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The Canada School Journal.

AND WEEKLY REVIEW.

VOL. X.

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The Canada School Journal and Weekly Review.

An Educational Journal devoted to the advancement of Literature, Science, and the teaching profession in Canada.

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The World.

Servia has declared war against Bulgaria, invaded her territory and fought one or two battles. The object of Servia is, no doubt, to enlarge her own territory by the addition of a part of Bulgaria, in which the population is largely Servian. Her first alleged successes have been followed by severe defeat at the hands of the Bulgarian forces. Though the trouble has been caused by what was practically a revolt against Turkey, Bulgaria is now calling upon Turkey for help. The fire ball has been set rolling. If, as seems highly probable, it should roll beyond the boundaries of the little states immediately concerned, and kindle a conflagration amongst the Great Powers, no one can tell what the end may be.

If the New York *Herald's* abstract of the Pope's forthcoming encyclical proves correct, the world is about to have a great and pleasant surprise. The *Herald's* extracts contain such expressions as that "the church is not the enemy but the friend of all healthful and legitimate liberty," warmly "patronizes all true liberty," "will accept with joy all that contributes to the

conquests of science, particularly of natural science," "is in perfect harmony with all modern progress," &c. If these are the views of the present Pope, they are in marked contrast with those of his immediate predecessor who declared it an error to suppose that "the Roman Pontiff can and ought to reconcile himself to and come to an understanding with progress, liberalism, and modern civilization."

A determined effort is being made in the United States to get the Government to institute legal proceedings to set aside the Bell Telephone patent. The ground alleged for such action is fraud. The case was argued the other day before Secretary Lamar and some pretty strong affidavits presented. An important one by the examiner of the Patent Office, who was in charge of the Electrical Division at the time the patent was issued, asserts that there is reason to believe that the Bell process was borrowed from a previous invention by Professor Gray. Canadians who know the Messrs. Bell will be slow to believe that they would be guilty of any crookedness in the matter. It is not yet known whether the Secretary has decided that there is enough evidence to warrant an official investigation or no.

Some of our contemporaries are inclined to smile at the idea of the newly enfranchised electors in Great Britain being called upon to give their opinions, by their votes, on the great questions of British and European State-craft. Taking Hodge as he is to-day, there seems certainly something farcical in his solemnly pronouncing upon the reform of the House of Lords, and the Disestablishment, Land, Irish, Bulgarian, and Egyptian questions. But how much less is his opinion worth even now, on such questions, than that of millions of the old voters, many owners of property and titles included? And then Hodge can generally read and will soon learn to think, and the possession of the power of the ballot will be one of the most effective incentives to reading and thinking. The use of the franchise for a generation will do more to promote intelligence and mental activity amongst the masses than almost any other agency.

From the party standpoint and with the immediate future only in view, it may have been a clever move of the Conservative leaders in England to sound an alarm in reference to the Church. To create the impression that Liberal success means destruction to the Establishment is a most effective way to stir sleeping Conservatism to activity, and to enlist a good many moderate Liberals in the army of defence. But in the interests of the stability of the State Church worse tactics could not have been adopted. The issue has been joined, and a controversy aroused that will shake the whole national Church fabric to its foundations. Free and fearless discussion of underlying principles is the one thing its supporters have the most to dread. The strength of such revered but illogical institutions

is in their power of passive resistance. Even the Radicals would have been in no hurry, in the presence of so many other popular reforms, to assault so formidable a stronghold of national and religious sentiment. But a sortie having been made, and the fighting forced, there can be but one result. Disestablishment is sure to come and may come very soon.

The School.

Dr. Porter, for so many years the able and honored president of Yale College, has resigned the headship, retaining the chair of Mental and Moral Philosophy. His resignation is understood to mean that the way is now open for certain modern reforms and innovations in the management of this venerable institution, which the great personal respect in which he was held kept in abeyance so long as the forces of conservatism were backed by his influence in the chair.

The London *School Guardian* sums up the conclusions of a long article on "Free Schools in America" as follows: "What, then, is the lesson that America has to teach England with regard to Free Schools? That gratuitous instruction has not the effect of improving school-attendance, that if we have Free Schools for the poorer classes we must have Free Schools for the classes above them, that we must have Free Colleges as well as Free Schools, that we must have Free Books and Stationery as well as Free Schools and Free Colleges, and that we must make up for loss of income by cutting down expenditure. We venture to point out that Free Schools will be dearly bought if they are purchased, as in America, at the expense of efficiency."

The Lindsay Board of Education has issued a circular approving of an annual convention of High and Public School Trustees for the Province of Ontario. The suggestion is a good one. The office of school trustee is one of great responsibility. An interchange of experiences and ideas could not but be very helpful to many. Anything which tends to exalt the importance of the position and work, in the minds of both trustees and electors, will be productive of good. By all means let trustees or their representatives come together for conference.

We are glad to announce that the final arrangements have been made for the award of the SCHOOL JOURNAL Arithmetical Prizes. The manuscripts of the competitors are now in the hands of two well known mathematicians, whose award will, we feel sure, be accepted by all as satisfactory. The names of the successful competitors are to be made known within one month from this date. We are sorry to add that the number of papers submitted in the Third-Class Competition is too small to warrant any award. The same is true in regard to the prizes offered for School Room Anecdotes. Consequently the prizes can only be awarded for the Fourth-Class problems, in which, we are happy to say, the competition is keen.

The *Normal Index* well observes "that parents who never visit the school are usually the first ones to find fault with the teacher." Very true. We do not know how the difficulty is to be met in a free country, unless by the teacher taking more pains to cultivate the acquaintance and win the confidence of the fault-finding parents. A good way often to attain these ends is to cultivate the acquaintance and win the confidence of the children of the fault-finding parents. The conscientious teacher may do this, not in a cringing or time-serving spirit, but in honest endeavor to get at the root of the trouble. The parents' impressions are usually derived through the children, and their complaints may often be taken as a hint that the latter are not interested and happy in their work. It is worth while to try to make them so.

Did it ever occur to you that those restless, troublesome, mischief-loving boys and girls, who often make your life in the school-room miserable, may be the very ones who are best worth working for? That superabundant energy is what will make the men and women of a few years hence useful or dangerous above the average. Restlessness and mischief are often the symptoms of pent-up forces and may indicate large capacities for good or evil. It should be remembered, too, that it is folly to attempt to repress explosive energy by sheer weight or force. Bank it up in one spot and it will burst out with increased violence in another. The wise teacher will rather seek to turn the superabundant energy into harmless or useful channels. The most dangerous and destructive forces become the most docile and useful when skilfully caught and directed.

"The two mischievous tendencies, which the teacher of the present age has to combat, are the superficiality born of frivolous views of life, and that more potent, because more specious, enemy voiced in the clamor for practical education, which, being interpreted, means the ability to earn money at the earliest possible age." So says a writer in *The Overland Monthly*. Too true. There is, probably, not an earnest teacher in the land whose soul is not vexed from day to day by one or the other of these tendencies. Generally the former manifests itself in regard to girls', the latter in regard to boys' education. The great want of the age is more moral earnestness in women, more capacity for patient industry in men, and higher views of life, higher conceptions of truth and duty in both. To implant an ardent love of knowledge and truth for their own sakes is the highest success the teacher can achieve.

Quebec has already moved in the matter of preparing an Educational Exhibit for the Colonial and Indian Exhibition which opens in London in May next. A Commission has been appointed by Order-in-Council to superintend the preparation of the Exhibit, and is now organized and at work. Our own Educational authorities are also taking action in the matter, and we suppose will not be behind hand. We do not attach the greatest importance to shows of the mere machinery of education, but no doubt the appliances used teach a good deal, with reference to the amount of attention given to it, the

methods adopted, &c. We have, however, a shrewd guess that the appliances exhibited on such occasions cannot always be safely taken as samples of the appliances actually in common use.

"The duty of a teacher is to teach." "Good government comes through good teaching." These maxims from an excellent article on "Whispering," in the *N. Y. School Journal*, are worthy of careful pondering. Many teachers seem to think that the first duty of a teacher is to govern, and that the teaching is a secondary consideration. Of course good teaching is impossible where disorder reigns. But the question is, which comes first in logical order, the governing or the teaching? Can disorder reign in the presence of good teaching? The distinction is of far greater importance than appears at first sight. The schoolmaster who sets out and continues with the idea that teaching is his business, and that just so much government is necessary as may enable him to teach most effectively, has in his hands a clue which will guide him through the labyrinth of the busiest school. On the other hand he who sets out to establish a reign of absolute quiet and order before he begins to teach, is likely to find his time and energies so exhausted in governing that he has little of either left for teaching.

