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THE EDUCATIONAL JOURNAL.

Consolidating "THE EDUCATIONAL WEEKLY" and "THE CANADA SCHOOL JOURNAL."

Subscription, $1.50 a year in Advance.

TORONTO, APRIL 1, 1895.

Vol. VIII. No. 22.

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Table of Contents.

Editorial Notes.

A LETTER, enclosing one dollar, has been received from Peterborough without signature. Will the writer please supply the omission by sending his or her name and address?

IN our notice of the coming meeting of the Ontario Educational Association in last number, we unintentionally omitted the Historical Association. This important Association will, no doubt, very soon be made an integral part of the Provincial Association. Its meetings will be held on Tuesday and Wednesday, the 16th and 17th of April. It has an attractive programme, including the names of several prominent and able educators.

WE frequently receive letters or postal cards from subscribers asking to have the addresses of their papers changed to such and such a post office, but failing to inform us of the address to which it is at present being sent. Of course, we cannot find the name among thousands on our mailing lists, and, consequently, cannot comply with the request. In asking for change of address, please, in all cases, give the address from which, as well as that to which, the change is to be made. Careful attention to this request will prevent many mistakes and save us a great deal of trouble, as well as insure prompt attention to requests.

THERE is not a little point and suggestiveness in the following paragraph from *The Outlook*:

"President Harper, of Chicago University, is reported to have said in a recent newspaper interview that 'the University of Chicago will encourage football to the fullest extent, especially intercollegiate football.' We are moved to inquire respectfully why a university should encourage the playing of football any more than the playing of lacrosse, tennis, golf, one-old-cat, whist, billiards, or the flute. We have labored under the impression that the function of the university is to encourage a healthy appetite for a knowledge of the 'best man has thought and said in the world,' and we are still of the opinion that it would be well for the universities of this country to confine themselves to their true function."

THE following, from the lips or the pen of the eloquent Rev. Dr. Maclaren, of London, Eng., was primarily intended, we suspect, for the benefit of Sunday-school teachers, but the principles of education are everywhere the same, and the paragraph contains some hints which can scarcely fail to be helpful to many a teacher in the public and private schools in every land in which the words may be read:

"I do not think it is a good thing to break down the children's bread too small. A wise teacher will now and then blend with the utmost simplicity something that is just a little in advance of the capacity of the listener, and so encourage a little hand to stretch itself out, and the arm to grow because it is stretched. If there are no difficulties there is no effort, and if there is no effort there is no growth. Difficulties are there in order that we may grapple with them, and truth is sometimes hidden in a well in order that we may have the blessing of the search, and that the truth found after the search may be more precious. The tropics, with their easy, luxuriant growth, where the footfall turns up the warm soil, grow languid men, and our less smiling latitudes grow strenuous ones. Thank God that everything is not easy, even in that which is meant for the revelation of all truth to all men. Instead of turning tail at the first fence, let us learn that it will do us good to climb, and that the fence is there in order to draw forth our effort."

NEW, like old, Scotia produces clever and enterprising sons, who are to be found in every land the sun shines on, and generally some of them not far from the van in every advance column. Like her mother land, too, Nova Scotia is noted for the excellence of her schools and colleges. There is reason to fear, however, that, from some occult cause, the products of these institutions do not find their way to the legislative halls in such numbers as might be expected in a province which is said to have more politics to the square inch than any other country under the sun. These observations and inferences are ventured as the result of a somewhat careful but unsuccessful study of the following literary production, which is, we are told by a "Stable Keeper" who writes to the *Halifax Herald*, Section II. of a printed bill that is, or was at the time of writing, before the House of Assembly:

"II. On and after the building of the slaughter house mentioned in section 9, the city council shall operate the same, and, after a day to be fixed by resolution of said council, *no person*, company, or corporation, *shall build, maintain, operate, or slaughter any animals within the said city, or within a radius of four miles from the city hall, intended for the food of man.*"

It is no wonder that some of "Stable Keeper's" friends are divided in opinion as to the true interpretation of various clauses; one, for instance, who is a truckman, maintaining that the bill does not apply to horses, because horses are not "intended for the food of man," and another contending that these last-quoted words refer to the city hall, and have no reference to animals. "Stable Keeper" himself protests that, as he "doesn't want to build or slaughter any animal," that part of the bill does not disturb him, but that he has horses which he must maintain and operate, or his family must starve. Perhaps the members of the fourth classes in composition in some of our Ontario schools might translate the clause so as to relieve his anxiety.

English.

All articles and communications intended for this department should be addressed to the ENGLISH EDITOR, EDUCATIONAL JOURNAL, Room 5, 11½ Richmond Street West, Toronto.

LESSONS IN ENGLISH METRES.

The basis of English metres is accent; the measure of the verse being made by a regular succession of accented and unaccented syllables. Children almost unconsciously recognize the charm of metrical language, and there is usually little difficulty in bringing them to an intelligent recognition of the characteristics of different metres. The easiest plan is to take some passage of well-marked rhythm, and have the class, while the teacher slowly reads aloud, or everybody reads aloud, mark the fall of the accent by beating with the finger. This exercise should take in not only pieces like *Lucy Gray*, where the accent falls on every other syllable, but those like Sangster's *The Rapid*, where the unaccented syllables are more numerous, or Longfellow's *Wreck of the Hesperus*, where they are irregular.

(1) The main point in this initial work is to recognize the ACCENT; and the teacher may neglect everything else for the time. It is very necessary at the outset that the pieces he chooses for class exercises should be of regular measure, otherwise he may do violence to the poetic variations (see III.) of the measure and read with wrong emphasis in order to restore the regularity.

When the class has caught the idea of an accented as against an unaccented syllable, written exercises may be given to examine the metre of various verses, in which the pupils will mark the fall of the accent by ′ and each unaccented syllable by x. For example—again the teacher takes care to choose fairly regular pieces:

" He wrapped her warm in his seaman's coat,
x ′ x ′ x x ′ x ′
Against the stinging blast."
x ′ x ′ x ′
" All peacefully gliding, the waters dividing."
x ′ x x ′ x x ′ x x ′ x

(2) The second step is to recognize the FOOT. The class is asked to mark the accent with the finger as at first; but the teacher (taking a regular stanza) at the end of each line asks the number of accents in the line, then the number of unaccented syllables. For example:

" You say that two at Conway dwell,
And two are gone to sea,
Yet you are seven!—I pray you tell,
Sweet maid, how this may be."

The class will see that there are in each line four accents, and that there are four unaccented syllables. The teacher asks, *Are the accents and unaccented syllables jumbled in all together, any way, or is there a regular arrangement?* The class will then discover that there is a regular arrangement, that the syllables are arranged x ′ x ′ x ′ x ′, four sets of x ′ in each line. Continuing, they will find in

" The honeysuckle round the porch has wov'n its wavy bowers,"

there are seven sets of x ′.

In

" Not a word to each other; we kept the great pace,"

there are four sets of x x ′.

In

" All peacefully gliding, the waters dividing,"

there are four sets of x ′ x.

After further examination of regular measures, the teacher may introduce the term FOOT, as the name of each regular set or group in the metrical line. Exercises should then follow on paper, in which the class will mark the accented and unaccented syllables as before ′ x, and in addition will divide the line into feet by a mark | , giving a formula with each line; as,

" The armaments which thunderstrike the walls."
x ′ | x ′ | x ′ | x ′ | x ′ | =5 x ′.

III. The next point to observe is the VARIATION of the metre. The great fault of reading poetry—the sing-song that is the despair of all teachers, and the anguish of all hearers—lies to a great extent in a failure to recognize variation in the metre. The boy with a good ear for commonplace rhythm tries to read,

" It was the schooner Hesperus:"
x ′ | x ′ | x ′ | x ′ |
instead of
′ x | x ′ | x ′ | x ′ |

We must insist on reading poetry nearly as we read prose, not letting the normal metre run away with us. Variations are of various kinds, and the interest of the class can be greatly aroused in the effort to detect them. The teacher should introduce these variations in skilful gradation.

(*a*) Variation by substitution of a different foot,

| " Blue were her eyes as the fairy flax,"

(*b*) Variation by using ′ x for x ′ in the first foot—reversing the accent.

| " And he watched how the veering flaw did blow,"

(*c*) Variation by an additional x in each of the first two feet.

" 'Twas moonset at starting; but while we drew near."

(*d*) Variation by omitting one x from the first foot.

" Leave me, comrades, here I drop."
′ x | ′ x | ′ x | ′

This last departure, the apparent incompleteness of the last foot, which lacks the x, is so common and necessary as not to seem a variation. It will be remarked that if the x were present as "dropping" instead of "drop" it would necessitate a double rime "stopping"; and the double rime in English is difficult to carry on successfully.

(*To be continued.*)

TEACHING GRAMMAR.

Grammar is the knowledge of the uses of words in expressing thought. The chief purpose in the study is to discover these different uses of words, and to see how groups of words are employed to perform the office of single words in sentences.

