the time table—they should be practised at some part of every hour of the day. Students engaged in studying, at school or at home, should stop their work at least once an hour for the purpose of practising calisthenics for a short time. Time will be gained, and students will be healthier and happier, as the result of such a course. No student or brain worker should retire at night without exercising freely, so as to call the blood away from the brain. How can calisthenics be made interesting? By divesting them of their routine character. By showing that they have a definite function, and may be made to prolong life. By making them as far as possible take the form of games. By performing them in time with some simple and pleasing piece of music. Almost all calisthenic exercises may be performed in time with an ordinary "march" tune. Your scholars can sing one, if you cannot.

**BENEFITS.**—Calisthenic exercises, especially when performed in a sprightly manner, accompanied by singing, form the most powerful and, what is of greater importance, the most natural disciplinary agent which the teacher can employ. When a whole class shows symptoms of uneasiness and nervous restlessness, which, if allowed to continue for ten minutes unchecked, will amount to unbearable disorder, one minute devoted to singing and exercise will oil and wind up the machine so that it will run itself for another half hour. What an amount of interruption and irritation that minute's exercising has saved the teacher, and what an amount of flogging and punishment impositions it has enabled the poor pupils to escape from. Ten such brief interruptions to the routine of a day's school work, would do a vast amount of immediate and permanent good. The weariness of long-continued sitting, and the headaches and other nervous affections consequent upon it, would be prevented. The general health of both teachers and pupils would be preserved, and as a natural consequence the amount of work accomplished would be very greatly increased. But the benefits of such a course do not stop with school life. They are seen all through life in the more graceful carriage, the improved form of the shoulders, the expanded chest, in which the lungs and heart have room to perform their most important functions, and in the increased vitality of the system generally.

### PENMANSHIP IN PUBLIC SCHOOLS.

#### V.

By W. B. ROBINSON, ONTARIO BUSINESS COLLEGE, BELLEVILLE.

**Length of Lesson.**—Beginners should write about half an hour every day; more advanced classes forty minutes, at least three times a week.

**Time for Writing.**—Any time during the day that suits the convenience of the teacher may be selected, except immediately after the opening of school, when the hand is unsteady from walk-

ing or the excitement of play, and the last hour of the day, when pupils are apt to be too weary to give the subject proper attention.

**The Amount to be Written** at a lesson must depend on the advancement of the pupils. At first it may be only one quarter of a column, but should be gradually increased as proficiency is gained. After a couple of tracing books have been carefully written through, there will be little difficulty in writing half a page of the next book in order of progression. When the pupil becomes further advanced, as much should be written at a time as can be done well. A great deal must depend upon the control the teacher has over his class in enforcing immediate and exact obedience and lively attention.

**Commencing and Closing.**—To save time there should be system in giving out and collecting materials. I have seen the following plan, given on the covers of Beatty's excellent series of head-line copy books, carried into effect most expeditiously and effectually: Let a monitor leave the books for each row of pupils on the desk at the left, another the pens in like manner. The first pupil passes the books and pens, all but his own, to the second pupil (the one seated next to him on his right), and the second to the third, and so on until each pupil is supplied with his own book. In case of absentees, the one who receives the books last moves to the vacant seat and officiates, and the passing continues as before. At the close, collect in like manner, regulating the movements by count, or signal.

**OPENING.**

1. Take position at desk.
2. Adjust Books.
3. Find Copy and adjust Arms.
4. Open Inkstands.
5. Take Pens.
6. Take ink and write.

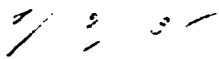
**CLOSING.**

1. Front Position.
2. Wipe Pens.
3. Pass Pens.
4. Close Inkstands.
5. Pass Books.

**Analysis.**—There are certain underlying principles governing the arrangement, slant, and spacing of letters, as well as their proportions, which it will be necessary to consider before analysis is commenced.

Pupils should have clear conceptions of the letters they wish to form, before writing them. A few persons have the "imitative faculty" well developed, and can easily reproduce forms they have seen, but others need to trace, analyze, and measure before they can copy with accuracy and grace. True theory and careful, persistent practice will enable all to learn to write, with scarcely a limit to the degree of excellence.

**Formation.**—Letters are formed of straight lines and curves, variously combined. As a general rule, the straight lines are made with the downward, and the curves with the upward motion of the pen. Continuous writing is produced by a compound movement: that which forms the separate letters being mainly up and down, and that which connects these letters together being mainly in a horizontal direction, from left to right. The following elementary lines constitute the basis of writing:



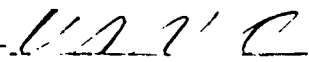
They are called **THE THREE PRINCIPLES**, and may be so combined as to form the letters of the alphabet.

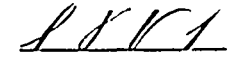
**The First Principle** is simply a straight line, slanting at an angle of 52 degrees (52°) from the horizontal.

**The Second Principle** is the right or sagging curve.

**The Third Principle** is the left or rising curve. The teacher's strong point will be in thoroughly inculcating the three principles, which should ordinarily be distinguished by their numerals.

The various combinations of which these elementary principles are susceptible are shown in the following examples:

Parts of Contracted Letters—

Parts of Extended Letters—

Parts of Capitals—

The advantages of reducing the number of principles from seven, as given in most systems of penmanship, to three, and using simple lines instead of combinations, will be obvious to all thoughtful teachers, for not only can they be more readily and certainly acquired and retained by the pupil, but their constant recurrence and ready adjustment to practical ends, place the student so understandingly in the advancement that progress is a natural result.

The principles once fixed in the mind, their combinations into parts of letters, and thence into the letters complete, are easily enforced, as will be shown by the model lessons which follow.

**Notes and News.****ONTARIO.**

The following are the names of the successful candidates at the recent examinations in the Normal Schools, on the 25th, 26th, 27th and 28th June:—

**TORONTO.**—Askwith, Charles; Anderson, John; Bowie, Angus; Burns, James; Eaton, Seymour; Ellis, Daniel D.; Donnerworth, Jacob; Holmes, Edward S.; Hixon, Edward F.; Jones, James S.; King, Samuel George; Lynes, Kierman; Moore, Cunningham; Munro, Rol; Irelan, Alex. C.; Roberts, Hugh G.; Snelgrove, Charles Frederick; Shearer, John G. Scott; Colin, Alex.; Austin, Emma; Biles, Sarah Elizabeth; Briant, Laura E.; Davidson, Jane; Dingwall, Jane; Goodyear, Marion; Hardy, Kate A.; Ludlow, Mary; McVety, Isabel; McPherson, Annie; MacCammon, Maggie; McKague, Maggie; McNaughton, Janet; Scott, Sarah Mary; Taylor Maggie; York, Sarah Jane.

**OTTAWA.**—Bick, Wm. C. W.; Campbell, Duncan; Dawson, W.; Graham, Nicholas; Harrison, Robert E.; Hodgson, Fred. W.; Hoover, Henry; Hobbs, John H.; Jones, W. A. B.; Morrow, Wm.; Mortimer, Robert L.; Neilly, Samuel; Nesbit, David A.; Whitner, Moses G.; Boyce, Marian; Field, Emma; Horsburgh, Bella; Littlefield, Mary E.; Morrison, Ida; McCrimmon, Annie; McIntyre, Jessie S.; McMullen, Florence; Proctor, Susan; Elvira, Tilley Elizabeth; Traveller, Carrie; Wright, Harriet Marion.

**UNIVERSITY LOCAL EXAMINATION FOR WOMEN.**—The following is the result of the first local examination for women, the names of those who have taken honors being placed in order of merit, and of those who have simply passed, alphabetically:—

**GROUP II.**—(Mathematics).—Charles, E., St. Catharines; Connor, M., St. Catharines; Cox, L., Edgar; J. L., Hamilton; Fitzgerald, L., St. Catharines; Hare, A., St. Catharines; Harrison, M. L., Hamilton; King, F. J., Lalar, M., St. Catharines; Moon, K., Whitby; Moore, G. W., McKay, M., St. Catharines; Palmer, E. F. L., Whitby; Paxton, E. N., Whitby; Shier, M. B., Whitby; Somerville, J., Hamilton; Stewart, J., Hamilton; Troup, A. W., Hamilton; Troup, M., Hamilton; Wood, J., Hamilton.

Jarvis, J. E., from Berlin; King, F. J., from Port Hope; and Moore, G. W., from Clinton, passed in groups at Toronto.

**GROUP III.**—(English History and Geography, and French or German).—Charles, Connor, Fitzgerald, Harrison, Jarvis, J. G. Moore, G. W. Palmer, Paxton, Ross, M. M., Smith, J., Troup, M.