We have not for some time seen anything in worse taste than a High School Master's letter to the *Mail*, the other day, attacking Dr. Purslow of the Port Hope High School, for having written in opposition to the proposed increase in the number of scholarships offered for matriculates in Toronto University. Dr. Purslow's objection to the use of public funds for a purpose which is, to say the least, unnecessary and doubtful, by an institution which is avowedly impecunious, and which is asking further help from the Government, will seem to most impartial minds, we think, to be well taken. But whether well taken or not, Dr. Purslow writes calmly over his own signature, on a question in which he, as a citizen and a taxpayer, has as much right to speak as any other man. The attempt to evade the issue by raising the petty question of the relative number of scholarships taken in such and such a year by different schools is unworthy of a High School Master. As every teacher knows the successful students in any given year is largely a matter of accident, and if it were not, the time is, it may be hoped, near when the intelligent public will learn that there are other and far better tests of the real merits of a High School.

"Our Country and Village Schools" recommends an exercise which it calls "The Sentiment Class." The idea suggests an excellent variation for the Friday Afternoon Exercises. The teacher would first have a "nice little talk" with the pupils about learning short maxims, and illustrate his meaning with a number of choice proverbs, sentiments, couplets, verses, &c. Then let the whole, or perhaps better, a certain number selected alphabetically or otherwise, be requested to come prepared next Friday to stand up, each in his place, and recite some such passage selected by himself. Advise them to choose noble sentiments, beautiful thoughts, grand truths, &c. Such an exercise, skilfully conducted, may be made not only intensely

interesting to the children, but also a means of cultivating literary taste and high moral sentiments which will have an important influence on the future character.

A serious schism is threatened in the Southern Presbyterian Church of the United States over the theory of Evolution. The trouble originated in the dismissal of a Professor from a Theological Seminary in Columbia, S. C., for teaching the questionable doctrine. The matter has been discussed and voted upon in four Synods, with the result of a slight majority in favor of the ousted teacher, but several other Synods are yet to pronounce upon it. The propagandism of the evolutionists is one of the curiosities of the day. The readiness of many to accept the theory as proved, and to teach it as if it were a demonstrated scientific truth, betokens a rashness of judgment which is very far removed from the true philosophical method. As the *Chicago Current* says:—"To accept man's pedigree as laid down in one of the first pages of Darwin's "Descent of Man" requires more pure faith than any Southern Synod demands of its preachers." The scientists condemn the Christian system as demanding belief of the unknowable, but to accept the Darwinian theory as unquestionable truth is to exercise more faith in the unknowable than has yet been required of the Christian believer.

UNIVERSITY LOCAL EXAMINATIONS.

We referred last week to the report presented by the Vice-Chancellor to the Senate of Toronto University recommending a scheme for local examinations. That scheme has since been adopted. Its provisions, we are happy to say, are of the most liberal character. Local examinations are to be held wherever there are not less than five students desirous of taking them. Males as well as females may be admitted. A candidate may select any one or more of the subjects for matriculation. Honors will be awarded to those whose papers come up to the required standard, though scholarships will not be given. Candidates taking the requisite subjects may matriculate at these examinations.

The fee for candidates taking the examinations in one or more subjects is \$2. An additional registration fee of \$5 will entitle any one who has passed in the requisite subjects to be registered as an undergraduate of the University.

We would again remind teachers of the excellent opportunity this arrangement holds out to them. We do not see why any young man or woman in the profession, who has not already obtained university standing, should not prepare for these examinations. There is surely no one who could not easily get ready to pass in one or more of the subjects. The examination in prospect is just what is needed to give steadiness and definiteness to private studies, and to encourage a laudable ambition.

We congratulate the Senate and the country on this truly liberal system. It shows that either there is much new blood in the Senate, or that the minds of the old Senators are becoming hopefully receptive of progressive ideas. We have a vivid recollection of the struggle which was necessary, but a very few

years since, in order to obtain the passage of the statute providing local examinations for women, hedged about as these were with cumbrous restrictions, and admitting, as they did, only those candidates who were prepared in a number of subjects grouped according to certain fixed orders.

So far as appears these arrangements are still partial and defective, as providing only for matriculation subjects. The next step will be to extend them so as to cover the whole undergraduate course. That will come in time. Meanwhile we hail the present as a truly liberal measure. "The world moves."

Special.

NOTE.—We did not receive the "Copy" of the Elementary Chemistry in time for this week's issue.—ED. C. S. J.

HIGH SCHOOL LITERATURE.

FOURTH PAPER.

THE ANCIENT MARINER.

PART I.

1. "The Rime of the Ancient Mariner. What force has of in the title? In which of the following phrases is it similarly used?
(a) The tales of my grandfather.
(b) A tale of two cities.
(c) The city of London.
2. "Ancient Mariner." Does *ancient* mean *old* or *old-fashioned*?
3. Describe in the language of the poem the personal appearance of the Mariner.
4. Why is the "next of kin" the "one of three" that must hear the Mariner tell his tale?
5. "He holds him with his skinny hand":
"He holds him with his glittering eye":
Compare the uses of *holds*.
Why is the glittering eye more effective than the skinny hand in the detention of the guest?
6. "The Mariner hath his will." Whose will?
7. "The Wedding-Guest here beat his breast."
What conflicting influences are at work upon the Guest?
8. V. 35. Would *go* be suitable?
9. "Tyrannous and strong." Is this tautologic?
10. In what image is the storm-blast, with his overtaking wings, presented?
11. "Chased us south along." Could the sense dispense with "along"? If not, show its force.
12. "With sloping masts," etc. How is this stanza constructed from the basis of the four-lined typical stanza?
13. "As who pursued," etc. Explain the syntactical relation of *who*, *pursued*, and *treads*.
14. "Still treads," etc. Draw a rough diagram in illustration.
15. "Cold—emerald." Remark on the nature of the rhyme.
16. *Drifts*: what? *Cliffs*: what? Whence the *sheen*, and why is it *dismal*?
17. Scan v. 64 with the present, and with the original reading.
18. "We hailed it in God's name." Why are they glad?
19. V. 67. Does *eat* rhyme with *meet* or with *met*?
20. *Fog—smoke white*: *fog smoke—white*. Which of the two readings tells us most about the fog?
21. "I shot the albatross." Compare the close of this part with the close of each of the other parts of the poem. What similarity is observable in six of the final stanzas?

22. Make a list of archaic words in Part I. Explain the meaning of each. Explain clearly why poets use such words.
23. Quote the lines of Part I., written by Wordsworth.
24. Describe the course of the ship throughout this part.
25. Quote the portions of the text thus referred to in the gloss,—
(a) The Wedding-Guest is spell-bound. (vv. 13—20).
(b) The land of ice. (vv. 51—62.)

THE STUDY AND TEACHING OF ENGLISH.

BY WILLIAM HOUSTON, M.A.

(Concluded.)

GRAMMAR, LOGIC, AND RHETORIC.

These sciences collectively have for their subject-matter the formal laws of thought and of the expression of thought by means of language. They are, of course, separable from each other in treatment; but it is convenient for my purpose to group them, since grammar has to deal more or less with the laws of thought, and it would be better if the grammarians would revert to them more frequently than they do, and attach less importance to what may be called historical accidents. In other words, if grammatical analysis were made more logical than it usually is, there would be less reason to complain of its prevalent use. Take, for instance, the sentence, "The cat jumped from under the table." It is impossible to parse the word "from" according to the usual definition of a preposition, except by treating "under-the-table" as a noun of place, which logically it is. Why should any more minute analysis be required, when it is not merely a waste of time and effort, but tends to hinder the pupil from getting what you most want him to get in this direction, a clear view of the nature and functions of words? Sometimes apparent or real inconsistencies are explicable by a knowledge of word history, as, for instance, in these uses of "worth":—

Woe worth the chase! Woe worth the day!
The horse was worth two hundred dollars.

Or in these uses of "wont," both of which are justified by usage, and therefore correct:—

Some of our English poets have been wont to make their homes in Italy.

Can this be he who wont to stray
A pilgrim on the world's highway?