(1) The first step in teaching grammar is to make plain the constituent elements of the sentence. These were shown in our last article to be subject, predicate, and the word which shows what relation exists between them. This last is called *verb* (*the* word) or copula (*the* connective). It is *the* word, that is, the *essential* word, in the sentence, because it is essential to all thought that the relation between subject and predicate shall be discerned. Of all the *connecting* words in the sentence the verb or copula is the chief in importance. These three functions of words, viz., to denote the subject, to denote the predicate, and to denote the relation discerned between subject and predicate, are the fundamental ones. These give the three uses of words that are named nouns, attribute words (adjectives), and verbs (copula).

(2) The next step in learning grammar is to discover the different uses of the words employed to denote the subject, the predicate, and the relation between them, or copula. Here it is important that the learner dwell long enough to see the fundamental distinctions between the uses of these words, which we call parts of speech. The best way to discover these different uses is to form a thought about some object which he wishes to express, and then observe the office of each word in expressing it. To illustrate:

Suppose that each member of the class has an apple. Attention is directed to the color. Immediately each declares his judgment about his apple; it is green, or red, or russet, as the case may be. Note the analytic-synthetic movement of the mind in distinguishing the color, and at the same time seeing it as united in the subject, or thing, apple. It is one of the attributes by which the thing, apple, is distinguished from other apples or other things. The device for expressing this judgment is the words, "The apple is red," or, "The apple is green," in which the attribute is *affirmed* of the subject. Words thus used to denote attributes of subjects of thought are called *adjectives*. We study the apples further by tasting them. The green apples are sour, the red apples are sweet, the russet apples are bitter. We now distinguish two attributes of each apple; the one is made more prominent than the other by being used as a predicate. But when we say "green apple" there is an implied relation of subject and predicate. It is understood that the apple is green.

After some such method of the study of actual things, and of reflection upon the uses we make of words in expressing our thoughts, until the adjective relation of words is clearly seen, we continue our study of the apples. Some of the apples are dark red; others, light red; others, grass green, etc. We are now discriminating between the attributes of these apples, and use words to show these distinctions. "Dark," "light," "grass," are attributes of the other attributes, which is a different use of words from that of adjectives. The grammatical name of this class is *adverb*. The name is merely technical. The literal meaning of the word has no application to its use in expressing the thought.

When the distinction between the adjective and the adverb is made clear by the study of many different things, after the manner indicated, the study of the apples can be renewed by placing them in different places—on the teacher's desk, on the floor, on the stove, on Mary's desk, etc. The pupils now distinguish one apple from the others by describing them as follows: "The green apple is on the teacher's desk," "the red apple is on the stove." Now the attribute pointed out is each apple's relation to other objects. It is just as much adjective as before, for it is the attribute of the apple that is considered. Here a group of words is used instead of one. Only children who have developed some power of thinking can follow this lead, but the supposition of the writer is that it is such children that are entering upon the study of *grammar* considered as the science of the sentence. Up to this point the child has had much instruction and training in the correct use of language, if he has been properly taught. He has learned the rules of good usage through his language training. He studies grammar to discover how the rules came to be.

Now, to describe the apple which is "on the teacher's desk," the learner sees that to express that relation a new use of a word has been made. The apple might have been *under* the desk, or *over* it, or *beside* it. But it is *on* it. I am still describing the apple by showing its relation to the desk. What is the word that tells this relation?

By some such method as is above suggested, the teacher can keep the child's conviction strong from the first, that words are used for the purpose of indicating our thoughts, and that they must always be studied in connection with the thoughts they express. It is the thought which determines the use of the word, and its use can never be known until the thought is known. This is the first truth to fix in the mind of the child beginning this study, and every lesson should tend to deepen the conviction. It will then be impossible for a person who has completed the school course to declare, as a teacher does in another place in this number, that whether "to eat" is a transitive or an intransitive verb depends upon whether you study Rigdon's grammar or Holbrook's grammar. That is, it is merely a matter of text-book authority. The writer was present at a grammar lesson in a county institute last summer where the teacher of grammar said, *sotto voce*, that if the statement should be made to the class that "it was the meaning in every case that must determine how to parse words and analyze sentences," only a small per cent. would understand what the statement meant. We thought that he was mistaken at the time, and became convinced of it later. . . . Until the pupils are able to see just what a noun does that an adjective cannot do, what is the peculiar office of a verb which no other part of speech can perform, and so on of all the others, it is vain to suppose that they can go on to the mastery of the greater difficulties of the subject. A knowledge of the parts of speech involves the knowledge of the entire subject of grammar. But it is only after one knows the subject that he sees this to be true.—*G.P.B. in an Exchange.*

CORRESPONDENCE.

LUCAN.—The word "John's," in "That house of John's was burnt," is to be explained rather than parsed. It is usually explained as a tautology, a double possessive—the possessive relation expressed by "of" being strengthened by the possessive suffix of the noun. No doubt the expressions, "This is mine," "This is John's," "This is something of mine," "Something of John's," were felt to be analogous, "John's" signifying thus the things owned, the ownership of John. Thus representing a distinct, independent notion, it was felt possible to use it partitively. "This is something (a house, a hat) of John's (=John's ownership)."

"The *then* minister." "Then" is a temporal adverb usually, but here used as a qualification adjective.

"They sang *themselves* hoarse." "Themselves" is a reflexive pronoun, plural, object of the verb "sing."

Are candidates for Public School Leaving Examinations supposed to read "Kenilworth" for composition?

We know of no such requirement.

SUBSCRIBER.—The rhetoric for a Public School Leaving should be very elementary. See Genung's "Outlines of Rhetoric" (Wm. Briggs, Toronto), and the appendix to "Notes to High School Reader" (Gage & Co., Toronto). The study of the sentence, paragraph, and the main figures of speech, with a rough idea of the qualities of style, should be ample.

SEARCHER.—(1) "Pair," in "two pair of boots," is as correct as "two pairs of boots," though more colloquial. "Pair" in such an expression is singular in form, but plural in signification. This peculiarity is very common with nouns of quantity; compare "four brace of pigeons."

(2) "Bushel," in "six bushels," etc., is a concrete noun.

(3) Nouns such as "Indian," "Englishman," are proper nouns; "oak," "negro," are common nouns.

A. B.—"The land of brown heath and shaggy wood," Scotland; "the king of dramatists," Shakespeare; "the land of the shamrock," Ireland; "the antlered monarch of the glen," stag.

M. C. P.—"This book is somebody else's," not "somebody's else." The latter expression is a New England school teacher's fad. The whole expression "somebody else" has grown into a compound pronoun, and is to be treated as such; as soon say "the Queen's of England crown," as "somebody's else book."

SUBSCRIBER.—(1) You refer to our parsing of "many," in "many a man," as an adjective (see JOURNAL, March 1), and point out that the High School Grammar (see p. 171*f*) treats it as an adverb. Space permits only a brief statement why our parsing is correct. It is this: originally "many" was used with singular nouns, as it is today with plural nouns, without any *an* or *a*. People said "many man" as they said "each man," or "ever-each (every) man." The "an" crept in later (thirteenth century chiefly), probably in analogy with "each a man," "such a man," which grew common about the same time. This, of course, did not interfere with the adjectival value of "many," which continued its qualifying force as before. It shows that analogy works even where the conscious thought of the speaker might condemn the expressions. (2) Similarly you want a reason why "two and two is four" may be regarded as correct as "two and two are four"; I can simply say that educated people use the former as well as the latter; they feel, no doubt, they are dealing with a quantity, two-and-two. Cf. "Why *is* dust and ashes proud?" (3) The common mistake with "like" and "as" is to use "like" as a conjunction where "as" is preferable. "He talks like (say 'as') I do"; but "he talks like me." (4) "Two times two are four" is a concise way of saying "two taken two times is four." The expression is built on the adverbs, once two is two, twice (thrice) two is four (six), four times two is eight, etc.

To educate a child perfectly requires profounder thought, greater wisdom, than to govern a state.—*Channing.*

For Friday Afternoon.

THE CHICK AND THE DUCK.

BY CLARA G. DOLLIVER.

Said a downy young duck
To a fluffy young chick,
"Come down to the water and swim!
By a fine bit of luck,
The right path I can pick,
And the horse-trough is full to the brim."

"I really don't dare!"
Was the prudent reply;
"I have often been cautioned, you know,
With the greatest of care,
To walk where it was dry,
And with giddy young ducks never go."

She replied with a sneer,
"To me it is clear,
To your mother's tail-feathers you're tied;
You run at her cluck!"
Said this naughty young duck,
"I don't think you have very much pride"

The chick hung his head,
While with blushes he said,
"I never have learned how to swim—
You see that by my toe;
But I would like to go—
I suppose I can walk on the rim."

With his thin yellow legs,
Like long scaly pegs,
He walked on the perilous rim;
He watched his friend dive,
And come up still alive,
Though she paid no attention to him.

His mother, the hen,
Called again and again,
But her darling child never replied.
With a motion too quick,
He had slipped—the poor chick—
And he fell in the water, and died.

—*Selected.*

For Arbor Day.

TREE PLANTING PÆAN.

The following stirring Arbor Day pæan was written by the late Rev. S. F. Smith, of Boston, Mass.:

Joy for the sturdy trees
Fanned by each fragrant breeze,
Lovely they stand!
The song-birds o'er them trill,
They shade each tinkling rill,
They crown each swelling hill,
Lowly or grand.

Plant them by stream and way,
Plant where the children play
And toilers rest;
In every verdant vale,
On every sunny swale—
Whether to grow, or fail,
God knoweth best.