**HONOUR LIST.**

**MATHEMATICS**—Class II.—1, Charles; 2, Palmer; 3, King.  
**ENGLISH.**—Class I—1, Palmer; 2, Paxton; 3, Ross. Class II—1, Charles; 2, Troup, M.; 3, Harrison; 4, Smith, J.  
**HISTORY AND GEOGRAPHY**—Class II—1, Fitzgerald and Palmer; 3, Harrison and Moore; 5, Smith, J.; 6, Charles and Connor.  
**FRENCH.**—Class I—1, Jarvis; 2, Palmer. Class II—1, Charles;

2, Troup, M., 3, Fitzgerald ; 4 Smith, J. ; 5, Ross, 6, Moore ; 7, Connor ; 8, Paxton.

UNIVERSITY OF TORONTO.—Results of the June matriculation examination. The list of those who passed includes ninety-five names, the largest of any one year, and is as follows:—

## PASS LIST.

Ames, A. F.—Parkhill and Brantford.  
 Atkinson, C. R.—Upper Canada College.  
 Bagshaw, F. J.—Collegiate Institute, Toronto, and Port Perry High School.  
 Bain, W. L.—St. Mary's High School.  
 Baird, J.—Toronto Collegiate Institute.  
 Barton, S. G. T.—Toronto Collegiate Institute.  
 Bell, E.—Chatham High School.  
 Bingham, G. A.—Bowmanville High School.  
 Blake, W. H.—Upper Canada College and Galt Collegiate Institute.  
 Boulton, C. R.—Upper Canada College.  
 Boyle, W. H. W.—Hamilton Collegiate Institute.  
 Bristol, E. J.—Napanea High School and Upper Canada College.  
 Broad, W. S.—Oakwood High School.  
 Burnham, J. H.—Peterboro' Collegiate Institute.  
 Canniff, H. T.—Toronto Collegiate Institute.  
 Caven, J.—Upper Canada College.  
 Clark, J. M.—St. Mary's High School and private tuition.  
 Corbet, L. C.—Private tuition.  
 Creelman, W. F. W.—Collingwood Collegiate Institute.  
 Davis, E. P.—Upper Canada College.  
 Dixon, A. E.—Peterboro' Collegiate Institute.  
 Dunbar, F. J.—Upper Canada College.  
 Dunn, H. L.—Welland High School.  
 Elliott, J. C.—St. Catharines Collegiate Institute.  
 Elliott, W.—Self-taught.  
 Evans, W. T.—Waterdown High School.  
 Faskin, D.—Elora High School.  
 Fraser, M. S.—Hamilton Collegiate Institute.  
 Galloway, W. O.—Strathroy High School, Collingwood Collegiate Institute, and private tuition.  
 Glass, C. T.—Dundas Wesleyan Institute and Brantford High School.  
 Gordon, C. W.—St. Mary's High School.  
 Gordon, D. G.—St. Mary's High School.  
 Grant, A.—Toronto Collegiate Institute.  
 Grierson, D. D.—Whitby High School.  
 Grierson, J. F., Whitby High School.  
 Gunther, E. F.—Upper Canada College.  
 Haig, A.—Brantford Collegiate Institute.  
 Hamilton, A.—St. Mary's High School.  
 Hamilton, J.—St. Mary's High School.  
 Henser, W. J.—Collingwood Collegiate Institute.  
 James, N.—Collingwood Collegiate Institute.  
 Johnson, W. H.—Port Perry High School and Toronto Collegiate Institute.  
 Kapelle, G.—Hamilton Collegiate Institute.  
 Kemp, C. C.—Beamsville High School.  
 Kemp, F. W.—Beamsville High School.  
 Langstaff, E. F.—Richmond Hill High School and Upper Canada College.  
 Logie, W.—London High School.  
 Love, S.—Upper Canada College.  
 McArthur, D.—St. Catharines Collegiate Institute.  
 McCullough, J.—Uxbridge High School.  
 McDougall, A. H.—Toronto Collegiate Institute.  
 McGillivray, D.—Goderich High School.  
 McIntyre, E. J.—Galt Collegiate Institute.  
 McKim, W. E.—St. Mary's High School.  
 McKnight, R.—Port Hope High School.  
 McPherson, D.—Brantford Collegiate Institute.  
 Macgillivray, J.—Collingwood High School.  
 Macdougall, W. K.—Upper Canada College.  
 MacMurchy, A.—Toronto Collegiate Institute.  
 Marshall, T. H.—Port Hope High School.  
 Mickle, H. W.—Upper Canada College.  
 Martin, W. A. J.—Hamilton Collegiate Institute.  
 Miles, A. C.—Galt Collegiate Institute.  
 Minchin, D. G.—Hamilton Collegiate Institute.  
 Morphy, W. F.—St. Mary's High School.

Mustard, J. W.—Uxbridge High School.  
 O'Brien, H. S.—Port Perry High School.  
 O'Meara, A. E.—Port Hope High School.  
 Parker, T.—Upper Canada College.  
 Pike, I.—Hamilton Collegiate Institute.  
 Pool, J. I.—Strathroy High School.  
 Pratt, H. O. E.—Ottawa Collegiate Institute.  
 Purtill, J. M.—St. Catharines Collegiate Institute.  
 Riordon, C. C.—Port Hope High School.  
 Robertson, S. E.—Brantford Collegiate Institute.  
 Robinette, T. C.—Strathroy High School.  
 Rowans, W. L. H.—Walkerton High School.  
 Schmidt, O. L.—Berlin High School.  
 Scott, A. V.—Clinton High School.  
 Scrimger, A.—Galt Collegiate Institute.  
 Seymour, W. F.—Brantford Collegiate Institute.  
 Smith, G. A.—Clinton High School.  
 Spence, J.—Elora High School.  
 Sweet, E.—Brantford Collegiate Institute.  
 Teefy, A. F.—Hamilton Collegiate Institute and Assumption College, Sandwich.  
 Wade, F. C.—Owen Sound High School.  
 Walsh, J.—Oshawa High School.  
 Watkins, C.—St. Catharines Collegiate Institute.  
 White, Margaret—Hamilton Collegiate Institute.  
 Wiltse, G. B.—Brantford Collegiate Institute.  
 Wishart, D. J. G.—Brantford Collegiate Institute.  
 Wissler, H.—Elora High School.  
 Wright, H. J.—Toronto Collegiate Institute.  
 Wright, H. B.—Galt Collegiate Institute.  
 Young, D.—Hamilton Collegiate Institute.

## HONOUR LIST.

CLASSICS.—Class I—1, Dunn, H. L. ; 2, McGillivray, D., and O'Meara, A. E. ; 4, Sweet, E. ; 5, James, N. ; 6, Davis, E. P. ; 7, Caven, J. ; 8, Scrimger, A. Class II—1, Ball, E. ; 2, Bristol, E. J., and Henser, J. W. ; 4, Fraser, M. S. ; 5, MacMurchy, A., and Teefy, A. F. ; 7, Schmidt, O. L., and Wright, H. J. ; 9, Gordon, C. W. ; 10, Canniff, H. F. ; 11, Barton, S. G. T., and Young, D. ; 13, Walsh, J. ; 14, McIntyre, E. J. ; 15, Boulton, C. R. ; 16, Mickle, H. W. ; 17, Love, S. ; 18, Grant, A. ; 19, Creelman, W. F. W. ; 20, Morphy, W. F.

MATHEMATICS.—Class I—1, Barton ; 2, Ames, A. F. ; 3, MacMurchy ; 4, Langstaff, E. F., and Wright, H. J. ; 6, McDougall, A. H., and Seymour, W. F. ; 8, Clark, J. M. ; 9, O'Meara ; 10, Grant ; 11, Martin ; 12, Galloway, W. O., and Scott, A. T. ; 14, James ; 15, Kemp, C. C. ; 16, Kemp, F. W.

ENGLISH.—Class I—1, Wright, H. J. ; 2, MacMurchy ; 3, McGillivray, D. ; 4, Haig ; 5, Clark, and Dixon, A. E. ; 7, Wishart, D. J. G. ; 8, Bell ; 9, Teefy ; 10, Dunn, H. L. Class II—1, Sweet ; 2, O'Meara ; 3, Bingham, G. A., Caven, Grant and McKnight ; 7, Creelman ; 8, Macgillivray, J. ; 9, Bristol, E. J. ; 10, Kapelle, G. ; 11, Minchin, D. J. ; 12, Davis, E. P., McKim, W. E., and Spence ; 15, Love and Martin ; 17, Gordon, C. W., and Parker, T. ; 19, Riordon, C. C. ; 20, Wade, F. C. ; 21, Hamilton, A., Grierson, J. F., and Gunther, E. F. ; 24, Seymour and Walsh.