What I wish to insist on chiefly with respect to formal grammar, however, is that it should not be taken up systematically at an early stage of the pupil's progress—not until he has left the Fourth Class either to enter the Fifth or to pass into the High School. Even in these I see little use for it, as it is properly rather a university than a school subject. Do not suppose that this is equivalent to saying you should not teach grammar. That you cannot avoid doing from the moment the pupil comes within the sound of your voice and the circle of your influence, for grammar is not merely "the science of language," but the "art of speaking or writing correctly." The most effective method of teaching grammar to children is to teach it practically and incidentally; and I believe this to be the best way of teaching it even to university students. I attach little importance to a knowledge of books like Earle's "Philology." If a man wants to know English grammar historically he should make himself acquainted with the literature produced in the various stages and dialects of the language. It will do him little good to memorize what others have written about changes in the forms of words and inflections. By following the methods I have described above in training his pupils in the correct use of the language, and in capacity to appreciate literature, the teacher will have made them, by the time they reach the High School entrance period, excellent practical grammarians, and this is of more importance than to have them able to analyze and parse difficult expressions. I could parse at twelve years of age, and correctly according to the rules of the grammarians, expressions which to-day I would not think of trying to parse at all, simply because I regard them as anomalous. Are they, therefore, illegitimate? Not at all, if they are justified by usage. What you should do about such expressions is to see that your pupils learn to use them as educated men and women do, and, if the examiners will only permit you, to tell the boys and girls, frankly, that you do not always feel competent to explain what is arbitrary, that language is conventional and capricious, and that the great end of

words is to be used and not to be parsed. I am fully persuaded that by making grammar in this way more practical, keeping the word "grammar" itself out of sight, and leaving the formal science of language to be taken up at a much later stage, we would be able to show better results.

IV. PHILOLOGY.

Much the same line of remark applies to philology, including under this term the history and derivation of words. In school a great deal of time is often wasted by asking the pupil to commit to memory long lists of roots, prefix-s, and affixes, and to practise what is called "word-building." This is a very unpractical and, therefore, indefensible way of teaching philology. The history and derivation of words should be dealt with in the lower class only in so far as they can be made useful in getting at their true meaning, and thus aiding in a more thorough comprehension of literary texts. There should be no learning of lists of roots, and the first introduction of the pupil to philology should be through the medium of analysis, not of synthesis—word-resolution, not word-building. Philology so treated can be made incidentally the means of affording an excellent training in generalization or induction. Let the teacher take a number of commonly recurring words, in which the root is constant and the prefix variable—as, for example, precede, recede, secede, proceed, intercede—and show how the force of the root of the word is constant while that of the prefix varies. Let him next take a number of common words in which the prefix is constant and the root variable—as, for instance, intercede, intervene, interchange, intermix—and show how the force of the prefix remains constant while that of the stem varies. By pursuing this method he will so train his pupils to become intelligent observers of verbal phenomena, to discover for themselves a number of philological laws, and—what is of more importance—to reason carefully and correctly on the inductive method. At the end of any given time they may know by heart fewer root-words and appendages; but they will have a more intelligent knowledge of philology and be possessed of a method which is the instrument, the organon, of all progress in the so-called inductive sciences. Do not think that I disparage the science of philology by asking to have it dealt with in this way. It happens that it is one of the subjects of which I am exceptionally fond, and I would not think of depriving your pupils of the pleasure to be derived from such a widening of their horizon as only philology can give. There is no reason why they should not gradually and profitably be made acquainted with the fact that each individual word has its history; that some of our words have been taken by great masters of literature for their own use from other languages; that in this way the original stock of English words has been greatly and advantageously increased; that these English words have themselves greatly changed in both their original and inflectional forms; that Milton's and Shakespeare's English, and even that of our common Bible, differs greatly in outward appearance from their texts as we now invariably see them printed; that still older texts differ still more, so that we get back at last to a time when English must be learned anew like a foreign language, that this old English came originally to England from Western Europe, that it was brought over in many different forms called dialects, which still exist, chiefly as local *patois*, but in some cases also as the vehicle of dialectal literature; that English is closely related in descent and form to several European languages, such as the Dutch, the German, the Scandinavian; that the members of this great Teutonic family are more distantly related to another European group, which includes the French, the Spanish, the Italian, and the Portuguese; that these Romance languages, formed by the decay of the Latin, the Latin itself, the Greek and the Sanskrit of India, form with the Teutonic languages a still larger group known as Indo-European or Indo-Germanic; and that all these are comprised under the common name Aryan, to distinguish them from another large group called Semitic, which includes the Arabic, Hebrew, and Aramaic and from a third group described as Monosyllabic, of which Chinese is the most familiar example. The process by which all these relationships have been determined is strictly analogous to the process by which the past history of the earth's crust has been reconstructed by the geologists, and it constitutes one of the most perfect specimens of inductive reasoning afforded by the whole circle of the sciences. By treating philology in school as strictly subordinate and subservient to the obtaining of a clearer comprehension of the meaning of words, and by training the pupil gradually and incidentally to look upon apparently isolated and capricious etymological facts as parts of one great system of development, con-

trolled by laws as uniform in their operation as those which govern the formation of the stratified rocks and the order of succession of animal life on the earth's surface, you will make the subject attractive instead of repulsive; and it will remain with him, whether his knowledge of it be much or little, a matter of deep scientific interest through life, just as literature properly treated will remain a perennial source of æsthetic and intellectual enjoyment.

Teachers' Examinations.

EDUCATION DEPARTMENT, ONTARIO,
JULY EXAMINATIONS, 1885.

FIRST-CLASS TEACHERS—GRADE C.

ALGEBRA.

Examiner—J. A. McLellan, LL.D.

- (a) Find the value of $5x^4 + 497x^3 + 200x^2 + 196x - 218x - 2001$ when $x = -99$. And of
(b) $x^3 + 3x^2 - 13x - 38$ for $x = 358443$.
- Investigate Horner's Method of Division. Divide $6x^5 + 5x^4 - 17x^3 - 6x^2 - 10x + 2$ by $2x^2 - 3x + 1$ And express $x^4 + 8x^3 - 16x - 10$ in powers of $x + 2$.
- When is an expression
(1) Symmetrical with respect to two of its letters,
(2) Completely symmetrical with respect to two or more letters? Give examples. State clearly "the Principle of Symmetry."
Show that $(2x - y - z)^2(2y - z - x)^2 + a^2al + a^2al$ is a perfect square.
- If $f(x)$ be divided by $x - a$ the remainder is $f(a)$ (Prove).
(1) Find the value of $6x^4 + 9x^3 - 16x^2 - 5x - 12a^2 - 6a + 60$ when $3a^4 + a - 4 = 0$.
(2) Determine the values of p and q which will make $x^{12} - 5x^{10} + 10x^8 - 15x^6 + 29x^4 - px^2 + q$ vanish, if $(x^2 - 2)^2 = x^2 - 3$.
- Find the G. C. M. of $x^3 - 49x^2 + 116x - 68$ and $x^6 - 21x^2 + 20$. If 10 be put for x in these expressions and in their G.C.M. examine the resultant, and explain.
- Find the factors of
(1) $a^3 + b^3 + c^3 - 3abc$
(2) $(a-b)(x-a)(x-b) + (b-c)(x-b)(x-c) + (c-a)(x-c)(x-a)$
(3) $(a+b+c)^2 - (a^2 + b^2 + c^2)$.
From (1) prove that
$$\frac{x}{1-x^2} + \frac{y}{1-y^2} + \frac{z}{1-z^2} = \frac{4xyz}{(1-x^2)(1-y^2)(1-z^2)}$$
 when $xy + yz + zx = 1$.
- (1) If $(x-y)a^2 + (x+y)^2a + (x^2 - y^2)(x+y)$ be a complete square find the relation between x and y .
(2) Find the values of n which will make $x^2 + nax + a^2$ a factor of $x^4 - ax^3 + a^2x^2 - a^3x + a^4$.
- Solve the equations:
(1) $\sqrt{(2x^2 + 1)} + \sqrt{(2x^2 + 3)} = 2(1 - x)$.
(2) $\frac{ax+b}{ax-b} - \frac{bx}{ax+b} = \frac{ax}{ax-b} - \frac{(ax^2-2b)b}{a^2x^2-b^2}$
(3) $x+y+z=3a+b+c$
 $x+y+t=a+3b+c$
 $x-z-t=a+b-c$
 $y+z-t=3a-b-c$
- A grocer had three casks of wine containing in all 344 gallons. He sells 50 gallons from the first cask; then pours into the first one third of what is in the second, and then into the second one-fifth of what is in the third, after which the first contains 10 gallons more than the second, and the second 10 more than the third. How much wine did each cask contain at first?
- Given the sum of an Arithmetic Progression, the first term, and the common difference, find the number of terms (n). Interpret the result when there is a negative value of n .
- (1) If n geometric means be found between p and q , determine their product.
(2) If x, y, z , are in G. P., show that
$$x^2y^2z^2\left(\frac{1}{x^2} + \frac{1}{y^2} + \frac{1}{z^2}\right) = x^3 + y^3 + z^3$$

12. Give a proof of Binomial Theorem for a positive index. Write down the coefficient of

$$x^{2r+1} \text{ in the expansion of } \left(x - \frac{1}{x}\right)^{2n+1}$$

13. (1) Expand $a\sqrt{1 - \frac{x^2}{a^2}}$ to four terms.

- (2) Find the sum of the squares of the coefficients in the expansion of $(1+x)^n$, where n is a positive integer.

FIRST CLASS PROFESSIONAL EXAMINATION.