Select the strong, the fair,
Plant them with earnest care,
No toil is vain;
Plant in a fitter place,
Where, like a lovely face,
Let in some sweeter grace,
Change may prove gain.

God will His blessing send,
All things on Him depend—
His loving care
Clings to each leaf and flower,
Like ivy to its bower,
His presence and His power
Are everywhere.

ARBOR DAY.

Plant in the spring-time the beautiful trees,
So that in future each soft summer breeze,
Whispering through tree-tops, may call to our mind
Days of our childhood then left far behind.
Days when we learned to be faithful and true;
Days when we yearned our life's future to view;
Days when the good seemed so easy to do;
Days when life's cares were so light and so few.

Oft in the present are we made to know
What was done for us in years long ago,
How others sowed in the vast fields of thought,
And, to us, harvests from their work are brought.

And, as we read in some tree's welcome shade,
Of the works of earth's wise men, which never can fade,
Thanks would we waft to the soft summer breeze,
Both to planters of thought and to planters of trees.

Then should we think, in our heritage grand,
We, too, belong to that glorious band,
Who, in word, or in thought, or in deed something do
To advance this old world somewhat on to the new.

As in the past men did plant for to-day,
So will we plant in this beautiful May,
Trees that in future shall others shade cool,
Thoughts that shall ripen for earth's future school.

—*Selected.*

TRIBUTE TO NATURE.

Tune—"America."

Of nature broad and free,
Of grass, and flower, and tree,
Sing we to-day.
God hath pronounced it good,
So we, His creatures, would
Offer to field and wood
Our heartfelt lay.

To all that meets the eye,
In earth, or air, or sky,
Tributes we bring.
Barren this world would be,
Bereft of shrub and tree;
Now, gracious Lord, to Thee,
Praises we sing.

May we Thy hand behold,
As bud and leaf unfold,
See but Thy thought;
Nor heedlessly destroy,
Nor pass unnoticed by,
But be our constant joy,
All Thou hast wrought.

As each small bud and flower
Speaks of the Maker's power,
Tells of His love;
So we, Thy children dear,
Would live from year to year,
Show forth Thy goodness here,
And then above.

—*Mary A. Heermans.*

PLANT FLOWERS.

Plant flowers; there's need for the beautiful
In our sordid lives of care,
For the plants of toil
Grow on fruitful soil
And crowd, ere we are aware,
Far more than they ought
From our daily thought
All things that are sweet and fair.

Plant flowers; there's room for the beautiful
In the fullest life's dull round.
Joy gives new life
For the world's keen strife,
And evermore may be found
Where beauteous flowers
Brighten busy hours,
Shedding cheer and light around.

Plant flowers; there's cheer in the beautiful
Which every heart should find;
And each flower bell
May weave a spell
Of beauty for heart and mind;
May tell of the hand
Which has made the land
Bloom sweet for all mankind.

—*Dart Fairthorne, in Vick's Magazine.*

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PUBLISHED SEMI-MONTHLY.

A JOURNAL DEVOTED TO LITERATURE, SCIENCE, ART AND THE ADVANCE OF THE TEACHING PROFESSION IN CANADA.

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Editorials.

SCHOOL REFORM IN RUSSIA.

THE hopes that were entertained at the accession of the young Czar of Russia that he would pursue a liberal policy, or at least make some concessions to his subjects in the direction of representative institutions and constitutional freedom, was somewhat rudely dispelled, some weeks ago, by his speech to the deputies from various provinces, who came to congratulate him on the occasion of the royal marriage, and to ask on behalf of the people they represented for some voice in their own government. He told them in effect, with a frankness which was almost brutal, that it was worse than idle for them to indulge in any such dreams, as he was resolved to maintain to the fullest extent the policy of absolutism which was so rigidly adhered to by his father. The announcement was a disappointment, not only to the subjects of his despotism, but to the lovers of freedom the world over, who had been hoping that a better day was about to dawn for the oppressed people of Russia, especially for the poor Stundists and other religious sects who are suffering so cruelly from official persecution, under the influence of the clergy of the national church. There is, however, a broad ray of hope in the reforms which are about to be tried in the schools within a limited area. The Russian Minister of Education has given notice that free and compulsory education is to be experimentally introduced into the governments of Kharkov, Poltawa, Kursk, and Voronetz. Teachers from these governments, as well as the school superintendents of the District of Kief, were invited to attend a conference on the subject to be held in St. Petersburg. The decision which has been taken is in keeping with the proceedings of the Ministry of Education during the last four years. One of the most famous teachers in Russia, Professor Larkoffski, of the University of Moscow, was sent to France to report on the French school system, and another delegate was sent to Sweden to report on the working of compulsory education in that country. The reports of these delegates were of an eminently satisfactory character, and no doubt exercised a great influence in bringing the authorities to the decision they have taken. It is believed that the reform will take effect at the commencement of the school-year 1895-6.

DO OUR SCHOOLS PROMOTE JOYOUSNESS?

A FEW weeks since a schoolboy in Cincinnati committed suicide by taking poison. According to the newspapers, the boy was despondent because of the low average he had taken in school, and sought in this desperate way to put an end to his troubles. The sad incident is well fitted to beget serious and searching enquiry by teachers and by parents into the working of the system which may be supposed to be in some measure responsible for this sad quenching of a young life. We do not know whether any vigorous and thorough investigation was made into the circumstances, but, if not, there ought to have been such an inquest. It is but seldom, we may believe, that the native buoyancy and hopefulness of youth can be so completely crushed out as to leave a young lad the victim of utter despair. But even one such incident suggests many questions touching the school systems of the day, which are worthy of the most painstaking thought. One of these questions, suggested by the New York *School Journal*, we commend specially to the attention of our readers. Very much is implied in it. "Does it (the school) cultivate the natural joyousness of children?" This does not simply mean, we take it, Does the school completely suppress the buoyancy of spirit which is so characteristic of healthy children of school age, but, rather, does it tend to such a result? If so, we may be sure there is something radically wrong with the system or the teacher. We know of our own observation that there is such a tendency in some of the Toronto schools, which are, on the whole, we take it, nowise inferior to those of other localities. We have, within the last year or two, known cases in which boys of average parts and brightness were found to be losing their natural joyousness and becoming morose and ill-natured, under the combined strain and restraint of school work and discipline. But the other day a mother was commiserating the hard case of her boy, who was being kept in night after night to complete work which he and many fellow-sufferers were almost habitually unable to overtake in the regular school and home-work hours. What joy in life can a young lad have who can hardly find time, except on Saturdays and occasional holidays, for a real, rousing game? What is more pitiable than a boy of eight or ten with prematurely staid gait and demeanor, and care-worn expression, at the age which nature intended to be filled with shout and laughter and merry antics? Our contemporary very fittingly quotes these words from Jean Paul Richter:

"I can endure a melancholy man, but not a melancholy child; the former, in whatever slough he may sink, can yet raise his eyes either to the kingdom of reason or of hope, but *the little child is entirely absorbed and weighed down by one black poison-drop of the present.* Think of a child led to the scaffold; think of Cupid in a Dutch coffin; or watch a butterfly, after its four wings have been torn off, creeping like a worm, and you will feel what I mean."

MORAL TRAINING IN THE SCHOOLS.*

WE have long been convinced that one of the most serious defects in our Public School system is the want of adequate provision for systematic moral training. This conviction we have often expressed. It grows stronger with every additional year of observation and experience. Probably there is not one of our readers who would hesitate to endorse heartily the statement that the training of the moral nature—in other words, the building up, as far as possible, of right and noble character—is incomparably the most important part of all true education. Yet how much systematic training of that kind is given in the average Public or High School? We know well that there

* SHORT STUDIES IN ETHICS. An Elementary Text-book for Schools. By Rev. J. O. Miller, M.A., Principal of Bishop Ridley College. Toronto: The Bryant Press, 1895. Price, 75 cents.

are many principals and teachers who personally feel the importance of this part of their work, and the obligation which rests upon every teacher in regard to it, and who do their best, in the face of the almost insuperable difficulties caused by a crowded programme and the absence of any systematic provision in the time-table, or by helpful text-book, to give it the attention its importance demands. Of course we shall be told that such training can be most effectually given incidentally, in the course of the daily work and discipline of the schoolroom and the playground; that the teacher of worthy character and high aims will find daily and hourly opportunities for bringing his or her influence to bear to this end, by both precept and example. This is unquestionably true, under certain conditions and within certain quickly-felt limitations. But we venture to assert that those teachers who are doing most in these ways to mould aright the characters of their pupils will be, as a rule, the readiest to feel and admit that their work in this direction is seriously hindered by the lack of systematic provision for thoughtful study of questions of right and wrong, for class-room talks about the nature and extent of moral obligations, etc.