HISTORY AND GEOGRAPHY.—Class I—1, MacMurchy ; 2, Macgillivray, J. ; 3, Davis ; 4, Henser ; 5, Wishart ; 6, Love ; 7, Clark ; 8, Sweet ; 9, Wright, H. J., Bristol, Elliot, W. and James. Class II—1, Bingham and Corbett, L. C. ; 3, Creelman, Dixon, Johnson, W. H. and Scrimger ; 7, Miles, A. C. and McIntyre ; 9, Gordon, C. W. ; 10, Caven ; 11, Gunther, and Pool, J. I. ; 13, Bell, Hamilton, A., and Wissler, H. ; 16, Dunn, O'Brien, H. ; 16, Dunn, O'Brien, H. S., Teefy, Walsh, and Watkins, C. ; 21, Robinette, J. C. ; 22, Fraser and Morphy ; 24, Baird, J. ; 25, Bain, W. L., Gordon, D. G., Grant, Minchin, McGillivray, D., Schmidt, and Scott.

FRENCH.—Class I—1, James ; 2, Davis, and Wright, H. J. ; 4, Watkins ; 5, Kapelle ; 6, Bell, Miles, and McIntyre ; 9, Boulton, Macgillivray, J., Schmidt, and Scrimger. Class II—1, Gunther and McGillivray, D. ; 3, O'Meara and Riordon ; 5, Bristol and Teefy ; 7, Creelman, MacMurchy, Mickle, and Parker ; 11, Henser ; 12, Gordon, C. W. ; 13, Bingham and Minchin ; 15, Corbett and Wade ; 17, White ; 18, Dunbar, F. J. ; 19, Wishart ; 20, Sweet.

GERMAN.—Class I—1, James and Schmidt ; 3, Davis and Kapelle ; 5, Gunther ; 6, Scrimger ; 7, Macgillivray, J. ; 8, Henser ; 9, Bell ; 10, McIntyre and Watkins. Class II—1, Fraser ; 2, Corbett, O'Meara, and White, M. ; 5, Minchin ; 6, Creelman.

The scholarships have been awarded as follows:—



CLASSICS—H. L. Dunn, Welland High School.

MATHEMATICS—S. G. T. Barton, Toronto Collegiate Institute.

ENGLISH, FRENCH, GRAMMAR, AND HISTORY—J. Macgillivray, Collingwood High School.

GENERAL PROFICIENCY—1, A. MacMurchy, Toronto Collegiate Institute; 2, H. J. Wright, Toronto Collegiate Institute; 3, A. E. O'Meara, Port Hope High School; 4, E. P. Davis, Upper Canada College; N. James, Collingwood High School.

The following resolutions were passed by the Board of Examiners for the County of Haldimand at its last meeting:

1. That the County Inspector do not recommend to the Minister of Education the extension of any Third Class Certificate without the holder first undergoing the examination prescribed for Third Class teachers and obtaining the required number of marks.

2. That the subjects for Third Class be grouped as follows:

- (i.) Arithmetic, Algebra, and Euclid.
- (ii.) Grammar, Dictation, and Composition.
- (iii.) Geography, English Literature, and History, and that the minimum for pass be 30 per cent. on each subject, 40 per cent. on each group, and 50 per cent. on the whole.

C. Moss, Chairman.

The Stratford School Board hold an annual excursion for the school children and their friends.

The magnificent new High School building in London will soon be completed.

Barrie is to have a new High School; cost, \$5,766.

Napanee Public Schools have a registered attendance of 580, and an average of 441.

Stratford School Board have decided to pay the \$50 given by the Government for the support of the Model School to Mr. Dickenson, who conducted the school last year.

The report of Inspector Scarlett, of the County of Northumberland, states that the highest salary paid in the county to a male teacher is \$600, and to a female teacher \$450, the average salaries being \$430 and \$270 respectively.

At a recent session, the County Council of Lanark passed a by-law abolishing the High Schools at Smith's Falls, Carleton Place, and Pakenham. The two left in existence are those of Perth and Almonte.

Strathroy Public School seems to be a good training school for Public School Inspectors. No less than four of its head masters have received Inspectorships during the past three years, viz.:—Messrs. Deerness, East Middlesex; Carson, West Middlesex; Barnes, East Lambton, and now Mr. Maxwell, of South Essex.

The Stratford High and Public Schools are in a very satisfactory condition. The report of attendance at the High School for June showed a total on the roll of 97; average attendance, 83; against 82 and 71 respectively for the same month last year. The number on the roll of the Public School for June was 1,197; average attendance, 1,041, against 1,116 and 887 for the same month of 1877. At the recent promotion examinations, out of 631 candidates, 506 received the necessary number of marks to pass. Last year 584 were sent up, and 393 passed. The contract for erecting the new High School in Stratford has been awarded at \$7,582.

Dr. McLellan, High School Inspector, conducted the midsummer examination of the pupils of Loreto Convent, Lindsay, and expressed himself highly satisfied with the efficiency of the classes, particularly in grammar and arithmetic. At the distribution of prizes, Father Stafford stated that since the institution had opened there had not been a single case of sickness among the pupils or the members of the sisterhood. He attributes this very largely to the excellent ventilation of the building—a matter that had been carefully attended to in its construction.

The following are the names of the second year prize winners at the close of the spring term of the summer session of the Ontario Agricultural College. The names follow in order of merit:

Agriculture—First-class honors: A. Nicol, A. Fyfe. Second-class honors: G. White, J. Clark.

Horticulture—First-class honors: A. Nicol, L. Hartshorne, F. Torrance, L. Tuole, A. Fyfe. Second-class honors: E. W. Carey, J. Clark, G. White.

Economic Botany—Second-class honors: W. Stewart.

Entomology—Second-class honors: A. Nicol, L. Hartshorne, F. Torrance.

Analytical Chemistry—First-class honors: W. Stewart, J. B. Warren.

Veterinary Materia Medica and Therapeutics—First-class honors: Torrance, Nicol, Hartshorne. Second-class honors: Stewart, E. W. Carey.

According to an announcement made in the Queen's College Calendar for 1878-79, that institution will hereafter accept the Intermediate High School examination as a substitute for the ordinary matriculation, except that an additional examination in classics is prescribed for all candidates, and that candidates for honors must take the regular work. Victoria College took a similar step last year, and now that these two learned bodies have gone so far, why should the Law Society and the Ontario Medical Council decline to follow them? It will hardly be contended that a higher standard of entrance is necessary for either law or medicine than for arts, and in point of fact no higher standard is laid down by the corporations in question. Uniformity is urgently needed for the sake of the High Schools.—*Globe*.

The County Council of Wentworth, having declined to make a grant in favor of the County Model School, Mr. G. W. Johnston, Principal of the school, wrote to the Minister of Education in regard to the matter, and received the following reply:

Toronto, 20th June, 1878.

MY DEAR SIR,—I am in receipt of your letter of the 17th inst. with reference to the Wentworth County Model School which has been established in the Public School of which you are the Head Master. The County Council should have made on its part the requisite provision for aiding this Model School, as one of the County institutions, just as other county expenditures. I did not make this obligation imperative, feeling assured that all County Councils would recognize their duty in this respect. I regret to say that the old-settled and wealthy County of Wentworth is the only county in the Province which has definitely refused the small amount necessary for its County Model School. I do not propose to relax the Regulations as to the Third Class Certificates in any respect, and will, next Session, ask the Legislature to make this duty of the County Council compulsory. The location of the School in the City of Hamilton is necessary for the educational interests of the county, and the County Council might as well refuse to support the Jail, Court House and other County Institutions in the same city. Sums coming from the Department and from the county are both intended as compensation to the Principal and Teachers for the extra work entailed upon them in discharging these additional duties. In some counties the County Council have increased their contributions so as to make it unnecessary for the Head Master to do more than supervise the classes of his school, and thus to enable him to devote the greater part of his time for Model School purposes. In the newer counties there is a more intelligent appreciation of these facilities for promoting the efficiency of Teachers than is to be found in your county, which appears to be wedded to old views as to the non-necessity of qualification in Teachers. Both Teachers' Associations and County Model Schools are an essential part of our system for training Teachers, and nothing can be devised which is so economical and at the same time so efficient.

It is almost unanimously recognized that by contrast with the expenditure in other countries for training Teachers, our expenditure is almost nominal—about eight dollars being the cost of training a candidate for a Third Class Certificate and about thirty-four dollars for a Second Class Certificate, in the Provincial Normal Schools.

Yours very truly,

ADAM CROOKS,

Minister of Education.

G. W. JOHNSON.

The last half-year's average attendance at the Niagara High School was 31. Inspector Marling reports this school as steadily improving, and that music and drawing are unusually well taught by the Head Master.

The special course at Ontario Business College, Belleville, is largely attended by teachers, during the holidays. Twelve of the number are preparing, under Mr. W. E. Sprague, Principal of Northumberland Model School, for first and second class certificates.

SOUTH HASTINGS.—John Johnston, P. S. Inspector.—The average salary paid to male teachers was \$425, to female teachers \$275.

It is very encouraging to know that the percentage of average attendance has been gradually increasing. It is higher during 1877 than for any previous year. I never found so many scholars in attendance as during my last two visits.