(2) PSYCHOLOGICAL FOUNDATIONS OF EDUCATION.

Examiner—J. C. Glashan.

NOTE—Candidates may select any five, but not more than five questions.

1. "The leading inquiry in the Art of Education is how to strengthen memory."—*Bain*; p. 8.

"It cannot too clearly be borne in mind that to acquire any amount of knowledge respecting the particular and the concrete is not to be educated."—*Sully*; p. 209.

Explain these statements.

2. "To train 'Memory' is a very vague way of speaking."—*Bain*; p. 139.

What is meant by the phrase 'The training of memory'?

What are the characteristics of a good memory?

How should the systematic training of memory be carried on?

3. "The patent facts appear to justify us in asserting that the plastic or retentive function is the very highest energy of the brain."—*Bain*; p. 25.

State some of these 'patent facts.' What do they really justify us in asserting? What general laws of education may be drawn from them?

4. Distinguish between percepts and concepts.

What are the conditions on which the forming of clear (i) percepts, (ii) concepts, depend?

5. Distinguish between growth and development of mind. Give a summary of the processes of intellectual, emotional, and active development.

6. Describe the interaction of emotion, intellection, and action.

What is meant by the phrase 'The training of the will,' and what by the phrase 'The discipline of the will'? How should this discipline be carried on?

HISTORY OF EDUCATION.

Examiner—J. E. Hodge, M.A.

1. Write a sketch of the "Schools of the Jesuits," touching specially on (a) the subject matter of their teaching; (b) the means employed to foster attention, emulation, love of learning.

Point out, with reasons, some of the faults and some of the excellences of their system.

2. Give Rousseau's views of the proper mode of Education for a child up to twelve years of age.

"Emile has but little knowledge; but what he has is truly his own."

"Obliged to learn of himself, the pupil makes use of his own reason, and not of that of others."

How does Rousseau explain these statements?

3. Set forth briefly Pestalozzi's (a) aim, (b) method.

4. "Nature has made the healthful exercise of our faculties, both of mind and body, pleasurable."

What theory does Herbert Spencer base on this principle?

Apply his theory to the teaching of History.

5. "He (the teacher) is apt to settle down unconsciously into a kind of moral and intellectual stagnation—Philistinism, as Mr. Matthew Arnold would call it."

What induces this 'settling down', and what means are suggested to prevent it?

DRAWING.

Examiner—J. A. McLellan, LL.D.

1. *Freehand Drawing* from the object, or from memory. No instruments to be used but the pencil.

Draw the following:—

- (a) A rough sketch of a pocket-knife—blade open at right angles; dimensions at pleasure.

- (b) A design for a vase; height 3"; greatest width, 1½", with two ornamental bands or borders, one on the neck, the other on the body.

2. *Constructive Drawing*—Rulers to be used:

Draw the necessary plans and elevations to show the construction of the following:—

- (a) An oblong box, having its corners trimmed with iron clamps; dimensions of box at pleasure.

- (b) A vertical section (cut longitudinally) of an iron cylinder 2" long, 1" in diameter, outside measurement; walls ¼" thick.

3. *Practical Geometry*—Rulers and compasses to be used. Construction lines shown.

- (a) Construct an oblong of sides 2" by 1", its longer sides being horizontal. Divide the upper horizontal side into five equal parts. Produce the vertical sides downwards about 1½ inches, bisect one of the right angles thus formed and trisect the other.

4. *Freehand Perspective*—No instruments to be used but the pencil.

Draw perspective views of the following:—

- (a) A cube of 2" side, showing two vertical faces and the upper horizontal face. Divide each of the visible faces into sixteen equal squares.

- (b) A cylinder 2" long, 1½" in diameter, in an upright position, having its ends equidistant above and below the level of the eye.

5. *Scientific Perspective*—Instruments to be used and construction of working lines to be shown.

Height of spectator, 5'; distance, 8' (feet); scale, ¼"=1' (foot).

- (a) Place in perspective a pyramid 4' high, having a square base of 3' (feet) side, standing upright on the ground, with the front edge of its base parallel with the picture plane, and its nearest corner 5' (feet) left of the spectator and 3' (feet) within.

MUSIC.

Examiner—Jas. F. White.

1. Write the scales of D, and B flat major, and the relative minor scales.

2. Give an example of syncopation.

3. Write the chromatic scale, ascending and descending.

4. Write four measures of "God Save the Queen" in two parts, key of A flat.

5. Give the meaning of the following terms:—

Staccato.

Legato.

Andante.

Allegro.

Allegretto.

Crescendo.

Diminuendo.

The lake that has the highest elevation of any in the world is Green Lake, in Colorado. Its surface is 10,252 feet above the level of the sea. Pine forests surround it, and eternal snows deck the neighboring mountain tops. One of these, Gray's Peak, has an altitude of 14,341 feet. The water of Green Lake is as clear as crystal, and large rock masses and a petrified forest are distinctly visible at the bottom. The branches of the trees are of dazzling whiteness, as though cut in marble. Salmon and trout swim among them. In places the lake is 200 feet deep.

There is a wood-pulp factory at Augusta, Ga., at which the expedition with which paper could be manufactured was recently demonstrated. A tree was cut in the forest at six o'clock in the morning, was made into pulp and then into paper at six o'clock in the evening, and distributed among the people as a newspaper by six o'clock the next morning. From a tree in the forest to a printed newspaper being read by thousands in the brief round of twenty-four hours!

"How much did you say this was?" "One dollar and a half." "That's a big price, isn't it?" "No, I assure you; the drugs are very costly. "But I am a druggist myself." "Oh, you are? well—of course—15 cents."—*San Francisco Chronicle*.

Practical Department.

Somebody has said, "If moral suasion does not succeed, use the shingle." We should be disposed to use the shingle on him who failed to make moral suasion a success.

Never be content with your knowledge of teaching; study the art of teaching. You will make many blunders at first, but be careful that you never repeat your mistake—gain knowledge from your failures.

The best teacher is not the one who helps his pupils but the one who helps them help themselves. Many pupils are weakened by too much help from the teacher—the teacher can not learn for the pupil but must show the pupil how to learn for himself.—*Normal School Instructor.*

Study the teaching of those who are successful; try to discover wherein their power lies. Attend institutes and teacher's associations; let not an opportunity pass of learning some new thing in regard to teaching. Read educational books and papers, they are a necessity for the progressive teacher.

How many cases occur in our schools where a boy brings his slate to the teacher, saying he can not do a certain example. The teacher takes the slate and pencil and performs the work in silence, brings out the result, returns the slate to the hands of the pupil, who walks off to his seat and goes to work on the next example, perfectly satisfied with the manner in which he is getting on.—*Tates Philosophy of Education.*

It has been said that when a student ceases to study, he does not stand still but goes back. The same remarks are equally applicable to the teacher. His sum of knowledge acquired does not become to him a permanent capital, he too retrogrades. He does not get rusty, he does worse; he relapses into ignorance. The teacher is always a student and when he ceases to be a student, he ceases to be a teacher.

OVER-SCHOOLING.

We doubt if the boys who are pushed through a full course in the famous Boston schools will be as well fitted for action, either in the profession or the trades, as their fathers who got all their education in the little country school-houses, when the school term included only four months during the fall and winter. Four months of schooling in book knowledge, and eight months of schooling in play and work during each year, gave these men their start in life; and a good start it was, too, as their success in business has proved. Let us see what the old system gave them. In the first place, a fair average knowledge of the essential rudiments of book education. At sixteen they were not illiterate. They had a fair knowledge of geography. They knew how to read. Not only was the knowledge of reading theirs, but the taste was theirs also. Having fewer books, they naturally digested their contents better. Moreover, they had sturdy bodies, healthy stomachs, clear heads. Better than all, they had formed the habit and love of labor. Their necessities made them practical. The prime object of education, which is to teach everyone how to get his own living, to make him self-supporting and independent, was realized. Now, how is it with the boys of to-day? What do they do? Study, study, study! What do they learn? Books, books, books! The whole system might be likened to a huge conspiracy not to put vitality

into boys, but to take it out of them. The stomach is fevered. The brain is wearied by premature strain put upon it. The nerve force is exhausted by continuous toil. The physique is neglected in its culture. The boy that takes the prize at the Latin School, is famous among his mates at the close of the term, and that is all the world ever hears of him. The education which books give, they have. But the education work gives, they have not. And the worst of it is, the forces which should make them strong in performance have been weakened and drained out of them.—*California Teacher.*

DRAWING.

BY WILLIAM BURNS, DRAWING MASTER, HIGH SCHOOL, BRAMPTON.

(The Editor of this Department will be glad to answer questions for information addressed to him in care of the SCHOOL JOURNAL.)

VIII.