Why not, then, have a place on the school programme for the discussion of such topics? And why not have a simple, suggestive handbook prescribed, either as a guide and aid to the teacher, or as a text-book for the pupils, to be used in connection with such discussions? If the views we have expressed touching the supreme value of the subject be admitted, the plea of want of time will be without weight or force. The fact must rather be recognized that there is no time for any study, no matter what, which interferes with that which is of first importance in school education. An insuperable difficulty, we shall be told, arises out of the differences of creed which abound among the supporters of the schools. "You cannot build up a sound ethical system save on a religious foundation. Hence you cannot discuss questions of morals apart from questions of underlying religious faith, and the moment you touch upon questions of faith you come into contact with the bristling points of sectarian controversy." For the same reason it is said to be useless to attempt to procure or prepare a text-book of morals for use in the schools, because it is impossible to construct such a book without trenching upon matters of creed in regard to which the denominations are at variance. We are here reminded that Dr. Ryerson at one time essayed personally the impossible task of preparing a text-book on morals, which he hoped would be acceptable to all, and that he conspicuously failed. Those, however, who remember the book in question know that it was foredoomed to failure by reason of its entering freely into the region of dogmatic theology, wherein it was certain not only to arouse sectarian criticism, but to come into contact with the scepticism of the agnostics and infidels, whose opinions must be respected in such a matter, as well as those of the representatives of the denominations. In all this we have never been able to find any sufficient disproof of the entire practicability of having a handbook of morals, or otherwise carrying on a course of definite and systematic moral training, which would not only be acceptable to Christian parents of all creeds, but also unobjectionable to unbelieving parents of good character.

We have been led to this re-statement of our views and convictions in regard to this most important matter by the receipt of a little volume which has just been issued by The Bryant Press, of this city, entitled "Short Studies in Ethics." This work came to hand too late to admit of its being read carefully through before writing this article. It is possible, therefore, that we may have overlooked passages which we might wish to except from the hearty concurrence and approval which we are constrained to give the book as the result of a careful reading of a considerable part of it. The author is Rev. J. O. Miller, M.A., Principal of Bishop Ridley College, St. Catharines. The brief dissertations are, we are informed and can readily believe, the outcome of the writer's experience in the institution over which he presides; are, in fact, more systematic reconstructions of his talks with his boys. Of the good effect of these talks he is so well convinced that he has been led to throw them thus into a form in which they may be used by others. The work is designed as "an elementary text-book for schools." It is, perhaps necessarily, didactic in form, a fact which might mar its excellence for the purpose, save in the hands of teachers who know how to use such a text-book as a provocative and stimulant of the pupil's own independent thought. In every other respect it impresses us as admirable. The arrangement is lucid and logical, the style is clear, and the language beautifully simple, without being, as that of such books too often is, spuriously childlike or childish; and the views presented are not only such as will, we are sure, in the main be approved by all thoughtful parents and guardians, whether professing Christians or not, but such as will commend themselves to the judgments and consciences of honest boys and girls. A mere enumeration of the topics briefly treated in separate talks or chapters will be suggestive. These are: duty, obedience, truthfulness, courage, purity, unselfishness, honesty, faithfulness, profanity, justice, benevolence, ambition, patriotism, bodily exercise, habit, industry, self-control, self-reliance, friendship, gentlemanliness, courtesy, repentance, character, conscience. The views presented under each of these heads are lofty and ennobling, without being visionary—such views as a father or mother with high ideals would wish to have ingrained into the very character of a son as he travels the perilous road from boyhood to manhood. No boy can fail to be made better from thinking and talking about such themes in their order, from week to week, until he has reached definite opinions and convictions in regard to each. And, of course, such independent thought and conviction, as the result of individual thinking, not of dogmatic teaching, is what the true teacher will aim at. Nor is there any more powerful or strengthening intellectual exercise. Illustrations drawn from facts of local or general history abound, and, if we are not much mistaken, will enable the book to be made, in the hands of a skilful teacher, intensely interesting to the boy mind. We had intended to give some illustrative quotations, but the unforeseen length to which this article has already reached forbids. We may do so in a future number.

We do not know whether this little book aspires to authorization by the Ontario Education Department, nor is it our intention to express an opinion upon its eligibility for that purpose. But we are heartily glad that such a book has been prepared. We feel sure that if a copy could be placed in the hands of every school teacher, especially those of the younger and less experienced, the result could not fail to be excellent. Finally, we would venture respectfully to suggest an inspection of the book by the Education Department, with a view to a reconsideration of the question of the use of some such work as a text-book. We may add that the book is beautifully printed and very neatly bound, and is creditable in every way to the publishers.

OBSERVATION has convinced us that too little attention, by far, is given in many of the Public Schools to training and practice in the art of reading aloud. No doubt it is, in many cases, difficult or seemingly impossible for the teacher to find time for the exercise, on the crowded programme. But the ability to read articulately, intelligently, and with proper pronunciation, inflection, and emphasis, is one of the most useful as well as pleasing of scholarly accomplishments. It may be made a source of enjoyment and a means of culture to many besides the reader. Whatever is neglected, training in the art of oral reading should never be crowded out.

Special Papers.

DESIRABLE TREES TO PLANT.

BY THE LATE R. W. PHIPPS.

It was the original intention to give here a full chapter on the best method of planting with a view to appearance, but want of space forbids. A few suggestions may be, however, given. We should consider to what trees our soil and climate is adapted. A tree of any variety, flourishing well, and throwing out branch and leaf in their season with strong and hardy life, looks better than another, however high its name in the catalogue, which, struggling, only keeps existence, and never arrives at the fullness it attains elsewhere. Then, another point, wonderfully neglected in setting out trees, is color. If you look abroad throughout the wonderful variety which nature offers here, you will see foliage of a pure cream color—of bright silver hue—of an infinite number of greens—of bright gold—of delicate brown—of rich crimson, and many more. We should notice what they are at the four seasons; we should also remember the height of the trees; that some can show well above those adjacent; and that some colors are ever most beautiful when set off by certain others. It is not as if our climate were unpropitious; on the contrary, trees of endless variety of form—of infinite charms of color—flourish luxuriantly here. And we shall find that if we take advantage of the variety, and plant with a remembrance of the effect one tree has near another, that we shall soon have charming pictures; and shall also have supplied a background of foliage which, seen from another point, will itself form a picture equally charming. Our trees—whether plantation, wind-break, or clump—will consist of varieties sufficiently near for pleasing comparison and advantageous contrast, yet not in that general jumble of indistinguishable foliage which renders the eye careless, till it passes trees as pebbles in a walk. And how easily and cheaply improvable are our surroundings! I visited lately two farm houses. Opposite each ran the same high bank—in both farms almost useless land. But in one case it was a barren hill seared with dry water gulleys. In the other it had been ten years planted, and now a beautiful growth of trees—so placed as to display in each its particular beauty—crowned the summit and came half way down the slope; the lower slope had clumps of shrubs, cared for and in luxuriant growth. The difference—the superiority of the last residence, from this little piece of forest work alone—forced itself on the least cultivated, and was indescribable. Yet the cost had been very trifling. In Ontario, nature offers us, in trees, what color, what form, we choose of a thousand kinds. Of this great choice we have but to take advantage, to render our farms shortly as beautiful as the utter deprivation of the forest has made many of them hideous.

It may be suggested, in choosing trees with reference to beauty, either alone or in contrast, that the manner in which the different varieties reflect the light, and the kinds and lines of shadow produced, should be thought of. If we look at a Lombardy poplar, we shall find that the lines of light and shade are upright and narrow. Then take a beech, the tree is in strata; the light and shade in large level flakes. The white oak is again different from either; its fewer and larger branches, radiating irregularly from the great trunk, give large, uneven, but more grand and picturesque masses of shadow and brightness than those of any other tree. The cedars often grow so close branched that their shadows are but one. The maple has numerous openings for shade and sun, but they are too many, too small, and too regular to do more than assist the general effect of the tree. If we examine foliage critically, we shall find a thousand differences to aid our selection, and one view of nature is worth many of books, for trees differ with localities, and the observer can soon find for himself how they appear when he desires to plant.

We generally plant that trees may be seen from a given point. If this central point be the house, the views of the house from the road, and towards the road from the house, are the chief vistas to leave open, not in straight rows of trees, but that, of the curving lines of plantation edge, of grove, clump, or single tree, none shall stand in the way of the view you desire, while, as the eye glances along the opening, it shall observe trees on either side in graceful harmony or appropriate contrast.

Without attempting an extended list, it may be said that of those within reach of all, for planting in the open, the oak (white and red) should be mentioned. When in leaf, the masses of its foliage reflect the lights and shadows as do few others. Before planting, with all trees it is well to observe the effect of this, and consider which you would choose in contrast. It grows a large and handsome tree, with a peculiar appearance of solidity and strength in the trunk and branches, and will thrive on poor soil. It is said that trees influence character. One can imagine that the daily walk along an avenue of fine oaks—their firm position—their rigid branches defying the storm—the steel-like and martial flash of their unbending and hard-edged leaves—might possibly arouse thoughts which would have some such effect.

"To convey by words alone," it is said, "an idea of the grand and varied expression of full-grown oaks would be a task as difficult as to impart the awful sense of sublimity inspired by rolling thunder."

"Jove's own tree,
That holds the woods in awful sovereignty."
—*Virgil.*

The Beech.—Some object to this, as being likely to die out. In those cases when I have known it to do so, it had been transplanted from the shade to the sun, which had beat on its bark. The forest bark is tender. (This can be shaded by a V board.) But I have generally known it to do well, and it has this peculiarity—its habit is often to branch in sections above one another, giving broad level flakes of light green foliage across the whole tree, which, swayed by the breeze, give an admirable and ever-changing effect.