All the best teachers have public examinations in their schools, at least three a year. I am sorry to say that in the poorer schools they are less frequent. At certain intervals during the year every honest and conscientious teacher should be willing and prepared to show the ratepayers of the section the progress made by the pupils since the previous examination, and teachers can do much in this

way to foster a feeling in favor of school, and to lessen irregular attendance. When scholars are well taught and know the work gone over, they like to be examined. It is only in the poor schools that scholars dread examinations.

I have much pleasure in stating that in nearly all the schools the teachers have readings and recitations every Friday afternoon. These recitations give the scholars confidence in themselves, so that in after life they will be able to give expression to their opinions in public. It is believed there are no qualifications or accomplishments more useful or ornamental than good reading and speaking, and they deserve attention from the scholar and teacher in proportion to their high value.

There is not so much mechanical teaching as there was a few years ago. Scholars are taught more to think and use their own judgment. Teachers prepare their work for the school room. At the present time we have a large number of teachers who have been in the profession for some years. They set a good example to others who visit their schools. I am sorry that we have not more of them, but their number is gradually increasing, and the establishment of model schools will do much to increase the number.

I am able to report that we have 50 libraries in our schools, an increase of 13 over last year. The number of volumes is 1,822, and it is hoped that before the end of the present year every school will have a good library.

I would respectfully call your attention to the following statistics, carefully and correctly prepared from the annual reports. As trustees paid for school purposes, during 1877, the sum of \$81,816.63, and as the whole number of pupils that attended the schools amounted to 6,067, the cost of teaching and maintaining the school for each registered pupil would be \$5.20. It would be a little less, as debts contracted in building school houses are in a few cases included in the sum. In Sidney the cost per pupil is \$5.28; in Thurlow, \$5.43; in Tyendinaga, \$5.25; in Hungerford, \$5.47; in Trenton Public Schools, \$4.60; in Trenton Separate Schools, \$3.30; in Mill Point, \$3.30. In Trenton and Mill Point the rate per pupil only includes the salary of teachers.

Twenty teachers were trained in the Model School during the session of six weeks, and nearly all of them are doing their work efficiently and to the satisfaction of trustees and ratepayers.

Our Institute is still in successful operation, and has done a good deal to help the teachers in their work. Nearly all the good teachers attend regularly the third Saturday in every month, but I am sorry to say that many who would be much benefitted by the lectures given are usually absent. We got a grant of fifty dollars from the Department, and with this money we intend to purchase books for our teachers' library.

**NORTH HASTINGS.**—*Wm. McIntosh, P. S. Inspector.* Since 1871, more than 60 school houses have been erected in the Riding. To those who are acquainted with the recent establishment of many of the settlements, and with the rough and infertile character of the district as a whole, such an exhibit speaks volumes for the energetic and, in many cases, self-denying efforts put forth.

The average expenditure, per enrolled pupil, was \$4.99. In 1876 it was \$4.47, and in 1872, \$2.29.

There were employed during 1877, 49 female and 86 male teachers. Of these 9 held Provincial second class certificates, 42 third class certificates, 2 first class (old county board), and 82 had special certificates.

The highest salary paid to any teacher during the year was \$550 (in Madoc village), and the lowest was \$192.

Eighty-five teachers are at present employed in the public schools of North Hastings. Of these only 21 have been in the positions they now occupy for more than a year. No amount of watchfulness, energy, and ability will keep schools in an efficient condition while this state of affairs obtains. It wastes the financial resources of the section, deprives the teacher of one of the most effective incentives to industry, and is ruinous in its effects on the children, for whose benefit the schools exist.

I have been much gratified by the decided progress made, during 1877, by a number of our schools, and by the hopeful signs of improvement exhibited by others. Much of this is due to the increased interest in the schools evinced by Trustees, and to the greater care taken in the selection of Teachers.

The engagement of teachers is undoubtedly the most important work Trustees have to perform. The teacher makes the school, and what is of vastly more importance, a pupil's subsequent success or failure in life, and the ease or difficulty with which he will pass through it, depend to a much greater degree than many are ready to admit on his teachers.

## QUEBEC.

The Hon. Mr. Joly, at St. Hyacinthe, had said that the Government would attempt to raise the salaries of teachers by reducing the amount given yearly for inspection. Whether this promise was inherently impossible of fulfilment, or whether the Government were unable to consider the matter amid the hurry of a short session, does not appear. At any rate, the usual amount of \$30,000 appeared in the estimates for school inspection. Mr. Chapleau, accusing the Government of breaking its direct engagements, proposed a vote of censure, which, while condemning the Ministry of the Hon. Mr. Joly, would have allowed Mr. Chapleau to follow the exact course of public policy which he was seeking to condemn. The motion was lost on a division. It is doubtful whether anything can be done by Act of Parliament to raise permanently the salaries of teachers.

At the last meeting of teachers and pupil teachers in connection with the Laval Normal School, notice was given that at the next meeting a discussion would take place on the question, "Should as much time be spent in school on the study of English as on the study of French?"

From the Annual Report of the McGill College to His Excellency the Governor-General, it appears that the total number of students in the three faculties of Law, Medicine & Arts, in the year ending December, 1877, was 425. The students in the Morrin College, 46. The teachers in training in the Normal School, 125; the pupils in the Model School, 350. The number of degrees conferred, 61. The total expenditure, \$49,607.40.

There seems to have been some discrepancy in the mode of marking for reading adopted by the various Boards of Examiners throughout the Provinces. Some have given full marks: others find candidates very defective. It is recommended that style of reading, as well as accuracy, be taken into account. The Protestant Committee of Public Instruction also remark that it is imperative that the fees should be prepaid. It seems that candidates in some places have been allowed to attend the examinations, and if they obtained a diploma, to pay the fee, while no fee was forthcoming if they failed to pass. It is also suggested that specimens of the examination papers be published occasionally in the *Journal of Education* for the information of candidates. At the last meeting of the Committee, it was moved that the Superintendent be requested to pay the travelling expenses of Mr. Weir and Mr. Emberson, the Inspectors of Model Schools and Academies. Also that the Committee urge on the Government the desirability of increasing the grant for the purpose of school inspection, with the hope that no modification of the grant will be made without consultation with the committee.

A memorandum on the school at Esquimaux River, Labrador, asking a grant from the Elementary Education Fund, was submitted by Dr. Dawson, and referred to the Superintendent.

All French teachers of Protestant Schools are expected to know English as well as their own language.

It is stated that the public examinations in the French schools and convents will be discontinued in future.

## NOVA SCOTIA.

The examinations of the Public Schools of the city of Halifax began on the first of July and lasted a fortnight.

The corner stone of the new High School building, at the corner of Brunswick and Sackville streets, was laid on the 17th ult., with masonic ceremony. It had been proposed that the Superintendent of Education should be invited to lay the corner stone, and many think it would have been only paying that official a just compliment, but the Masons on the Board carried the day, and Col. Laurie, Grand Master of Nova Scotia, accompanied by be-aproned, be-scarfed, be-jewelled gentlemen of the Grand Lodge, Royal Arch Chapter, and subordinate lodges, went through the process of declaring the stone properly laid. All the children attending the public schools were present in their best bibs and tuckers, and sang at different times as the ceremony progressed. Lieutenant-Governor Archibald, the Judge of the Supreme Court, Mayor Richey, the Commissioners of Schools, and a very large gathering of citizens were present, as were also the architect and the builder of the new structure—Messrs. H. F. Busch and Robert Brunton. Mayor Richey delivered, or rather began to deliver, a very appropriate address, but a sudden downpour of rain forced him to cut it short, and the large assemblage speedily dispersed.

Wolfville has also been laying corner stones. On the 9th there was a very large gathering on the slope of the College Hill to

witness the ceremony of formally laying the corner stones of the new College and of the new Ladies' Seminary. The former was first laid, Rev. S. M. DeBlois, Secretary to the Board of Governors, opening the proceedings with prayer, after which Rev. Dr. Sawyer, President, delivered an address, in which he went over the steps taken to rebuild after the terrible fire last December. Rev. Dr. Crawley also spoke at length. The stone was laid by Mr. Avar Longley, M.P.P., Chairman of the Governors, and Rev. Dr. Cramp offered up the dedicatory prayer, and delivered an address. The new College building will be 138 feet in length, with towers on each end, giving it a total frontage of 154 feet, the depth in the wings is 68 feet. The first floor will be devoted to class-rooms and assembly halls for the students of the College and the Academy, the latter to occupy the east end of the building. The second floor will have rooms for the Library and Museum, the former 28 x 40, the latter 28 x 44, both with ceiling 20 feet in the clear, and galleries. It will also contain a large audience hall, with gallery capable of seating probably 700 people.