In all pictures for industrial designs it is requisite in order to please the eye when placed in every direction that they should be symmetrical when viewed in all ways, this is best accomplished by forming them upon such figures as the square or the hexagon. A floor-cloth whose pattern is the "star-cross" is much more useful, as well as more artistic, than one composed of vases or bunches of flowers which can only be viewed correctly in one direction. The simplest element of such patterns in curved lines is the "rosette." The drawing of these rosettes is of great advantage to the pupil, because they allow of a very great amount of original work in the class, and with very slight explanation, the pupils can readily discern their own imperfections. Some of the most simple can be given by using two squares, as in the star-cross, lying across each other so that the diameter of the first becomes the side of the second. Let these be drawn, then change the straight lines of the sides into curved lines, taking care that the curves are of equal curvature and that they are sufficiently acute to form sharp points at their extremities. Let these curves be produced in any one direction, all round, till they meet in the centre, this will give the appearance of eight overlapping "leaves" and it will be symmetrical in whichever direction it may be viewed. This may be changed in appearance by placing a circle or concentric circles in the centre as well as by doubling the curved lines and causing them to interlace in a continued band around the inner circles. A combination of circular and straight lines in a similar way will produce a very pleasing effect. Let the inside of the rosette be made a square, and within it either a Greek or a St. Andrew's cross may be placed. Our space will not permit us to describe these various forms more fully, but a little observation of any good patterns will provide the teacher with fitting examples, and such a book as W. Smith's Drawing Manual will furnish many excellent illustrations. Still better will it be to get the pupils to bring copies for themselves of some examples from a wall-paper, floor-cloth, or ornament on the cover of a book, thus exercising the two faculties of observation and reproduction, the main aim in view in all our drawing instruction and that to which all our efforts should be carefully directed. The simplest plan of drawing "reversed curves" will require a short explanation. These curves present considerable practical difficulty in obtaining similarity on both sides; this is best overcome by making the pupils copy one drawn upon the black-board and then giving its duplicate in a reversed direction. Draw a vertical line and on the left of it draw an outline of any compound curve of two or more combinations, then draw horizontal lines through the most prominent points of this curve, and by measuring

the distances from the vertical line to the points of intersection of the curve and the horizontal on the left and transferring these measurements to the same line on the right of the vertical, a series of points can be obtained through which a curve line may be drawn. The number of these horizontals may be gradually diminished as the pupils gain more facility in the curves, or in reality as their eyes become more trained to noticing the changes of curvature. When a single curved line can be thus drawn, a series of curved lines forming a leaf or pattern can be readily obtained by the same simple plan. Had space allowed we should have liked to show how leaves can be drawn symmetrical on the two sides, by a similar plan, we must mention them as briefly as possible. Although leaves in nature are never truly symmetrical, yet a "conventional" leaf can be easily drawn by placing the natural object before the pupil and thus obtaining a general appearance of the left side, noticing the various proportions of height and width, then drawing the other half of leaf of similar form. The ivy, maple of various species, vine and other common plants provide the teacher with the best original copies for such drawings. We hope at a future time to devote an entire paper to leaf-drawing. The drawing of reverse curves becomes more interesting to the pupils from the ease with which it can be combined with practical examples, as the production of pictures of vases, pitchers of various shapes, egg-cups, etc. In drawing these it is obviously best to place one similar to that to be drawn, before the class. Then draw the vertical centre line and on the right and left of this parallel lines from the points of extreme width of the top; this will prevent the common error of making the base either so narrow as to represent an impossible object, or so wide as to be of a very clumsy appearance, next draw on each side, as before, the curves forming the outline. In placing the handle of a pitcher great care must be taken that the points of junction of the handle and of the body of the pitcher overlap very slightly, thus producing an appearance of solidity, otherwise the copy will look as if the handle, instead of being moulded to the body, merely penetrated it. In a drawing of an egg-cup or similar figure with a widened base, the outline of this vase should be completely drawn, as an ellipse, of course, and the lines representing the stem brought within this outline, with the portion unseen behind the stem, erased. It is not necessary at this stage of knowledge that the top should be drawn as an ellipse but may be made horizontal straight lines—this instruction really coming under model drawing—our present aim being merely to draw the reversed curves of the outline.

HINTS FOR YOUNG TEACHERS.

Anna C. Bancroft, in the *American Journal of Education*, gives the following excellent counsel to young women entering upon the work of teaching:—

1. Let nothing prevent you from thoroughly preparing every lesson—no matter how simple—that you are to give next day. Never go into the school-room without knowing exactly even to details, what you are to do.
2. No matter what happens be sure to keep your temper.
3. Don't omit to visit all families who send children to your school. Make a friendly call. Don't wait for them—and show yourself really interested in them and their children.
4. If any trouble occurs with any child, or there is danger of any—best go and see the parents and get their co-operation.
5. Don't be in a hurry about punishing, if necessary. *Waiting* to think it over never does any harm.
6. Be sure everything about your dress, desk and school-room is always in perfect order.

7. Try to make the room attractive, so that the children will find it pleasant.
8. Remember always that it is the best interest of the *children and school*—not your own that you are to work for.
9. Be sure that you carry out exactly all the directions you give. *Think well before giving them*: but then carry them out.
10. You must be entirely and wholly and always just. If not, you will not command respect—and not to have that, means failure.
11. Be very careful in your dealing with other teachers in the town. Never give them occasion to think that you set yourselves above them. Be always pleasant and friendly, you can learn from them. If you are working for the schools, there can be no jealousy—make them welcome to your rooms. Seek to know them. You can both give and get help, if you work in the right spirit.
12. Dress perfectly—simply. Celluloid collars and cuffs will save washing, and be always neat and clean. Dress should be plain, without much trimming. If it were not for washing, I would say, wear white aprons in school.
13. For arithmetic classes. Do all the examples yourselves at home before the time; then you will know what you are about, and can tell where the error is. Keep ahead of your class.
14. Talk over all your difficulties together.
15. Don't take any part in any village gossip. Don't allow yourself to talk about any one in the village, unless you have something good to say.
16. Try to make the children polite to each other in school.
17. Try the plan of having a school house-keeper for each day. Try to get the children to feel interested themselves in keeping everything neat and in order.
18. Don't be afraid to say, "*I don't know*,"—if you don't.
19. If you have made a false statement about anything in a lesson—don't be afraid to acknowledge it.
20. Correct all errors in English speaking that you notice.

ILLUSTRATED SCHOOL BOOKS.

A wan school teacher entered a bookstore near Greenville, Miss., a few days since, dragging after her a small fat boy, who held in one little paw a mutilated "first reader," and with the other wiped his weeping eyes and pug nose.

"Have you any first readers except these?" asked the school teacher.

"Any except these?" repeated the book man. "Why, ma'am, these are the nice little books I sold you the other day, surely you haven't any objection to them?"

"They have pictures in them and the boys can't learn anything from them," said the tearful teacher.

"Not learn because of the pictures; impossible! Why, ma'am the pictures are put there for the purpose of helping the scholars to learn. Allow me to give you a lesson in the art." Then turning to the boy—"Come, sit in this chair, my man, and let me see if you are not a wise fellow; take your book and begin here on this page, now look good at the picture, then spell the word."

The boy having cleared away sufficient tears and dirt to enable him to see, sat upon a chair with his stumped toed boots two feet from the floor, and taking the book began.

"D-o-g, dog."

"Ah," said the bookseller; "you see, ma'am. Now, my man," he added, sitting down and closing his eyes complacently, "now, my man, proceed."

"R-a-t, mouse. P-i-g, hog," proceeded the boy.

"No, no, not so fast," cried the bookseller startled. "Why, you see this fellow eating cheese is too large to be a mouse, so we

call him a rat; and this animal eating potato-parings is too small to be a hog, so we call him a pig; understand? Well, go on then, and look attentively at the pictures."

"P-a-i-l, bucket. I-n-k, inkstand," spelled the boy gazing at the pictures.

"No, no," cried the bookseller, and began to explain. The explanation lasted some twenty minutes, after which the bookseller said again:

"Understand, now? Well, then go on again and be sure to look close at the pictures so you will know what they are." The boy began again with his nose almost touching the page.

"V-a-t, tub. Q-u-i-l-l, feather. O-x, cow."

"Stop!" roared the bookseller.

The boy stopped, put down the book and took up a howl.

"Madame," said the bookseller to the school teacher, "I will order a lot of unillustrated first re - to-morrow."—*Detroit Free Press*.

Educational Notes and News.

Waterdown High School Literary Society is in a flourishing condition. The members are preparing for an open entertainment with good prospects of success.

The average cost annually for each pupil attending the public schools in Ontario is \$6.69. The number of schools is 5,000; teachers, 7,198. The number attending public schools is 27,000; high schools, 12,000.