Its roots run close under, and sometimes lift themselves near the trunk, above the ground.

"There, at the foot of yonder nodding beech,
That wreathes its old fantastic roots so high."
—*Gray.*

The Elm.—Nothing can exceed, in graceful appearance, the lofty urn-like form of this remarkable tree. The beautiful curves of the branches into which the trunk, near the ground, divides, and which each then seems to form an independent tree, rising high by itself, then uniting with the rest in an immense spreading head, give this peculiar form. It should be remembered that where beauty is the object, trees which naturally grow as these should be given space to follow out their habit. Some pruning, when small, will greatly assist. For avenues, these trees need eighty feet between the rows.

"Of all trees," says Beecher, "no other unites, in the same degree, majesty and beauty, grace and grandeur, as the American elm. Take them away, and who would know the land? Villages that coquette with beauty through green leaves would shine white and ghostly as sepulchres." The witch elm should be mentioned. It is more square in form and massy in foliage—equals in size the large oaks, and is one of the noblest of park trees.

"Harp of the North, that mouldering long hast hung
On the witch elm that shades Saint Fillian's spring."

The ash is also a very beautiful tree, and, above others, sways gracefully in the wind. Its bark, too, in its many channellings, is very handsome. In our climate, with the long winter, the appearance of trees when destitute of their leaves is an important point. Trunk and branches, for long periods, are visible here. I have been where, of a summer afternoon, too warm for exercise, too bright for sleep, the long line of waving ashen foliage, from window to park gate, seemed, in the incessant change and continuous rush and play of its heavy leaf wreaths in the breeze, to arouse such succession of thoughts as passed the hours as pleasingly as might an agreeable book or lively companion.

The nut trees—hickory, chestnut, walnut, and butternut—will, with care, all thrive and look well in many parts of our provinces. The length of leaves of the two latter give them a flowing grace, so unique as to demand consideration in planting. Between their and ordinary foliage is a difference, not so great as that between evergreen and deciduous, but still strongly marked. It is that each leaf is of many leaflets, of a pale, yet warm and glowing green, and that, looking at the tree, you see that they seem to back each other, and hang rank on rank into the depths.

The basswood is an excellent tree to plant. It grows rapidly—soon the smooth tall sapling will swell into the thick rough trunk, and the broad soft leaves form a wide arbor overhead, while the mass of rich white blossoms will, if you plant trees enough, feed your own and your neighbor's bees till both shall have honey for winter. If we choose to be epicures about shade, it is thought that, as a rock gives cooler shade than a forest, so a basswood gives more agreeable shade than other trees. In this case, it is said to be owing to the foliage—the numerous layers of large, thick, moist leaves.

Then there are the larches and evergreens, the growth and appearance of most of which is elsewhere described.

Of the maple, hard and soft, much less has been said elsewhere. For shade, there is no better tree, and in summer rows of maples, well-headed and thriving, form a most brilliant feature in the landscape in fall—one almost gorgeous. A word also should be said concerning the soft maple. In most places there are some grounds which cannot well be drained, and are consequently unproductive. If soft maples be here planted, close at first, thinned out thoroughly in time and given full space, they grow to one of the finest of our many fine trees. Soft maples, of which I remember the planting, are now nearly four feet through at the base. Their growth, dividing, not single stemmed, and the broad branching head, renders them excellent for all ornamental purposes. Their autumn leaf, too, is of a far more rich and delicate crimson than is that of the hard maple, and if you will plant them in a northern exposure, where they will receive the full weight of the first sharp frost, you will have nearly every fall the most pleasing sight nature can afford.

If we want a rapidly growing tree, there is the silver poplar. In twenty years I have seen it cut down—a tree three feet, six inches through, seventy feet high, and sixty in spread, giving four cords of firewood to the tree. It is of very fine appearance—its leaves silver on one, clear green on the other side, and partly of aspen nature, then fluttering continually, breaks a white and emerald sea over its whole surface. I have had the wood tested—as firewood it nearly equals maple—as beams it is twice as tough as pine—as panels it has a beautiful yellow grain. But, as before warned, near ploughed ground it will run and sucker.

The Birch.—A very beautiful tree, whether we choose the cut-leaf or the more ordinary variety. The bright white bark, contrasting against the green leaves, shows well in many situations. In winter, if you happen to pass a large birch, stop to examine it, and it will repay the time, and prove that trees were meant to please the eye in that as in the warmer day. The great trunk below—the subdividing pillars of clear bright white above—the wonderful ramification of abounding branch, twig, and bud, all arranging themselves as they grow in a careless gracefulness of forest architecture which the painter can indeed imitate, but could never imagine is worth thought and study. The branches of the weeping birch possess even a more mournful beauty than that of the weeping willow.

"Where may the grave of that good knight be?
It lies on the slope of the mighty Helvellyn,
All underneath a young birch tree."

"Nothing," it is said, "can well be prettier, seen from the windows of the drawing-room, than a large group of trees whose depth and distance is made up by the deep and heavy masses of the ash, oak, and maple, and the portions nearest to the eye on the lawn terminated by a few birches, with their sparkling white stems and delicate, airy, drooping foliage."

All of these make good timber; all head out in the open, or if grown in close plantations will form tall, straight trunks with small heads. But with these, as with all trees, it must ever be remembered that if care be given (as directed elsewhere) they will grow *three times as well* as without. I saw a grove of maples at Eastwood this summer, planted *fifty years ago* by the employees of an old admiral, carelessly, and afterwards left to be knocked about by cattle. They grew—even that is surprising—but they are now only three or four inches through.

It cannot be too often repeated that trees will grow without care, but much more rapidly with it. We ask the value of a plantation—what money it

will bring, and whether it will yield returns as wheat and barley. But consider the many ploughings and harrowings, the manure, the labor given, while we give the trees none. But keep the ground around the trunk shallowly stirred, and notice how soon the timber will expand—how thick the rings of each year's growth—what wealth of leaf and branch will spring above. To this list many more trees might have been added ; but they will, to a great extent, be found mentioned in the body of the work by those who have made their growth the subject of actual experiment.

I have the pleasure of appending here some notes on four trees from the well-known pen of W. Saunders, Esq., London, Ont., who says :

"I submit hereto a few notes on some forest trees, which I believe to be well adapted to the climate of most parts of Ontario, and which possess so many points of merit that they deserve to be better known.

The Norway maple, *Acer platanoides*. This is well entitled to a place in the front rank among useful and ornamental trees. It is a rapid grower, making, when well established, from one to two feet of growth each year, and in the course of ten years, under favorable circumstances, will attain a height of from twenty to twenty-five feet. The Norway maple is a very handsome tree, with a beautiful round head, clothed with long-stalked broad leaves, not deeply notched, smooth, and of fine texture, with a rich, deep, glossy-green color. This species, in common with most other European trees, is much more thickly branched than any of our native maples, and, on this account, furnishes a more complete shade. It is as early in leaf in spring as any of the other species of maple, and retains its foliage a week or two later in the autumn, enduring such early frosts as wither the foliage of our native species without being materially affected, and only losing its leaves after the frosts become very severe. The bark of both the trunk and branches is neatly covered with longitudinal lines, giving it a very pretty appearance when deprived of its leaves in the winter. I regard this as one of the most beautiful maples in cultivation, unsurpassed as an ornamental tree, while its perfect hardiness suggests its suitability for more extended forest planting.

The wood is valuable for fuel, also for cabinet work or building material; it is easily worked, and takes a fine polish. This tree is found native from Norway to Switzerland, and was introduced into Great Britain in 1683, since which period it has been in constant cultivation there ; it grows from thirty to sixty feet in height. In Norway and Sweden sugar is made from the sap of this tree. A maple so useful and hardy as this deserves to be extensively planted in Ontario.

The ash-leaved maple, *Negundo faxinæ folium*. This tree, known also as the Manitoba maple, Box Elder, and ash-leaved Negundo, is not a true maple, but is very closely related to that genus. It is a very rapid growing tree, found native in many districts in the Northwest, and is said by botanists to be found from Canada to Carolina. Professor Macoun, in his recent "Catalogue of Canadian Plants," says a few trees of this species are found in the valley of the Humber, near Toronto ; also eleven miles up the Kaministiquia River, west of Lake Superior, and on an island in the Lake of the Woods. It is abundant in all the valleys of the tributaries of the Red River and of the Saskatchewan coming from the south ; also abundant on the streams flowing into Lake Winnipegosis. There seems to be two varieties of this tree, a southern and a northern one, the southern form being a comparatively slow grower and tender, having the leaves of a yellowish tint and more or less convex on the upper side. The northern form is extremely hardy, of rapid growth, darker in foliage, and has the upper side of the leaves concave. Those who wish to plant this tree should bear this fact in mind, and procure their young trees or seeds from a northern source, for should they obtain the southern instead of the northern variety disappointment is sure to occur. This tree is very extensively cultivated in the Northwest, and is the principal variety planted on the streets in the towns there. It is not a large tree, seldom exceeding thirty feet in height, and is said to reach its full growth in from fifteen to twenty years. A specimen tree of the northern form planted by myself six years ago in a rather poor, sandy soil now covers a space of more than twenty feet each way, is fifteen or sixteen feet in height, and has a trunk about eight inches in diameter near the base. It is a very succulent tree, and in Manitoba is very liable to be attacked by green-plant lice, which serete a sweet fluid on the foliage, and this attracts large numbers of flies. I have not seen any instances of this in Ontario. From its rapid growth and low stature, and from the fact that, if permitted, it is low-branched, the branches almost covering the ground, it is well adapted for forming shelter belts often so important in protecting other more tender trees, crops, buildings, etc.