The corner stone of the Ladies' Seminary was laid by Mr. I. W. Lovitt, of Yarmouth, who has all along taken a great interest in the institution. The new building will be a great improvement on the old. The cellar will be constructed the entire size of the building, that is 44½ x 90. In this will be three large tanks for storing water, and drains of various descriptions to meet the wants of the building. In the basement story, in the N. W. corner, will be the dining hall, 22 x 30, accommodating seventy five boarders. In the N. E. corner will be a large closet for the table crockery, and also a serving room conveniently fitted up. Adjoining this is the kitchen, 24 x 17, to be fitted up with ranges and other conveniences. In the S. E. corner will be the servants' rooms. Opposite these will be a storeroom and the place for the heating apparatus of the building. Alongside of this will be the laundry and drying room. The entrance from the outside to the basement will be at the south end. The entrance to the first floor will be at the middle of the west side. A corridor will run from one end of the building to the other, with stairways at each end leading to the floors above. On the first floor will be two parlors, with a bedroom attached to each; four parlors, with two bedrooms attached to each, and a reception room, 24 x 17, with music room connected by folding doors. The second floor and the attic are occupied chiefly with parlors and attached bedrooms, but on each of these floors is a bath room and two or three music rooms. The rooms thus described are thought to be sufficient to give comfortable accommodation to at least fifty pupils. Four chimneys will be constructed, and ample provision will be made in connection with these for the ventilation of all the rooms in the building. A lift, to be constructed of brick, will reach from the basement to the attic floor, by which all heavy articles will be raised and lowered. The contract does not provide for heating and lighting apparatus; but it is hoped that means will be furnished to warm all the students' rooms with hot water and light them with gas. The contract price for the erection and completion of the building is \$13,821.

The Encœnia of King's College was a great success, a large number of visitors being present. Their Excellencies Vice-Admiral Sir E. A. Inglefield, K.C.B., and Lieut. General Sir P. A. Mc Dougall, K.C.M.G., both spoke.

Professor Oram, M.A., B.E., of King's, has gone to England for the vacation.

Professor How, D.C.L., of King's, has published a very interesting paper on the Strange Herbarium of East Indian Plants in the Museum of King's College.

The examinations for first B.A., first LL.B., second LL.B., and first B.Sc., of the University of Halifax, began on the 16th ult.

#### NEW BRUNSWICK.

A great deal of attention is being devoted to the establishment of Teachers' Institutes, in accordance with the new regulations of the Board of Education. The plan is working admirably well, and the lectures of Dr. Rand, Chief Superintendent of Education, together with his personal supervision of inauguration, is infusing enthusiasm into the teachers on the subject.

The following are the principal features of the regulations under which these Institutes are formed.

"Whenever ten or more teachers within an Inspectoral District shall make written request to the Inspector in such behalf, a Teachers' Institute shall be formed for such Inspectoral District, the exclusive object of the Law and Regulations of the Board of Education for the conduct of all work, which shall be to promote the efficient operation of the means contemplated by the regulations

pertaining to Teachers of Schools. To this end, lessons illustrative of method and management may be given, conversations and discussions had, papers read, and special instruction given in any subject of the School course. All subjects and discussions foreign to the practical duties of the Teacher's office are to be avoided, and all of the exercises shall be as practicable as possible. The Teachers' Institute shall be composed and directed as follows.

"1. The Inspector and all residents of the Inspectoral District holding valid licenses from the Board of Education shall become members of the Teachers' Institute on enrolment and annual payment of such fee, not exceeding one dollar, as the Institute may deem proper.

"2. The Teachers' Institute shall annually elect from among its members a President, Vice-President, and Secretary-Treasurer. The Committee of Management shall consist of the foregoing officers and two other members annually chosen. The committee shall determine the exercises for each meeting and the order of business, and the programme shall be duly forwarded by the committee to the Chief Superintendent for insertion in the *Educational Circular* as early before each annual meeting as possible.

"3. On giving written notice of at least one week to the Board of Trustees, and due notice to the pupils, Teachers shall be entitled to be absent from their Schools for the purpose of attending the sessions of the Teachers' Institute during the days provided for herein.

"4. The Teachers' Institute shall meet annually, during either the Winter or Summer Term, and at such place and time as the Institute may from year to year determine. The sessions shall be held both morning and afternoon, and shall continue through two days: those on the first day shall begin at 10 A.M., and on the second day at 9 A.M. When a suitable room can be secured for the purpose, it is recommended that on the evening of the first day's meeting a public lecture (whose object shall be in harmony with that of the Institute) be delivered, at 7 o'clock, by the Chief Superintendent (when his duties will permit), the Inspector or other suitable person, as the committee may determine.

"5. The President shall as soon as practicable after the close of the sessions of the Teachers' Institute transmit to the Chief Superintendent, in the form to be supplied for that purpose, a list of the Teachers present at the same and the attendance at each session, and in the semi-annual apportionment of the County Fund and disbursement of Provincial grants the Chief Superintendent shall, in every case in which the Teacher has attended all the sessions of the Institute, allow to the Board of Trustees their proportion of the County Fund for the two days as if the School or department had been open, and to the Teacher the Provincial grant as if he had been engaged during the two days in teaching the school or department under his charge. \* \* \* \* \*

"6. In case it shall appear to the Board of Education that the Teachers' Institute in any Inspectoral District is inefficiently conducted, or that any object foreign to that contemplated herein is entertained at its gatherings, all privileges herein accorded in behalf of such Institute shall be withdrawn.

"7. The time, place and programme of the first meeting of the Teachers' Institute shall be determined by the Inspector, in concert with such of the Teachers making written request for its formation, as he may deem necessary; and he shall notify all the Teachers within his Inspectoral District of the same at least one month before the meeting. Special care should be taken to ensure prompt organization and profitable sessions."

#### MANITOBA.

The Report of the Superintendent of Protestant Schools for 1877 has been published. It is an interesting document. The following are selections from it:

It affords me pleasure to be able to state, that very substantial progress has been made in educational matters since my last report was submitted.

The number of Protestant Schools in operation during the whole or portions of the past year was . . . . . 38

The number of children in attendance . . . . . 2027

And the aggregate average . . . . . 934

Two handsome and costly school-houses have been erected in the city of Winnipeg, and a suitable one in each of the following districts, viz.: North St. Andrews (not finished), Park's Creek, Sunnyside, Burnside, Meadow Lea, and Grassmere; while preparations for building are going on in several other districts.

The legislative grant for education for 1877, was \$8000. This is a very small sum to meet the demands that have been made upon

it. There is little hope of any material increase to this sum as long as the revenue of the Province continues as small as it is at present, and yet the demands made upon the Government grant will undoubtedly be much greater year by year. There are a number of school districts now without schools where they will be opened shortly; and many localities not as yet organized into school districts are initiating steps which will end in organization. Moreover, the Mennonite settlers, who have a school population of about 1,600, have quite recently applied to me for information as to the steps to be taken for receiving their share of the legislative grant. Under all these circumstances it is most earnestly to be hoped that the petition on the subject of the lands reserved in this Province for purposes of education, which the Board of Education has just addressed to His Excellency the Governor-General in Council, may be favorably received and action taken upon it, so that there may at once be at the disposal of the Provincial Government an additional sum with which adequately to supplement the extraordinary efforts which the Province at large is making in order to bring within the reach of all the rising generation the priceless blessings of education.

I cannot close my report without an expression of the satisfaction I feel in the establishment, by an Act of the Legislature, of an un-denominational Provincial University, round which the colleges of the various denominations are gathered. The people of this Province may be pardoned if they feel proud of accomplishing that which leading men almost everywhere have very earnestly desired, but which they have in vain tried to bring about. Our denominational colleges have been doing an excellent work, and doubtless their efforts will receive fresh impulses year by year; but it is not too much to hope that the efforts of all classes and religious bodies throughout the country will be directed towards this interesting Institution, and that it will be so patronized and fostered as to enlarge with the requirements of the Province, and be able to supply that culture which many of our young men have hitherto sought in the mother country or in the older Provinces of the Dominion.

I have the honor to be,

Your Excellency's most obedient servant,  
W. CYPRIAN PINKHAM,  
Superintendent.

## Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and brief accounts of meetings held.

### WATERLOO.

The Association met in the Central School, Berlin, on Thursday and Friday, July 4th and 5th, 1878, at 9 o'clock, a.m.

PROGRAMME.—*First Day*.—1. Grammar, Mr. G. A. McIntyre; 2. Essay, Miss L. Ziegler. 3. Drawing, Mr. R. O. Dobbin. 4. Thoroughness in Teaching, Mr. D. Bergy. 5. Should Erection of Teachers' Residences be made Compulsory upon Trustees?—Mr. S. Eby. *Second Day*.—1. Algebra, Mr. D. Forsyth, B.A. 2. Our School Life, Miss A. Babcock. 3. Object Lessons, Mr. G. Copeland. 4. Essay, Miss L. Tit. 5. Schools of Germany, Mr. A. Muller. 6. Report of Library Committee. 7. Election of Officers, appointing of Delegates and Auditors. On the evening of the 4th, Hon. Adam Crooks, Minister of Education, delivered a Public Lecture in the Town Hall, Berlin.