The Ridgetown High School gymnasium building will be 32 x 50 feet, fourteen feet sides, well lighted, and face Harold street. The contract price, exclusive of painting, is \$316.50.

The number of teaching days in the Ontario rural public schools for the latter half of 1885 is as follows:—July, 2; August 11; September, 22; October, 22; November, 21; December, 17; total, 95. In cities, towns and villages the number is 84.

Mr. J. F. Bruce Rogers has been engaged to take charge of the Walkers Public School for 1886, at a salary of \$500.

Mr. Logan having declined to accept the position of classical master in Perth Collegiate Institute, Mr. Charles Young was re-engaged, at a special meeting of the Board of Education, for six months.

Miss Maggie McFarlane, of Cowal, who taught school in section No. 7 for the past two years, has been re-engaged for the coming year at an advanced salary.

Between \$30,000 and \$40,000 was expended on public schools in Hamilton during the holidays—building the west avenue school and making improvements in some of the old buildings.

City Public School Inspector, J. L. Hughes, Toronto, is authority for saying that stammering can be cured effectually by the phonic system of teaching reading.

Miss Alice and Nancy Inglis, of Springfield, have engaged to take charge of Orwell school for next year.

Boys and girls of a former generation, whose entire schooling was comprised in half a dozen three months' terms, learned to spell and write and "cipher" with an ease and accuracy which many children do not now attain after a ten years' course in the schools. Under the old system the pupils did not listen to so much instruction in geology, botany, physiology, astronomy, nor did they devote much attention to music, drawing, German and French, all of which are dimmed into the ears of even the babies now; but what they did learn was of immediate use and an excellent groundwork for the practical education which must come in later life.—*Indianapolis Journal*.

Out of the present teaching staff in the public schools, Fenelon Falls, only one teacher, Miss McDiarmid, has been re-engaged. Mr. Wilson was appointed head master and the selection of him is considered a wise one. The other appointees are strangers to the village. For the several positions there were no less than 132 applications,—one from Dublin, Ireland,—and more than fifty per cent. were for the principalship.

The School Inspector, Mr. Carlyle, visited the Bright school and spoke very praiseworthy of its standing and the great improvement it had made under Mr. Burke's tuition, and says that the school never was in a better condition.

The Educational Committee of the County Council at their session this week recommended the appointment of Messrs. Rutherford, of Aylmer, and Samuel McCall, of Danwich, as County Examiners, thus ignoring the claims of the Principal of the St. Thomas Collegiate Institute, Mr. Millar. The Council coincided in the Committee's action, a motion to appoint Mr. Millar being lost.—*London Free Press*, Nov. 21st.

Mr. Wark, principal of the Sarnia Model and Public Schools, has been re-engaged at an increase of salary, which is to be \$850. All the other teachers were re-engaged.

Mr. R. S. P. Reynolds, of Nissouri, has been appointed principal of Ailsa Craig Public School for 1886. Mr. J. W. Braithwaite, of S. S. No. 26, London, will succeed Mr. Reynolds in S. S. No. 5 Nissouri.

On Thursday the teacher of the Orwell school, Mr. Jesse W. Mills, punished a child named McCready for "cutting up," and after recess the parent of the pupil put in an appearance. He felt very indignant, and practically proved his wrath by striking the teacher several times, for which he will answer before Judge Hughes.—*London Free Press*.

Principal Grant, of Queen's University, sizes up our public school system at just about its true character, and he calls it "one sided, rigid, harsh, and pretentious." There is too much pedantry and examination about it. The aim apparently, is not so much to give every child, quick or dull, a fair chance for the harmonious development of all his faculties, as to employ rigid tests for the discovery of these pupils who have retentive memories. It is a process of mere weeding out, not education at all. There is too much of the unnatural forcing, hot-house system about it. People are beginning to find this out. Our glorious education system is a good deal like the glorious French army before the war with Germany—pretty much on paper. We judge a tree by its fruit; where are the fruits in this case? Much that is valuable in the child nature is, Truth fears, being sacrificed to produce mere shallow intellectual sharpness, which is far from being education.—*Berlin News*.

The Sarnia Board of Education are about to increase their High School staff. An assistant is to be appointed at a salary of from \$900 to \$1,000. Mr. McGuire's salary has been increased to \$700.

Shame on our schools that make the names of Homer and Horace, Sophocles and Virgil, Xenophon and Livy more familiar than the names of Longfellow and Irving, Bryant and Emerson, Whittier and Lowell. Our own literature is nobler, purer, more inspiring than anything that Cesar wrote or Homer sang, and yet we are content to let the great masses of our children pass through our schools without giving them any just idea of who our best authors are, or of what they wrote. This must be reformed and that speedily. The glory of a nation is its literature; the glory of our schools should be that they teach literature.—*Educational Courier*.

The Free School system, or, as it is now termed, "gratuitous education," is a question that is rapidly coming to the front in England. Mr. Bright, M. P., is not in favor of it. In his speech at Street, Oct. 12th, he says: "I think that a good deal may be said for free schools in many circumstances, and in other circumstances there are some things which may be said against them. But this, at any rate, I will say without hesitation—that I think as a mere burden upon parents the payment of a penny or two pence or threepence, whatever it may be, for a child for his week's education is not a burden from which conscientious parents ought to shrink. That is my view; for, after all, I suppose there are very few laborers' families who pay more for the education of their children at a board school than the price of a quart of beer a week.

Recently a number of pupils in Walkerton, Canada, engaged in a fight during the "noon spell," but outside the school premises. For this they were punished corporally by the head master. Two of the belligerents thus chastised were sons of his honor, Judge Barrett, who indignantly repudiated the legal right of the teacher to inflict punishment under such circumstances. It was not claimed that the castigation was excessive, but simply that the fault having been committed outside of the school grounds, the teacher

had no authority. Judge Cameron, who tried the case, ruled otherwise, and it is well for the discipline of schools generally that the teacher has been upheld. The law on this point in the United States varies in different States, but the general ruling of judges is that a teacher has jurisdiction over his pupils from the time they leave home until they return to it.—*Teachers' Institute and Practical Teacher.*

The Normal School Literary Society held their regular meeting last Friday night. The meeting opened with Mr. L. K. Fallis in the chair. The musical part of the entertainment consisted of a piano duet by Misses Smith and Forsythe, a song by Miss Davis, and a quartette by Misses Lindsay and Hart and Messrs. Allen and Wilson. A reading was given by Miss Scott, the teacher of elocution, and another by Miss Raines; also a recitation by Mr. Elliott. A very instructive essay on "English" was read by Mr. Sinclair. The *Gleaner*, which was read by the editors, Miss Reazin and Mr. Bolitho, contained a number of amusing and instructive articles. The debate on "Women's Rights" was postponed till next meeting. The entertainment was in every respect a success.—*Toronto Mail*, Nov. 21st.

Writing music does not receive half the attention it should. We should think it strange if we taught our children to read words but not to write them, yet this is the method pursued largely in music. Writing the representation of music which is heard is a good mental discipline, and should be practised in the school.—*School Music Journal.*

Mr. W. C. Allin, head master public school, Orono, has been re-engaged by the Trustee Board for another year. Mr. Allin has given pronounced satisfaction since taking charge of the school, and the trustees are to be congratulated on again retaining his services. Miss Florence Reid, teacher of the second department, has also been re-engaged. Miss Reid is a favorite with her scholars, and as a teacher gives entire satisfaction. Miss Walker has been engaged as teacher in the junior department in place of Miss Brown, retiring.

Official.

The following circulars have been issued by the Education Department:—

ONTARIO SCHOOL OF ART.

SIR.—I am directed by the Hon. the Minister of Education to inform you, that in accordance with the new regulations, any College or School may, for the purpose of taking the Departmental Examination, and with the consent of the Education Department, be affiliated with Toronto Art School.

As this Department intends exhibiting Educational work and appliances at the Colonial Exhibition to be held in England in 1886, you are invited to send specimens of pupils' work for exhibition, also to take part in the annual Departmental Examination in Drawing.

The next examination will be held during the first week of March, 1886, and can be conducted in your own school without any expense, except the payment of a presiding examiner.

The pupils can be examined in one or more of the following subjects in Grades A or B:—

Primary Course. Grade B.

(1) Freehand Drawing from flat examples. (2) Practical Geometry. (3) Linear Perspective. (4) Model Drawing. (5) Memory and Blackboard Drawing.

Any pupil holding two proficiency certificates in the Primary Course, or who has passed any examination required by the Department, shall be entitled to enter the Advanced Course.

Advanced Course. Grade A.

(1) Shading from flat examples. (2) Outline Drawing from the round (casts or nature). (3) Shading from the round. (4) Drawing from flowers and objects of natural history. (5) Advanced Perspective. (6) Descriptive Geometry. (7) Drawing from Dictation. (8) Machine Drawing. (9) Building Construction. (10) Industrial Design.