The Western Catalpa, *Catalpa speciosa*. This species of catalpa is a native of the low lands bordering the lower Ohio and the banks of the Mississippi in Missouri, Kentucky, and Tennessee. It is a vigorous and rapid grower, producing large and handsome foliage and clusters of beautiful flowers early in June. As an ornamental tree it has few equals, and, notwithstanding its rapid growth, it produces timber which, though soft, is extremely durable, and of the greatest value for fence posts and railway ties. It has not yet been extensively tested in Ontario, but wherever it has been tried it has thus far proved quite hardy. Having been selected by the directors of the Fruit Growers' Association of Ontario as one of the trees to be distributed among the members of the association throughout the province during the coming spring, it will thus be extensively tested within the next few years. On my own grounds, near London, it has stood the past three winters without the slightest injury, notwithstanding that on one occasion during that period the thermometer reached more than thirty degrees below zero.

The European Larch, *Larix Europea*. This tree, so highly valued in Europe, has not yet been grown to any considerable extent in our province. A few have been planted here and there for ornament, and a clump of upwards of half an acre has been planted on the grounds of the Agricultural College in Guelph for the purpose of testing its comparative value for forest growth. Trees planted by myself have grown within five or six years from two feet to twelve or fourteen feet in height. In Europe the larch attains, in the course of fifty years, a height of eighty feet or upwards. It will grow rapidly in almost any soil and in almost any situation, and the wood is very durable and valuable for many purposes. The tree is very ornamental in summer, when clothed with its beautiful pale green foliage, and, since it will grow freely on poor land, it should be widely tested. A recent writer has well said, "There are thousands of acres in Canada which cannot be converted into arable land, but which, if judiciously planted with European larch, would soon become most valuable, and add immensely to the wealth of the nation."—*Forestry Report, 1885.*

Mathematics.

All communications intended for this department should be written on one side of the sheet only, and should be addressed to the Editor, C. Clarkson, B.A., Seaforth, Ont.

SOME ASPECTS OF ALGEBRA.*

"*Al jebr e al mokabalah*," said the professor as he stepped to the platform. "In other words, *restoration* and *reduction;* this was the original Arabic phrase to designate the rudimentary science which has been slowly developed into the modern science of algebra. The name still carries the central notion of algebraic science, namely, the idea of SUBSTITUTION and REDUCTION whereby we use simple general symbols for the complicated details of an operation ; work with these symbols, simplify the process as far as possible ; and finally restore the original values in the reduced expression.

"My purpose this morning, my dear disciples, is to give you two or three *illustrations of this great central fact*, and to exhibit to you the utility of algebraic processes in reducing the otherwise complicated and unmanageable expressions that constantly present themselves in the practical application of mathematics. Let us suppose that the result of a practical problem involving three quantities, say length, breadth, and thickness, comes out in the form :

"I. $(a-b)^4+(b-c)^4+(c-a)^4$, and that we wish to reduce this to a formula containing *second* powers instead of *fourth* powers. We will *substitute* x for a − b, y for b − c, and z for c − a, and endeavor to reduce the expression. We see at once that $x+y+z=0$, *i.e.*, the sum of a − b, b − c, c − a.

$\therefore x^2+y^2+z^2+2(xy+yz+zx)=0$, by simply squaring ; *i.e.*, $x^2+y^2+z^2=-2(xy+yz+zx)$, by transposition.

$\therefore (x^2+y^2+z^2)^2=4(xy+yz+zx)^2$, by squaring again ; *i.e.*, $x^4+y^4+z^4+2(x^2y^2+y^2z^2+z^2x^2$
$=4(x^2y^2+y^2z^2+z^2x^2)+8xyz(x+y+z)$

But $x+y+z=0$, by the original substitution, hence we get by transposition, since the last term is $=0$;

$x^4+y^4+z^4=2(x^2y^2+y^2z^2+z^2x^2)$ which we mark (A).

Returning to the preceding statement,

$(x^2+y^2+z^2)=-2(xy+yz+zx)$, and, squaring in a slightly different way, we have

$(x^2+y^2+z^2)^2=4(x^2y^2+y^2z^2+z^2x^2)+0$, as before, which we mark (B). Now compare (A) and (B), and we see that

$x^4+y^4+z^4=\frac{1}{2}(x^2+y^2+z^2)^2$, an expression containing only second powers. Restore the values of x, y, and z, and we have

$(a-b)^4+(b-c)^4+(c-a)^4=\frac{1}{2}\{(a-b)^2+(b-c)^2+(c-a)^2\}^2$

and thus the reduction is effected.

Suppose, again, that the final expression for the solidity of an irregular solid comes out in terms of a, b, and c in the form :

"II. $8(a+b+c)^3-(a+b)^3-(b+c)^3-(c+a)^3$, and we wish to express this in the form of factors so as to simplify the calculation by means of logarithms.

Let us substitute $x=a+b$
$y=b+c$
$z=c+a$
$\therefore x+y+z=2(a+b+c)$

$\therefore (x+y+z)^3=8(a+b+c)^3$. Thus we get by our substitution :

$(x+y+z)^3-x^3-y^3-z^3$, which we know is
$=3(x+y)(y+z)(z+x)$ from the formula
$(x+y+z)^3=x^3+y^3+z^3+3(x+y)(y+z)(z+x)$

But $x+y=a+2b+c$, $y+z=$ etc., $z+x=$ etc. ; and finally we have the result

$$3(2a+b+c)(a+2b+c)(a+b+2c).$$

"To conclude for this morning these illustrations of the utility of algebraic substitution, let us suppose that a, b, c are the sides of a triangle, and that the number of cubic feet in an irregular solid is found by the architect to come out in terms of the three sides of this triangle. Taking the common substitution in such cases, he has put $2s=a+b+c$, and his result has assumed the form :

"III. $(s-a)^3+(s-b)^3+(s-c)^3+3abc$. Can he still further simplify this formula? Let us see.

Substitute still further. Put $x=s-a$
$y=s-b$
$z=s-c$
$\therefore x+y+z=3s-(a+b+c)$
$=3s-2s=s$ (A)

Then we have $x^3+y^3+z^3+3abc$ for the first expression. (B)

Looking once more at our own substitutions we see that

$x+y=2s-(a+b)=c$, from the architect's substitution.

$y+z=2s-(b+c)=a$, from the architect's substitution.

$z+x=2s-(c+a)=b$, from the architect's substitution.

$\therefore 3(x+y)(y+z)(z+x)=3abc$, by multiplication. In this way we come down to the formula from (B),

$x^3+y^3+z^3+3(x+y)(y+z)(z+x)$, which we recognize as $=(x+y+z)^3$, and from A, $=s^3$, which is plainly a valuable simplification of the architect's expression, and much easier to calculate in figures.

"Thus, my dear disciples, I have given you a preliminary glimpse of the great doctrine of *substitution* and *reduction* which runs through every branch of mathematical science. We will resume the subject at the next lecture."

C. C.

*A lecture by Prof. Mohammed ben Musa, published by permission.

PROBLEMS FOR SOLUTION.

Sent by P.J.B., Montague Cross, P.E.I.

No. 11. How many feet of $1\frac{1}{4}$ inch flooring are required for a verandah around the three sides of a house 40 feet long and 24 feet wide, if the verandah is 8 feet wide?

No. 12. Find the cost of carpeting a stairway of 24 steps, each 12 inches wide, and having a rise of 8 inches, allowing 2 feet extra for the projection of the steps, the carpet costing $1.25 a yard.

No. 13. Divide the number 474 into three parts, such that three times the first may be equal to five times the second and to eight times the third.

No. 14. A and B having equal shares of a ship sell respectively $\frac{1}{3}$, $\frac{1}{4}$, and $\frac{1}{5}$ of their shares to D, who dies and leaves his share equally among them. If B's and C's interest in the ship be now worth $37,300, what is the value of A's share?

No. 15. If oranges are bought at the rate of 20 for $1, how many must be sold for $28 to gain 40 per cent.?

No. 16. A man mowing grass walks at the rate of .35 miles an hour, and in 70 minutes mows a grass plot of 1056 square yards; how broad does he mow?

No. 17. A and B invest capital in the proportion of $3\frac{1}{2}$ to 4. After 5 months A withdraws $\frac{1}{2}$ of his capital, and B withdraws $\frac{2}{3}$ of his. At the end of the year they have gained $7090. Find each man's share.

No. 18. A owns $\frac{3}{5}$ of a vessel and B the remainder. The vessel is sold, A receiving 60% of his share of the money, and B 20% of his. B afterwards received $4000 from the purchaser, and the balance then due was divided equally between A and B. What was the ship sold for?

No. 19. Find the cost of painting the gable end of a house at 42c. a square yard, the breadth being 27 feet, the distance of the eaves from the ground 33 feet, and the perpendicular height of the roof 12 feet.