S. S. HERNER, Secretary.

THOMAS PEARCE, President.

THE RUSSELL TEACHERS' ASSOCIATION.—The Association met at Duncanville on May 31st and June 1st. The attendance was good. Great interest was manifested, owing chiefly to the presence of Educationists from Ottawa. The Institute was the most successful ever held in the County. Mr. J. Summerby, Head Master of Kingston Model School, was elected an Honorary Member.

Programme of work done: Fractions, W. H. Carson; best methods of Parsing, N. G. Ross; Geography, J. W. Macutcheon; Arithmetic as far as Reduction, J. W. Ross; Analysis, Peter Talbot; History to a Third Class, Wm Burns; a paper on Music, Professor Workman; Geometry and Mensuration, A. Smirlic; Cramming, Joseph Martin; Algebra to beginners, B. R. Cochrane; English Literature, F. R. Powell.

On Friday evening, Rev. Thomas Garrett, B.A., I. P. S., Russell Co., delivered a lecture on "The Teachers' Vocation" to a large audience, after which several dialogues, recitations, songs, &c., were given, reflecting much credit on those who took part in them.

Yours, &c.,

NILES G. ROSS, Secretary.

Bear Brook, June 11th, 1878.

WEST VICTORIA.—A very successful Teachers' Convention was held at Woodville on Thursday and Friday, May 30th and 31st, Mr. H. Reazin,

Public School Inspector, in the chair. In the morning of the first day the subjects were Mental Arithmetic by Mr. Reazin, and Geometry by Mr. Brown, Head Master of the Oakham High School. In the afternoon the following officers were appointed: President, H. Reazin; Vice-President, Rev. J. L. Murray; Secretary-Treasurer, C. McKoracher; Managing Committee, Messrs. Brown, of Oakwood, Wood, of Fenelon Falls, Campbell, of Little Britain, Cundell, of Cameron, and McGill, of Manilla; after which Mr. McKoracher took Grammar, Mr. Cundell, Algebra, and Mr. Wood, Arithmetic, (unitary system). In the evening Mr. Knight, Public School Inspector for East Victoria, lectured on Public Examinations, at the close of which he gave as a Reading, "Byron's Ocean," and as a Recitation, "Scott's Love of Country," after which the Rev. J. L. Murray lectured on the "Responsibilities of Teachers." The Question Drawer was then taken up. On Friday morning Mr. Knight read a paper on Music, illustrating transposition of scales by diagrams. Mr. Shaw, Head Master Omence High School, read a paper on Conventions, when the Convention adjourned for dinner. In the afternoon Mr. McFall, Head Master of the Lindsay Model School, took the subject of Drawing. Most of the subjects were followed by discussions, some of which were highly animated and interesting. The attendance was large throughout, and the greatest interest was kept up to the end.

SOUTH GREY.—The teachers of this Division met in Durham on the morning of Thursday, May the 30th; the P. S. Inspector, W. Ferguson, Esq., occupying the chair as President of the Association.

The President delivered an opening address replete with suggestions as to the methods of promoting the continued efficiency of the Association.

The following officers were then elected: President, Mr. Ferguson, P. S. I.; Vice-President, Mr. R. N. Currie; Secretary Treasurer, Mr. N. Grier; Managing Committee, Messrs. J. C. Bain, D. Allen, and Messrs. Black, McMillan, and Gaudin.

In the afternoon Mr. Alexander Ferguson read an admirable essay on "School Organization," after which two young ladies, pupils of Mr. R. N. Currie, Durham Public School, gave some readings, which reflected great credit on them and their instructor. Mr. G. Threadgold then gave an address on "Spelling," and was followed by Mr. J. S. Campbell on "Spelling Reform." Both gentlemen advocated the phonetic method. Mr. C. McArthur gave a very practical address on "How to secure Regular Attendance at School." Much interest was aroused by this address.

On Friday morning Miss McMicken read a paper on "Drawing," which contained so many valuable suggestions that the Association decided to have it published.

Messrs. D. Allan and N. Grier were appointed delegates to the meeting of the Provincial Association at Toronto. The Association resolved to pay the expenses of their delegates, and instructed them to press the claims of teachers to a retiring pension after an active service in the profession of 25 years, in accordance with the views expressed at the time of the last Convention by the Hon. the Minister of Education.

MUSKOKA.—The semi-annual Convention of the Muskoka Teachers' Association was held in the school house, Bracebridge, Thursday and Friday, 20th and 21st of June. The Convention was well attended, about forty members of the Association being present. H. Reazin, Esq., P. S. I. and President of the Association, occupied the chair. The Convention was opened with prayer by Rev. J. S. Cole, after which the President delivered a short address showing that the success of the meeting depended much upon the hearty co-operation of each member of the Association. The Rev. J. Clark, teacher, then read a very able and eloquent essay on English Grammar, followed by Mr. Magill, H.M. of Bracebridge School, who read a very full and critical essay on the Potential Mood, showing that grammarians erred by placing it among the moods of the verb. Mr. Clark defended the potential mood, and thought it should not be discarded. Mr. White, of Muskoka Falls, delivered an address on teaching map geography. Mr. Drummond, H. M. of Gravenhurst school, read a very eloquent and suggestive essay on English History, showing that the teacher should endeavor to teach lessons of patriotism and virtue by directing the mind of the student to the principles underlying the great events in history. Rev. J. Lindsay addressed the Convention on "English Literature" in which he referred to the history of the English language and the various changes that have taken place in the language at different periods, and pointed out the ill effect of reading the trashy literature too generally furnished to the youth of the country. Rev. J. S. Cole, then treated the subject of "Teaching Euclid," and advocated the disuse of some of the technical terms used in English Elements. Mr. T. S. Cliphsham took up the subject of "Teaching Reading," illustrated his method of teaching it, and read several pieces from Tennyson and other authors. Mr. Magill advocated and illustrated the "Look and Say," and Mr. Reazin defended the "Mixed method" of our school books. W. E. Hamilton, B.A.T.C.D., read a

very able essay on the "Relation of Journalism to Education," showing that the press aided in promoting education and that education reacted by elevating the standard and character of the public journal. Dr. Bridgland then read a very able and instructive essay on "Hygiene." In the discussion which followed this essay, that part of hygiene relating to the ventilation of schools was thoroughly discussed by Messrs. Magill, Clark, Reazin, and others. Much of the success of the Convention was owing to the presence of Hon. A. Crooks, who addressed the Convention and pointed out some of the advantages to be derived by teachers from such Associations. The hon. gentleman delivered a public lecture on the evening of the 20th, which was largely attended and well received, the lecturer being frequently and loudly applauded by his audience. At the close of the lecture the thanks of the audience were most cordially tendered to the hon. gentleman. The thanks of the Convention were also tendered him on motion of Mr. Magill, seconded by Rev. J. S. Cole, for his kindness and interest in connection with the Convention and the cause of education. A large number of important and suggestive questions were received and answered through the question drawer. Officers elect, H. Reazin, President; A. Magill, Vice-President; T. White, Secretary and Treasurer. Messrs. Drummond, Clark, Dowler, Hey and Cliphsham, Committee of Management.

**NORTH HASTINGS**—The Association met at Madoc on June 8th, 1878. The President, Mr. Mackintosh, I. P. S., in the chair. The meeting was well attended, and the discussions that took place were particularly interesting.

Mr. S. Curtis analysed a number of difficult sentences, parsing the more difficult words.

Miss Jessie Riddell read an admirable essay on the "Method of teaching Grammar to junior classes." She pointed out that the pupil should be led by appropriate examples and suitable questions to understand the duty each part of speech does in a sentence; to give in his own words a definition of it, which (if necessary) should be made more concise by the teacher, and then give the pupil the name of the word he has defined. She dwelt on the necessity of Grammatical Analysis being taught the pupils at an early stage. The essayist, in conclusion, said success in teaching Grammar (as in other subjects) depended largely on thorough and frequent reviews.

Mr. C. Fuller next introduced a most interesting discussion on the "Method of conducting a public examination of a school." The principal points brought out in the discussion were: That to render the examination interesting, the most of the time should be spent on those subjects which all the visitors would consider of value to one in the business transactions of life; therefore a considerable time should be given to Reading and Spelling; in Arithmetic the questions should be mainly confined to Computation of Accounts, Interest, Dividends, Exchange, &c., little or no time being given to intricate problems which have no practical application; in Geography, the questions should touch particularly on our own country, on local geography, on routes of travel, and on those countries with which we have business relations. The correction of common errors in the construction of sentences should form an important part of the exercises in Grammar. Well-drilled classes in Mental Arithmetic, and a few recitations, well rendered, will revive the interest on the part of the visitors should it begin to flag.