CERTIFICATES AND MEDALS.

Open for competition to Students in all Colleges and Schools in affiliation with the Ontario School of Art.

Certificates.

A proficiency certificate will be awarded for each subject. Any pupil who passes in all the subjects in the Primary Course shall be entitled to a certificate known as grade B, and any pupil who passes in the first eight subjects of the Advanced Course shall be awarded a certificate to be known as grade A. Pupils holding certificates on Machine Drawing and Building Construction may omit drawing from Flowers, and drawing from Dictation, when competing for Certificate, Grade A.

The holder of a Primary certificate will be legally qualified to teach drawing in a High School, Model School, or Mechanics' Institute; the holder of an Advanced certificate, in an Art School. The Education Department will accept a Primary certificate, in lieu of the non-professional examination in drawing, for any class or grade of public school teachers' certificate.

Medals.

A Gold Medal will be presented by the Minister for Advanced Course, Grade A, on the following conditions:—

1. The candidates must be *bona fide* students in regular attendance at the college or school competing.

2. Samples of work must be given in (a) *Ornamental Design, and Outline, and Shading from the Antique*, done during the session. There is no restriction as to the character or manner of execution, nor the time occupied in this work. (b) *Drawing from Antique, full figure*. The drawing shall not be less than two feet in height, on white paper, in chalk, either with or without the aid of stump, background shaded or plain; work to be finished in 36 hours, regular school time, without assistance. (c) *Original Design*. This is to be executed in pencil, on paper provided by the Department, size of drawing not less than six inches by four inches; time four hours. The designs recommended are those suitable for wall paper, carpets, oil cloth, etc.

All work sent for competition will be retained by the Department for exhibition.

A Bronze Medal, open to competition, will be given for the highest number of marks in Grade B.

Work done during the Session.

Any work done during the session, sent for exhibition, will receive consideration in deciding upon the value of a candidate's examination papers when writing for a certificate; but all general work for competition for the Gold Medal must be received at the Department not later than the 15th February, 1886.

Drawing copies will be loaned to any college or school deciding to send class work for exhibition.

As it is desirable to show older nations the educational advantages to be obtained in this province, it is intended to exemplify, so far as possible, the work done in both public and private colleges and schools, by both sexes: therefore any class of pupil's work, or any other exhibits of historical interest, whether local or general, will be much appreciated. If exhibits of value are sent, every precaution will be taken to ensure safety of return to the exhibitor.

Should you decide to exhibit, please let me know at an early date the class of work and probable amount of space required.

Yours truly,

S. P. MAY,
Superintendent.

EDUCATION DEPARTMENT,
Toronto, 1st October, 1885.

COLONIAL AND INDIAN EXPOSITION, LONDON, 1886.

TORONTO, 8th October, 1885.

SIR, In addition to the circular recently sent to you, I am desired to inform you that it is the intention of the Minister to provide facilities for illustrating, by way of photographs, or suitable sketches, the various Educational Institutions of the Province.

Should you, therefore, send to this Department a photograph, or other approved sketch of the institution over which you preside, it will be displayed with others, at the forthcoming Exposition.

The photograph should be (as nearly as possible) of the uniform size of 14 inches by 16 or 18, and be mounted with a wide margin on white card board. If, however, you are not able to send one of

the size indicated, please mention the size which you can furnish.

The most effective way of providing a good picture would be to have a perspective sketch carefully made in sepia and then photographed. This, however, is only by way of suggestion.

An early reply will oblige.

Your obedient servant,
ALEX. MARLING,
Secretary.

COLONIAL AND INDIAN EXPOSITION, LONDON, 1885.

TORONTO, 3rd October, 1886.

SIR.—This Department having arranged to take part in the Colonial and Indian Exposition, to be held in London early in 1886, the Minister of Education desires to invite your co-operation in the matter.

The Minister wishes to secure the fullest information for the purpose of showing on that occasion the Educational Statistics of the Province. He will therefore thank you to have filled up and returned to the undersigned, at your earliest convenience, the accompanying Schedule.

Any additional information in regard to the Institution over which you preside will be thankfully received.

Your obedient servant,
ALEX. MARLING,
Secretary.

Literary Chit-Chat.

"The Place of Art or Education," a lecture by Thomas Davidson, has been recently issued by Ginn & Company.

The fourth sermon in the Cornell University series was by the Rev. H. R. Haweis, M.A., on "Religious Consciousness." Mr. Haweis is an English clergyman, and an author of some repute. The *Literary World* describes him as "short, lame, black-whiskered, bright, independent, and amusing," and as one who "does and says about what he pleases."

Funk & Wagnalls, of New York, announce for immediate publication a Biographical Sketch of Adelaide Neilson. The book is superbly illustrated with nine portraits by Sarony, and is written by Laura C. Holloway.

Ginn & Company are to publish about 1st of January a volume that promises to be interesting to students of classical literature. It is entitled "Studies in Greek Thought," and consists of seven essays by the late Professor Packard, of Yale.

A volume of fables, chiefly by Æsop, but supplemented from other sources, by Miss Stickney, will be the next forthcoming in Ginn & Co's "Classics for Children."

"The Wit of Women," by Miss Kate Sauborn, issued ten days ago (Funk & Wagnalls, New York), is already in its second edition. The work is receiving many warm commendations by the press.

The *Century* for December will contain the last poems, seven in number, of the late Mrs. Helen Jackson, ("H. H.") and the fullest account of her life yet published; also a frontispiece portrait.

Ticknor & Co. are soon to publish a biography of Longfellow, by his brother Samuel. It will consist mainly of letters and diaries written by the poet while abroad and illustrated by himself with pen and ink drawings which will be reproduced.

Professor Dowden is preparing a new biography of Shelley, at the request of Sir Percy and Lady Shelley. He will have access to an immense amount of material, consisting of pamphlets and magazines, manuscripts and unpublished letters, and will therefore have the opportunity of giving us at last something satisfactory in the way of a life of this unfortunate poet—unfortunate no less after life than before it.—*Christian Union*.

Dr. Schellman's new volume on Tyens, to be published shortly by the Scribners, is a splendid royal octavo volume, illustrated with colored plates, as to contain an account of his excavations on the plains of Argos. It will be full of interest for all students of classical antiquities.

London *Truth* says that the *Pall Mall Gazette* was quite wrong in stating that the proof sheets of the new series of the "Greville Memoirs" were "scanned" by the Queen.

"The Youth's Companion," is said to have reached the enormous circulation of 350,000. It will soon enter upon its sixtieth year, and promises to be, if possible, fresher and more attractive than ever, if we may judge from the list of popular writers announced as contributors.

The Putnams will publish soon for the American Historical Society a monograph on the "Political History of Canada," by Prof. Goldwin Smith.

Question Drawer

QUESTIONS.

When does Christmas vacation begin and close? A. X.

If a teacher obtain a certificate for term of three years and, during that time, he is out of a school six months, would he be allowed to teach six months after the expiration of the three years' term? T. H.

Kindly insert the following in the "Question Drawer" of JOURNAL:—"So that the study of any one plant, traced from the seed it springs from, round to the seeds it produces, would illustrate the whole subject of vegetable life and growth."

In this complex sentence "traced—produces" is evidently an attribute of "study." It cannot be called an adjective or participial phrase, as phrases have no finite verbs in them; and if you call it an adjective clause, how would you dispose of "traced from the seed," in analyzing it? How should it be explained to a class? What kind of attribute should it be called? C. B.

1. A commission merchant receives 125 bbls. of flour from A, 150 bbls. from B, 225 bbls. from C; he finds on inspection that A's is 10 per cent. better than B's, and C's $5\frac{1}{2}$ per cent. better than A's; he sells the whole at \$7 a hbl. and charges 4 per cent. commission. How much does he remit to each?

2. A person leaves \$12,670 to be divided amongst his five children and three brothers, so that if the legacy duty has been paid each child's share shall be twice as great as each brother's. The legacy duty on a child's share being 1 per cent. and on a brother's share 3 per cent. Find what each shall receive.

PUPIL A.

"Earnest Teacher" is in a quandary respecting material for Friday afternoon exercises and requests us to suggest any plans he could adopt to suit the occasion. He does not think recitations sufficient, and he "hath no music in his soul"—at least, he never cultivated his voice. He never attempted "anything more than ordinary school duties," and this now regulation presses him down. He thinks illustrations of gravity, physiology, natural philosophy; charades, practical puzzles, spicy recitations and instructive readings would "fill the bill," and asks what books he might procure to help him. He reads the CANADA SCHOOL JOURNAL "eagerly" every week and looks to it now to give him assistance. Perhaps some of our friends who are successful in catering healthy amusement for their classes will kindly help a "forlorn brother," as well as others who may need a hint.—Ed. C.S.J.