No. 20. A can beat B 5 yards in a 100-yard race, and B can beat C by 10 yards in a 200-yard race. By how many yards can A beat C in a 400-yard race?

No. 21. A sum of money was divided among A, B, and C. A received $\frac{2}{5}$ of the sum, B $20 less than $\frac{2}{3}$ of what was left, and the remainder, which was $\frac{3}{4}$ of A's share, was given to C. Find the sum divided.

No. 22. A man sells a horse, gaining $11\frac{1}{9}$ per cent. of the proceeds; had he received $35 less he would have lost $9\frac{3}{8}$ per cent. of what the horse cost him. Find the cost and selling price of the horse.

No. 23. The breadth of a room is 16 feet. The cost of papering the walls at 24c. a square yard is $20.16, and the cost of carpeting the floor at $1.25 a square yard is 44.44\frac{4}{9}$. Find the height and length of the room.

No. 24. A and B begin business with capital in the proportion of 7:8. After 3 months they add respectively to their capital $\frac{3}{4}$ and $\frac{5}{8}$ of their former investments, and at the end of the next 3 months each withdraws $\frac{1}{3}$ of his capital. At the end of the year their profits are $1652. How much should each receive?

No. 25. I received an 8 per cent. dividend on Bank Stock, and invested the money in the same at 80, my stock having increased to $13750. What was the amount of my dividend?

No. 26. A, B, and C are joint owners of a ship; C's share is valued at $200, A's share is $\frac{1}{3}$ of B's, and the sum of their shares = $\frac{8}{9}$ the value of the whole ship. Find the value of A's and B's share.

No. 27. A lady, the mother of three daughters, had a farm of 500 acres in the form of a circle, with a residence in the centre. She gave to each of her daughters a farm in the form of a circle, with a residence in the centre of each. How much land did each daughter get, and how far apart were they? How much did the lady keep, and how far was each daughter from her?

No. 28. A circular race-course is 22 yards wide, and has an area of 12 acres. Find the diameter of the inner circle.

No. 29. The sides of a triangle are 13, 14, 15 feet. Find the length of the three perpendiculars from the angles on the opposite sides.

No. 30. Sent by A SUBSCRIBER, Montreal.

A man drives around his farm at the rate of 10 miles an hour, and he takes as many seconds to go round it as there are acres in the farm. What is its area? Of course it is a square farm.

No. 31. Sent by A. B. CHALMERS, Milverton, Ont.

If, in a meadow of 20 acres, the grass grows at a uniform rate, and 133 oxen consume the whole of the grass on it in 13 days, or 28 oxen 5 acres of it in 16 days, how many oxen can eat up 4 acres of it in 14 days?

No. 32. How many yards of paper, 30 inches wide, with a pattern every 18 inches, are required to paper the walls of a room 18 feet long, 12 feet wide, and 10 feet high?

No. 33. A. and B. start together to travel in the same direction. A. travels at the rate of 7 miles per hour, and always remains $\frac{1}{4}$ as far ahead of B. as B. has travelled. What is B.'s rate of travelling?

No. 34. Sent by MARTHA MILLER (no address given).

A merchant, after reducing the marked price of an article by three successive equal rates of discount, sold for $21.87, the marked price being $30. What was the rate of discount?

No. 35. Sent by a CONSTANT READER, Treadwell, Ont.

On a mortgage for $3750, dated May 16th, 1887, and bearing interest @ 6%, there were paid May 16th, 1888, $350; Sept. 18th, 1888, $280; Jan. 22nd, 1889, $750; May 16th, 1889, $925; Oct. 31st, 1889, $500. What sum was due on the mortgage on Jan. 2nd, 1890?

No. 36. On Sept. 19th, a commission merchant received a consignment of 600 bbls. of apples. He sold 120 bbls. @ $2.25 on Sept. 24th; 75 bbls. @ $2.30 on Sept. 27th; 150 bbls. @ $2.40 on Oct. 7th; 150 bbls. @ $2.35 on Oct. 22nd; and the balance @ $2.20 on Nov. 18th. Find the equated date of the total sales.

No. 37. Sent by ELIZA RIDLEY, South Mountain, Ont.

The difference in area between a square inscribed in a circle and one circumscribed about a circle is 110 square yards. Find area of circle.

No. 38. Sent by E.J.D., Glanford, Ont.

The hour, minute, and second hands of a clock revolve around the same centre. When first after 12 o'clock will the minute hand be midway between the other two?

No. 39. Sent by W. E. MONTGOMERY, Belmore, Ont.

The parallel sides of a trapezoid are respectively 27 feet and 35 feet long, and the non-parallel sides are respectively 18 feet 7 inches and 23 feet 11 inches long. The latter sides are produced to meet. Find the respective lengths of the produced sides between the point of meeting and the shorter of the parallel sides of the trapezoid.

No. 40. A lawn in the shape of an ellipse, the length of whose axes are 98 feet and 58 feet, is surrounded by a walk two yards wide. Find the area of the walk. 106. A cylindrical iron tank 20 feet long and 4 feet 6 inches in diameter was placed horizontally on a flat car and filled with oil at Petrolia. When it arrived at Toronto it was found, upon being dipped from the top, to be 10 inches to the surface of the oil. What was the wantage in gallons?

No. 41. Sent by J. WIDDIS, St. Paul's.

A man has $9000 invested in a 4% stock @ 90, and $12000 invested in a 5% stock @ 125; he transfers from the latter to the former a sum sufficient to make the income from the different stocks the same. What is the amount of money transferred?

No. 42. What must be the price of consols in order that after deducting an income tax of 2% an investor may make $3\frac{1}{2}$% on his money, the consols paying 3%?

No. 43. Sent by A. H. NEVILLS, Mapleton, Ont.

How would you prove to a class that one square rod contains $30\frac{1}{4}$ square yards?

No. 44. Factor: $a^3b^6 + 108a^6b^8 - 243a^8b^9$.

No. 45. From two given points on the same side of a given straight line, show how to draw two straight lines, which shall meet at a point in the given straight line and make equal angles with it. Prove by not using any proposition after fifteenth.

No. 46. Proposed by S.H.C., Renfrew, Ont.

The parallel chords of a circular zone are 12 and 16, and its breadth 14. What is the diameter of the circle? No. 80. The diameter of a circle is 130 feet; the breadth of a zone is 64 feet; and one of the parallel chords 120 feet. Find the other. H.S.A., p. 198, No. 47.

No. 47. The radius of a circle is 12 feet; two parallel chords are drawn on opposite sides of the centre, one subtending at the centre an angle of 60°, and the other an angle of 90°. Find the area of the zone between the chords. Same exercise. No. 146.

No. 48. The area of a sector is 90 square feet; the radius of the circle is 15 feet. No. 163, p. 207. Find the arc of the sector. Same exercise.

No. 49. A., B., and C. entered into partnership, contributing respectively $3500, $2200, $2500; their gains were $1120, $880, and $1200 respectively. If B.'s capital was in trade 2 months longer than A.'s, for what time was each man's money in the business? No. 10, p. 189.

No. 50. How long would it take to plough 7 acres 96 square rods, the horses travelling $2\frac{1}{4}$ miles per hour, and the furrow averaging $9\frac{1}{2}$ inches wide? P.S.A., No. 55, p. 148.

No. 51. Sent by A.B., Algoma.

On counting out the marbles in a bag by 20 at a time, or by 24, or by 30, there are always 15 marbles left; but on counting them out by 25 at a time there are none left. What is the least number of marbles there can be in the bag?

No. 52. 480 grains is called a troy ounce. Find the least number of ounces (troy) that will weigh an exact number of pounds (avoirdupois).

NOTE.—The solutions to these problems will be given as fast as our space and the energy of our contributors will permit. Meantime we advise all interested to file this copy of THE JOURNAL for future reference.

Hints and Helps.

WHAT I SAW IN SCHOOLS.

I.

BY VISITOR.

A short time ago, while visiting a friend in Western Ontario, the county Public School Inspector chanced to stay over night with mine host. As he was a man who had the welfare of his schools at heart, the conversation during the evening naturally turned towards educational matters. Without going into details, the writer was invited by the inspector to spend a few days with him in actual school visiting. This was readily agreed to, and it is my purpose to give your readers, from time to time, some inklings of what I saw during those days, and during other visits more recently made with the same inspector. As nothing would be gained by the disclosure of my personal identity, I shall subscribe myself simply

VISITOR.

I.—THE TEACHER'S DESK.

The first school visited was in charge of a young man who had several years' experience in teaching, and who had "gained a considerable reputation for efficiency and discipline." We were given chairs on the platform. As soon as the inspector began his examination, my attention was drawn to the teacher's desk, and this is what I saw: On the right were arranged, in delightful irregularity, three chalk-boxes without lids—one just opened and full of ordinary crayon; the second half full of small pieces of chalk nearly smothered in dirty chalk-dust; the third almost full of odds and ends—broken pens and pen-holders, pieces of paper,

wood, and pencil; a sleigh bell, a broken knife, several old nails, and other such articles, many of which were evidently confiscations from the ever prolific pocket of the schoolboy. Further back was a large school dictionary with torn covers, upon which were carelessly piled a few soiled and crumpled copies of some school journal. On top of these, as if to set off the pile, was the school bell. On the left was a box of cubes, solids, etc., often seen in schools, and a large number of the teacher's books, all thrown together in that promiscuous fashion which proved the teacher's mind too great, or his thoughts too lofty, to care for such a small matter as orderliness. Behind these were piled, in more or less confusion, the pupils' writing books. Between these two main rows—one at each end of the desk—were seen an ink bottle, a pen, two pointers, a rubber strap, about a dozen examination scribblers, an ill-kept register, and other scraps, all mixed without any regard to symmetry, order, or classification. This was the picture.