Mr. Mackintosh, I. P. S., explained his "Method of teaching Tablets." While embracing the principles of the "Whole Word Method," it is in many respects different from, and superior to, it. Its leading principle is to make the pupil thoroughly understand the difference between a *thing* and the *sign* which stands for the thing. His method of teaching the *real* sounds of the letters is an easy and most excellent one.

Mr. Mackintosh explained the "Method of teaching Fractions." He insisted on their being taught inductively, and showed that if so taught, there were no very great difficulties to contend with. To master each step thoroughly before proceeding to the next was essential to success.

Mr. S. Curtis was appointed delegate to the Ontario Teachers' Association.

**LAMBTON**.—The Semi-annual meeting of the Teachers' Association of Lambton, No. 1, took place in Forest, on the 9th and 10th of May. The attendance was very large, there being about 100 teachers present, besides a large number of others who thus manifested their appreciation of the teachers' work, and their interest in education. At 9 o'clock on Thursday, the President, Mr. Barnes, took the chair.

After a preliminary business meeting, A. E. Wallace, Head Master of Arkona Public School, read a paper on the subject of Grammar, which was full of instruction and manifested very much thought on the part of the essayist. A very lively discussion then took place; many questions were asked by the members and answered by Mr. Wallace, who showed, by his readiness to answer, his thorough knowledge of the subject.

The President then discussed his method of keeping pupils profitably employed, and laid down as a maxim, that the teacher should have his

time table so constructed that every child, at every moment of the day, must be actively employed at some one of those duties for which the school is properly intended.

After some discussion the Association adjourned, to meet again at 2 o'clock, when Mr. Beatty, of Toronto, was solicited to discuss the teaching of writing, which he did in a very able manner, showing that he thoroughly understands the subject, and his hints will, doubtless, be very valuable to teachers in their own schools.

A paper on Monthly Examinations was then read by Mr. White, Principal of Watford Public School, after which the subject was discussed and many valuable suggestions were thrown out.

Dr. McLellan having arrived, was introduced to the Association by the President in a few appropriate remarks, and gave an interesting lesson on Arithmetic. He also discussed, in a very able manner, the subjects of Algebra, Reading, and English Literature, and the teachers all expressed themselves as highly pleased and benefitted by his instruction.

On the evening of Thursday, Dr. McLellan delivered his very popular lecture on "This Canada of Ours" to a large and appreciative audience. During its delivery he received well-merited applause, and at its close a hearty vote of thanks was tendered to the lecturer.

J. S. Carson, Public School Inspector, West Middlesex, discussed the formation of time tables, and was questioned very closely by the members, but he showed by his readiness to answer, that he had thoroughly mastered the principles to be regarded in the formation of time tables.

Thus closed one of the most successful Association meetings ever held in the Dominion, and the teachers all returned to their homes with the full conviction that its success was mainly due to the excellent assistance rendered by Dr. McLellan. He carries with him the best wishes of the teachers, and also of the people in the vicinity of Forest, by whom he will be heartily welcomed on any future occasion.

## Readings and Recitations.

### THE INFIDEL AND THE QUAKER.

Whoever travels in a coach,  
Where right gives license to encroach,  
To birds of varied feather,  
Will meet with them in every station,  
Without regard of creed or nation,  
Whom chance has brought together.

Apropos—here's a case at hand;  
The muse has but to wave her wand,  
And friends will ne'er forsake her.  
It happened, as the story goes,  
That fate once brought in contact close  
An Infidel and Quaker.

Well, on they chatted for awhile,  
And told the tale and raised the smile,  
To pass the time the faster;  
And friends till now they would have been,  
And smiled and chatted on, I ween,  
But for a sad disaster.

The Quaker introduced discourse  
Of moral cast—and this, of course,  
The sceptic soon offended;  
He smiled no more, but quickly went  
To prop his cause by argument,  
Which soon the Quaker ended.

For he, well armed in each attack,  
Parried his blows, and gave them back  
With infinite precision;  
And stood invulnerable still,  
Defending with his utmost skill  
His well-matured decision.

"What," said the Infidel at length,  
"You don't believe that David's strength  
Could e'er have hurl'd the stone  
Which sank within Goliath's head,  
And laid the mighty giant dead,  
Unaided and alone?"

"Yes," quoth the Quaker, "I believe,  
And all the word of God receive  
As sacred and divine;  
No case can be more clear than this,  
The giant's head must break—if his  
Were half as soft as thine."



## Answers to Correspondents.

TO CORRESPONDENTS.—All requests for information, as well as communications intended for insertion in the *SCHOOL JOURNAL*, should be accompanied by the name and address of the sender.

ASPIRANT.—(1.) If you have taught, as you say, in Ontario for eight years, you need not attend the Normal School before writing for a First Class Certificate. Had you asked advice instead of information, the answer would have been "Go, if possible." (2.) The percentage of marks necessary for First Class Certificates is not definitely fixed. You must obtain at least 50 per cent. of the total number of marks before you can obtain the lower grade of a First-Class Certificate.

### PERSONALS.

The teachers of South Grey have presented their Inspector, Mr. Ferguson, with a handsome gold watch, as a token of their appreciation.

D. D. Hay, M.P.P., has offered the Listowel High School Board a site for a new building *gratis*.

The last meeting of the Peterboro' Teachers' Association was addressed by W. H. Scott, M.P.P.

The Rev. A. Burns, D.D., LL.D., has been appointed Principal of the Wesleyan Female College at Hamilton.

At the closing examination of the Ingersoll High School, the pupils presented the retiring Principal, Mr. T. M. McIntyre, M.A., LL.B., with a silver water pitcher, goblets and salver.

Mr. D. P. Clapp, B.A., received a handsome testimonial from his pupils before leaving Stratford.

Mr. O. Hagan, Public School teacher of Trenton, has offered a silver medal to be competed for by third-class candidates at the next examination for teachers' certificates in South Hastings.

Mr. A. J. Bell, B.A., of Toronto University, has been appointed assistant in St. Thomas High School. Mr. Bell graduated in June, taking first-class honors in Classics, English, French, German, Italian and History, besides carrying off the Prince's prize, the highest honor that a student can achieve, with his degree.

Mr. M. A. James, formerly a very successful teacher of Baltimore, has purchased the *Canadian Statesman*, Bowmanville. Mr. James has devoted considerable attention to journalism, and will no doubt make the *Statesman* a live, practical paper.

Mr. Ed. Ransford, LL.D., Trinity College, Dublin, and St. John's College, Cambridge, formerly on the editorial staff of the *Leader*, will for the future personally conduct the select Classical School, 80 Wellesley Street, Toronto; of which the Rev. George H. Moxon, till recently rector of St. Philip's, Spadina Avenue, was the founder and late proprietor.

To the Editor of the *Canada School Journal* :—

DEAR SIR,—Perhaps you may find a corner in the *JOURNAL* for a suggestion or two from a constant reader and ex-member of the "fourth estate." Teachers whose hearts are in their work find little time for promiscuous reading, after they have duly prepared themselves to go before their classes. Hence, when they take up a newspaper or magazine they wish to get as much as possible out of it in the short time they can afford for its perusal. The *CANADA SCHOOL JOURNAL* commends itself to the writer for the excellence and variety of its contents, all bearing directly on the interests of education. It has passed successfully through the ordeal of its first year's trial, and coming out in its second volume enlarged and improved, the prospect of a bright future awaits it. But in order that its usefulness may be extended as widely as possible, would it not be well for the profession to consider how much each inspector, trustee or teacher can and ought to do to make the *JOURNAL* the medium for the interchange of views and opinions on all educational topics? If this enterprise were but encouraged by the profession as heartily as it should be, instead of a monthly issue, it could be made a weekly, and thus rendered a convenient means of giving speedy publicity to everything of interest in the edu-

cational world, while securing at the same time all the benefits of a monthly journal in the way of well-matured editorials, &c. The patrons of the *JOURNAL* have only to pour in their subscriptions and use liberally the advertising columns to warrant the additional expense required for a weekly publication. A. A.

### BOOK REVIEWS.

OFF ON A COMET. *Translated from the French of Jules Verne.* Published by Claxton, Remsen, & Haffelfinger, Philadelphia.

This is a very beautiful edition of a most interesting and instructive story. The binding and letterpress are most excellent, and the thirty-six engravings with which it is illustrated are very fine. The work is a sequel "To The Sun," by the same author, and fully sustains the reputation of its writer. The reader has presented to him a very large amount of information on Astronomy and Physics in a most attractive and purely incidental manner. The colony of twenty-three who were swept from the earth's surface to that of the Comet of Gallia, and flashed through space for two years, had a most exciting trip. Improbable as the whole is, the story seems to be perfectly natural. Every difficulty is met in a scientific manner, from the first contact of Gallia with the earth until her return, so exactly calculated by the immaculate "Professor," who holds such a prominent position throughout the story. No one who reads the book can ever forget the Professor, or Dutch Isaac, or Jolly Ben Zouf. Nothing could be livelier or more exciting than the description of the balloon ride during the hour preceding the second contact of Gallia with the earth. The grand appearance of the dear old world as it approaches them at the rate of a thousand miles a minute, the brilliancy and grandeur of the sight of the comet bursting beneath them, their terror at the thought that perchance the bursting of Gallia may alter their course by even so little and prevent their reaching the earth's orbit at the exact moment necessary, and their final successful landing on the North of Africa, are so exciting as to be perfectly bewildering. He who could commence this chapter and lay down his book before finishing it, ought to be exiled on the next comet that calls at the earth in passing.