ANSWERS.

A. X.—Begins 24th December, and ends 2nd January.

T. H.—In our opinion when a teacher obtains a certificate for three years, it means three years and no more. There is a Regulation for extending the time.

C. B.—We wish our friends would answer these queries.

"Subscriber" (M. A. B.) tenders the following answer to M. L. F.'s question in No. 36; "I think the object of 'suspect,' as used in the third stanza of 'An Incident at Ratisbon,' is the clause understood (that he was wounded). M. A. B. wishes to see opinions of others.

In the SCHOOL JOURNAL of July 30th, "A Subscriber" asks for a solution to the following:—A man borrows \$1000 at six per cent. interest, principal and interest to be paid in ten equal annual instalments. What will each instalment be?

To this a solution was given in the JOURNAL of August 13th, which I think was incorrect, both in principle and result. Please allow me space to give a solution.

As I understand it, the instalment paid at the end of any given year, is made up of the interest accruing during that year + a cer-

tain part of the principal. On experiment with any assumed amount, it will be found that the portions of principal paid off from year to year form a series of ten terms in geometrical progression, and increase by a ratio of 1.06. The last portion of the principal paid off + its own interest for the last year, will constitute the last instalment.

We have n , the number of terms, = 10.

r , the ratio, = 1.06.

s , the sum of the series, = 1000.

to find l , the last term, or last principal paid off.

$$l = \frac{(r-1)sr^{n-1}}{r^n - 1} = \frac{(1.06-1)1000 \times 1.06^{10-1}}{1.06^{10} - 1} = \frac{60 \times 1.06^9}{1.06^{10} - 1}$$

= \$128.1773 = last principal paid off. \$128.1773 + its interest for the last year = \$135.8679 = the annual instalment.

(Prove this by going through the process of adding the interest and paying off the instalments for 10 successive years, and it will be found correct, excepting the very slight error arising from dropping decimals.)

H. J. BROWNLEE, Eramosa.

NOTE.—There are several interesting questions before our readers to which we have invited their attention. We shall be pleased to receive answers as early as possible. Our object in opening this department in the JOURNAL was to elicit opinions from our numerous friends. Kindly respond.—ED. C. S. J.

Literary Reviews.

PEASE'S SINGING BOOK, for the use of High Schools and Singing Classes. Ginn & Co., Boston, Mass.

According to the Preface "this singing book is designed for those who wish to learn to read music and really understand it." This has been the design of many a book on the same subject for years gone by and yet how very few persons can take up a piece of music and sing it at sight! There must be something wrong, it may be the notation, or perhaps it is the art of teaching it. If the former, why not change it? If the latter why not improve it? The book before us is evidently intended to simplify the method of instruction. The author has, in his aim, brought three systems to bear, namely, (a) the Tonic sol-fa (to which he gives credit,) for tiny measuring, (b) the numerical notation, and (c) the staff notation. He apparently presumes, however, that the three methods are already known to the teacher for there is very little instruction given,—the book being mainly a compilation of exercises. That it is needful to place the figures in Tonic sol-fa time measures shows weakness in the number system, and that numbers are employed to interpret the notes of the staff indicates that difficulty exists in singing from the notes. The pupil has therefore to learn the figures to explain the notes, and afterwards to learn the Tonic sol-fa to comprehend the figures. Evidently the next course will be to devise something else whereby he might readily grasp the Tonic sol-fa, and so on, *ad infinitum*. It is well Mr. Pease intends his book for pupils of *High Schools*, because the technical language used is rather abstruse for less favored individuals—the first exercise is on "The Tonic Triad"—and it may be possible that those few whom it is designed will "learn to read music and really understand it," but we fear that no one else who tries to do so, will succeed by the use of Pease's Singing Book. The exercises are well selected, sweetly harmonized and arranged, many of them, for four voices, and it is a pity that their beauties are shut out from general use by the want of some comprehensible means of interpretation.

A FIRST HISTORY OF ENGLAND, by Louise Creighton. Rivingtons, Waterloo Place, London, Eng. Third Edition.

Creighton's Epochs of English History has an honored position as a text-book in our schools. The author of one of the portions of that book is also the author of the compact little book before us. It gives in good, clear type the leading events of each reign, is written in language suited to the comprehension of children of early age, and the events are related in such a pleasing manner that it helps to fasten the recollection of them in a child's memory. It is debatable whether a text-book on history should be placed in the hands of children so young as the diction of this book evidently indicates it is intended for, but if the subject is to be taught from a book, we know of none better adapted to the purposes than this First History.

SEED THOUGHTS FOR THE GROWING LIFE. From Robert Browning and Others, by Mary E. Burt. Price 20 cents. The Colegrove Book Co., Chicago.

This little manual is composed of gems extracted from Browning and several other authors. As selections for memorizing they are excellent, and would do much in cultivating a pure, moral tone, lofty sentiment, and a love of refined literature.

FOR YOUNG PEOPLE. The oldest and every way the best young people's paper in the country is the YOUTH'S COMPANION, of Boston,—a weekly paper, published in quarto form, and finely illustrated. It grows fresher as its years increase, and has been familiar to us for a generation. It has perpetuated itself and swelled its subscription list to 350,000 by the generosity of its publishers and the ability with which it has been conducted. We know a pair of bright eyes that snap every week at sight of it. The publishers will send your sample copies, or will send you the paper every week to January, 1897, if you send the subscription price, \$1.75 now.

DOMESTIC HYGIENE by George Wilson M.A., M.D., edited with notes by J. G. Richardson M.D., P. Blakiston, Son, and Co. Philadelphia. Williamson & Co. Toronto.

This is an English work, slightly Americanized. It is full of sound sense, clearly expressed in language which people in general can easily understand, for, though written by one doctor, and edited by another, it is free from all professional technicalities.

Notwithstanding this, the book is strictly scientific in tone, and presents the most advanced thought in hygienic matters, except perhaps in one respect; and this exception is the liquor question. On this subject it takes the comfortable old English view held by Prof. Goldwin Smith, and others in this country, that temperance does not imply total abstinence, setting forth how much beer, wine, or spirits a man may drink every day without injury. However, the general conclusion of the author is that abstinence is preferable, and, if residing in Canada, Dr. Wilson might perhaps, vote for the Scott Act.

In regard to bathing, the author, like most old country people, is an advocate of a cold bath on rising in the morning. This will not suit the average Canadian. He is not the full-blooded, over-fed, feverish sort of creature that the Englishman is, and does not need refrigeration at sunrise all the year round. The book does not sufficiently advocate the hot bath which is far superior in every respect to the cold bath. Nor does it sufficiently condemn the tepid or luke-warm bath which is now regarded as peculiarly relaxing.

Still no one can read this volume without benefit. It has much of the plain practical sense of a book that was once very popular and very useful in English households, Dr. Buchan's Domestic Medicine. Dr. Wilson deals however with the prevention of disease rather than with its cure.

The Hygienist is not a man to be loved. He is usually wondrously skilled in death rates, drains, cess pool traps and similar revolting subjects, and he is apt to be a monomaniac in regard to dirt. Dr. Wilson's book deals with these and all kindred matters with rare taste and judgment. His advice to people about to build or buy homes for themselves is especially valuable. There are also important chapters on the prevention of zymotic diseases, food and diet, exercise, recreation and training, cleanliness and clothing, hereditary influence in insanity, cancer, and scrofula. In fact the whole book is characterized by practical wisdom—the outcome of profound study of the physical needs of humanity, by a man of broad views and deep and tender sympathy. The American edition is beautifully got up on good paper, with clear type, &c., and is well worth the price (\$1.00).

DR. WATTS' IMPROVEMENT OF THE MIND. Edited by S. N. Fellows D.D., of the State University of Iowa.

This is a new edition of the above work, published by A. S. Barnes & Co., New York. Price 75 cents. All of the original book that was of a theological character, or that applied more especially to the age and country of the author, has been eliminated. A very full table of the contents has been added, and throughout the work leading ideas have been emphasized by the use of larger type. Every student, especially if he be a teacher as well, should read this work. We are very prone in our eagerness for the new, to overlook what is really valuable in the old. It is worthy of remark that, although the first edition of this work appeared more than one hundred and fifty years ago, yet we find a modern educationist writing as follows regarding it: "Watts' little volume cost him twenty years of capital thinking, and it is still the most comprehensive, most suggestive, and best of its kind. It is not only unequalled, but incomparable, so far below it in my estimation, are all its competitors." Perhaps some will think this writer too enthusiastic in his praises. Be that as it may, we believe no one who reads this little book will differ from us, when we say that the publishers have rendered valuable service in putting forth this attractive edition of an almost forgotten book.

A music seller announces in his window a sentimental song, "Thou hast loved and left me," for three cents.