THE ACCOUNTANT. *For Public Schools and Academies.* By M. R. Power, M.A., author of "The Complete Accountant." New York, A. S. Barnes & Co.

This work, which, being neatly printed on good paper, presents a very handsome appearance, is eminently practical in its character, and would be a valuable addition to our list of school textbooks if some defects were remedied which at present considerably detract from its utility as a guide to those who are not already conversant with the subject. There are some questions, with their answers, in the introduction, which, if interpreted according to their strict meaning, are not only confusing, but erroneous and contradictory. They teach us that an excess on the debit side of an (any) account in the Ledger represents a resource; that an excess on the debit side of an account is sometimes a resource and sometimes a loss; that an excess on the debit side of Mdse. Acct. represents a resource, and, by inference at least, that an excess on the debit side of a personal account does not represent a resource. As we have said, its chief recommendation is its practical character, but even here exception will no doubt be taken to our charging a person with the cost of goods we consign to him to be sold on our account and risk. It is true the author departs from this practice in subsequent parts of the work, but without giving a reason for violating the rule he has laid down. If these blemishes were removed the book would be a very acceptable one.

OUR NATIONAL SYSTEM OF EDUCATION. *By J. C. Henderson, Jr.* New York: Dodd, Mead & Co. This is an able and exhaustive essay, designed to show the necessity for universal education in



monarchies as well as republics, and the means which have been adopted in the United States for the establishment of a National system of education. The amount of illiteracy in the different parts of the United States is shown clearly by a carefully prepared map.

**THE ELEMENTS OF RHETORIC.** By James De Mille. New York: Harper Brothers; Toronto: Willing & Williamson.

**THE PRINCIPLES OF RHETORIC AND THEIR APPLICATION.** By Adam S. Hill, Professor of Rhetoric in Harvard College. New York: Harper Brothers; Toronto: Willing & Williamson.

The eminent firm whose imprimatur is found on the title page of these two books has conferred no small amount of benefit on the English student by their publication. The subject is one that has been so frequently and exhaustively treated as to make one wonder whether it is possible to say anything new upon it. Nor is it possible to say much which has not been said before by some author of the many who have discussed the subject from Aristotle to Whately. It is not in this direction, therefore, that we must seek for the *raison d'être* of the books before us, but rather in that indicated by Mr. De Mille, when in his preface he tells us that "while a work on Rhetoric can hardly contain anything new in the subject matter, it is still possible to exhibit some originality in the mode of treatment." From this point of view both authors display a very considerable amount of originality, for the treatises are as unlike each other as they are unlike all previous treatises on the same subject. It is impossible within the scope of one brief notice to do much more than call attention, in a general way, to the high merits of the books, but there is one peculiarity of each which deserves more than a passing reference. The element in Mr. De Mille's work likely to prove of greatest service to the student is his analysis of the figures of speech, which is carried through nearly one hundred and twenty pages, and is at once elaborate, acute and suggestive. His classification of rhetorical figures into those of relativity, gradation and emphasis will be found exceedingly convenient. The list of figures is exhaustive, the definitions are concisely worded, the illustrations are numerous and appropriate, and the practical remarks and cautions accompanying each are calculated to render the student at once more expert in their use and less liable to their abuse. The part of Professor Hill's work to which we would more particularly call attention is that which treats of grammatical purity and the choice use of words. Never was there more need of attention to the niceties, to say nothing of the essentials, of the Queen's English, which one hears and sees mutilated to an enormous extent on every hand. Men calling themselves educated speak and even write "lay" when they mean "lie," pronounce "across" as if it were spelt "acrost," add the inevitable terminal "r" to every word which ends properly in a vowel sound, and perpetrate other and equal vulgar errors almost innumerable. All who really wish for assistance in the work of educating themselves up to a proper standard in this respect will derive great benefit from a perusal of this little treatise. The authors and works quoted for purposes of illustration and warning are extremely numerous, each reference being most carefully and minutely given.

**FIRST STEPS IN ARITHMETIC.** By Matthew Wilson, Principal of the Glasgow Model School. Thomas Lorie, 63 Prince's Street, Edinburgh. The most Elementary Arithmetic we have seen. The price of the book is threepence.

**ELEMENTS OF NATURAL PHILOSOPHY.** By Elroy M. Avery, Ph. M. Sheldon & Co., 8 Murray St., New York. The reader will be reminded of Peck's Ganot's Philosophy. A more modern arrangement, however, and exercises at the end of each section make it an improvement on the older work.

**ELEMENTS OF BOOK KEEPING.** By Joseph H. Palmer, A.M. Sheldon & Co., New York: A good work for elementary classes. The exercises throughout the book are of an easy progressive character; giving the cash accounts of children away from home attending school, clerks, families, treasurers and others, in order to induce an easy and agreeable habit of comparing moneys received with those expended, outlays with returns, &c. The paper, binding and typography are excellent.

**HOUSTON'S OUTLINES OF NATURAL PHILOSOPHY.** Philadelphia: Claxton, Remson & Haffelfinger, 624 Market St. This work consists of a series of questions and answers—an objectionable arrangement of the subject.

PLEASE STOP MY—WHAT?—"Times are hard, money is scarce, business is dull, retrenchment is a duty; please stop my—" whiskey? "O, no; times are not hard enough for that yet. But there is something else that costs me a large amount of money every year, which I wish to save; please stop my—" tobacco, cigars and snuff? "No, no, not those; but I must retrench somewhere; please stop my—" ribbons, jewels, ornaments and trinkets? "Not at all; pride must be fostered, if times are ever so hard, but I believe I can see a way to effect quite a saving in another direction; please stop my—" tea, coffee, and needles and unhealthily luxuries? "No, no, no, not those. I cannot think of that sacrifice; I must think of something else. Ah! I have it now. My paper costs me eight cents a month; one dollar a year; I must save that. Please stop my paper. That will carry me through the panic easily. I believe in retrenchment and economy, especially in brains."—*Household.*

**STANDARD AUTHORITIES.**—The physician, the lawyer, the soldier, the sailor, the political economist, the clergyman,—nay, even the very cook, has his standard authority, universally accepted; but the teacher, whose vocation is more important than that of any of them, is left without chart or compass.—*Thos. Hunter, Pres. Normal College, N. Y.*

—We know by long experience that it is because the school-girl, who has received no instruction, except from another girl as uneducated as she, is willing to teach for a pittance, many excellent normal graduates are compelled to abandon the profession for which they had prepared themselves, or submit to poverty prices. Educated teachers are driven away from the school-room, because the people do not discriminate between a good and a poor school, and are willing to take almost any one who holds a commissioner's certificate, and is willing to teach for the small amount the district votes to pay. There is not one among our honest professional teachers who does not feel degraded because so many are admitted by law to be their peers who know nothing of the science and art of education, and never intend to teach but for a few months. There is not a school officer in the Union, especially in the country, who will not express his great desire to increase the price, and thereby the quality and permanency, of school-room work.—*National Teacher's Monthly.*

—Education is the normal, and therefore harmonious development of all human faculties, the harmony is to be tested as all proportions are tried, by *ratio*; and that development is harmonious in which "any phase of ability is but a phase of general ability." A man, then, is completely educated when he naturally and readily discharges all of his functions as a human being; an individual is fully educated when he has reached the limit of skill possible to him as an individual; and a man is properly educated in proportion as his instruction leads him toward the full possession of his faculties.—*Am. Jour. of Education.*

—No child up to the age of nine or ten should be confined at his tasks more than three hours a day. As he grows older, the number of hours should be increased. At seventeen, the boy, if he has come to that period with strong nerves and healthy organization, might be employed at his tasks thirty hours per week without injury, and perhaps longer, if a sufficient variety is presented. But all through the age of childhood and boyhood no restraints should be placed upon the physical growth, either directly or indirectly. The future of American life depends more for the healthiness of its moral and social tone upon the school-life of the rising generation than the superficial observer would probably admit.

# RIVINGTON'S EDUCATIONAL SERIES,

## WATERLOO PLACE, LONDON.

### CATENA CLASSICORUM.

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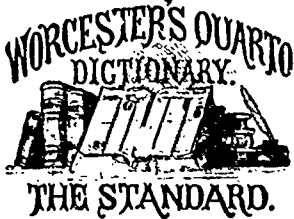
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