For the sake of contrast, permit another picture, seen a few days later in a school taught by a lady, yet apparently in her teens. The same kind of desk is before me, and about the same number of articles are upon it. The strap is absent. The pointers also are in a corner with the maps. The teacher's books are neatly arranged, so that any one may be picked out instantly. The pupils' books are all squarely built up by themselves according to kind. The arrangement and neatness of everything gives evidence of a refined taste and a cultured mind.

Now, dear teacher, look at your desk. Which picture does it most resemble? If not like the second, why not? Do you consider such small matters beneath your notice? If you do, let me say frankly that your God-given place is not the schoolroom.

It is commonly said that a person's character can be determined by phrenology, physiognomy, palmistry, carriage, gait, mode of dressing, etc. This is largely true, and as true of teachers as of others. It is no less true that the personal appearance of the teacher, the condition of his apparel, the manner in which he keeps his movable effects, and the general condition of his surroundings—at least those surroundings which are dependent for their proper adjustment upon himself, are so many finger posts pointing through his habits to his real character. If the teacher is disorderly in these things, there is a lack somewhere in his make-up. As the external is but a picture of the internal, so these outward physical habits of a teacher are the visible expression of his mental habits. If this is true, what a curious commentary on the furniture of a teacher's mind is the condition of his school desk. What a contrast between the two desks above described! The contrast between the two teachers is equally strong. One was orderly, the other disorderly; in teaching, the one had a plan, and was a law unto herself, the other followed no plan, recognized no law; the questions of the one were pointed, and followed one another in logical order, those of the other were pointless, and without logical sequence. The blackboard work of the one was a model of neatness, that of the other was without form, and hopelessly mixed. The contrast might be continued through the answering of the pupils, the routine work, the general condition of the schoolroom as to cleanliness, etc., always with the same result.

It is unnecessary to say more. If the external is but the expression of the internal, and few will deny it, the teacher's untidy desk and schoolroom may safely be taken as significant of his unfitness for his responsible position. His thinking will be loose, and his teaching must, of necessity, lack that unity—that orderly presentation of related ideas or facts which is necessary to true mental growth. Is it too much, therefore, to say that, no matter how genial or how popular such a teacher may be, he is, nevertheless, a poor teacher? He is not a "fit and proper person" to entrust with the education of a human soul. Teacher, is your desk or schoolroom untidy?

THE STUDENT WHO WINS.

Is a plodder.
Has high ideals.
Is always on time.
Is frank and manly.
Does not know it all.
Takes plenty of sleep.
Lays broad foundations.
Is thoroughly in earnest.
Is loyal to his instructors.
Believes in the golden rule.
Does his level best every day.
Is not in too much of a hurry.
Plans his work and works his plan.
Takes a due measure of physical exercise.
Is willing to have his weak spots pointed out.
Is patient in the presence of the greatest difficulties.
Does not allow his mind to be filled with athletic nonsense.
Does not allow social life to encroach upon study hours.
Is the staunch friend of every fellow who is having an uphill fight.
Has definite aims, and works steadily toward their attainment.

—*Epworth Herald.*

School-Room Methods

LANGUAGE LESSON.

1. Fill the blanks with the proper form of *Louis*, *Mr. Ross*, *fly*, *week*, and *sparrow*.

—— mother has no one else to send.
—— horse was frightened by the music.
All —— wings are transparent.
At the close of ten —— work vacation begins.
The boys had found some —— nests near the ball grounds.

2. Fill the blanks with the proper form of *water*, *waves*, and *princess*.

The boat was drawn to the —— edge.
You noisy —— roll higher up the strand.
"We do not dare," the —— reply.
What was the —— reply?
She was dressed like an Indian ——.
The —— dress was of deer-skin.

3. Which of the sentences above is a command? Which is a question? Which contains a quotation?

4. Fill the blanks with some form of *do*, *go*, *come*, and *choose*.

He —— his work, and —— to school early.
If he had —— to play, he could not have —— so soon.
Has the teacher ——?
Have you —— a good subject for your composition?

The above exercise was given as a written examination to test the pupils in their knowledge of language as far as they had been taught. On reading their papers it was found that many had failed to use their common sense, and some did not know the proper forms of the words. Such sentences as follow were found on several papers: "Mr. horse was frightened by the music." "The Indian dress was of deer-skin." Remember the word "Indian" is not one of those from which they were to choose. "All sparrows wings are transparent." By questioning afterwards, it was found that only one pupil in the class knew what *transparent* means. Common sense would have said, "Don't use a word that means nothing to you."

But some one says, "You cannot expect children of this grade to have as much judgment as you suggest." Proper teaching will give them this power to judge. The examination surprised the teacher, and the papers were handed to the children, and a lesson, substantially as follows, was given:

Teacher—In the first sentence, whose mother is meant?

Pupils—Louis's mother (orally).

Teacher—Why not Mr. Ross's mother?

Pupils—Because Mr. Ross is a man, and his mother would not send him on an errand.

Teacher—Spell the form of Louis that you read.

Pupils—Louis's.

Teacher—What does it mean?

Pupils—It means one, and shows ownership.

Teacher—Who most likely owned the horse, the boy or the man?

Pupils—The man.

Teacher—Mary, what will you put in the next sentence?

Mary—Mr. Ross's.

Teacher—Spell it, Mary. Mr period, capital R-o-double s, apostrophe-s.

Teacher—Why not put Mr. alone?

Pupils—Because it don't make no sense.

Teacher—Because it *doesn't* make *any* sense. What does transparent mean?

Pupils looked blank. Finally one little fellow in the back part of the room put up his hand rather hesitatingly, and the teacher said, "Well, Tommie?"

Tommie—What you can see through.

Teacher—Tommie is right. Anything that we can see through is transparent. Name something that is transparent.

Pupils (looking at the windows).

Teacher—Class.

Pupils—Glass.

Teacher—How many of you have looked at a sparrow's wing? at a fly's wing? (nearly all had). Which one can you see through? Class.

Pupils—The fly's wings.

Teacher—Which of the words must we take to fill the blank? Class.

Class—Fly.

Teacher—What must the form that we use mean? Susie.

Susie—It must mean more than one.

Teacher—How do you know?

Susie—Because the word *all* means more than one fly.

Teacher—What else must it mean?

Pupils—It must mean ownership.

Teacher—Write on the board the form that means more than one.

Pupils—Flies.

Teacher—What must we do to make it show ownership?

Pupils—We must add an apostrophe.

Teacher—Yes. Add it.

This is slow work, but it is good work. The pupil have been led to think about the things that he *must* think about to properly fill the blanks given. This kind of work will teach him to use his common sense.

The third sentence is faulty, because it contains a word that was not in their vocabulary. They should not have undertaken to fill the blank at all. It was a mere *guess* on their part.

There is material enough in this set of questions for another lesson of this sort, but not half enough in the whole set for one *guess* lesson.—*From The Indiana School Journal.*

THE SPIRIT OF THE TEACHER.

"As is the teacher, so is the school"—a maxim trite, but forever true. As is the teacher's interest in a given subject, so is the interest of the pupil, and so the strictly ethical effects. One of the saddest sights on earth is a half-dead teacher, working upon a half-dead class, the product of his own handicraft, as, on the other hand, one of the most beautiful is the inspiring teacher, before a class made sharers of his own spirit, throbbing with a certain newness of life and sense of growing power. I have seen the mere Gerund-grinder, or numerical Babbage machine, monotonously laboring at a creaking crank, and turning out mechanisms the image of himself, and I have seen, too, the Artist teacher, a happy union of cultured brain and loving heart, working even upon the inert product of the spiritless tradesman with results typified in the dream-vision of the prophet. "What a marvellous change! How soon is there a shaking of the dry bones, a movement of flesh and sinews and covering skin, and a soul created under the ribs of death!"—*J. A. MacLellan.*

Primary Department.

SPRING.

RHODA LEE.

Of all the seasons of the year spring is undoubtedly the most interesting, although, we must admit, presenting most drawbacks to teaching. These bright, joyous mornings seem so full of life and beauty that we cannot help feeling, at times, the duties of the schoolroom to be slightly irksome. Then, too, there is generally a lassitude and listlessness among the children, and, perhaps, in ourselves, with which we have constantly to combat. But, fortunately, the especial interest of the season need not be shut out from the schoolroom, but may be welcomed within at every opportunity, to give the necessary impetus to otherwise somewhat spiritless work.

Have some little talks with the children on the awaking of nature; the hibernating animals, the earth and its seedlings, the trees with their waiting buds, the migratory birds, the swollen streams, the increasing length of day. These and other like subjects afford us material for all-day talks; but, of course, too much time can not be given to it. We can, however, make use of the spare minutes, recreation periods, stormy recesses, and other such times.

Then I would again suggest a "Spring Record." Reserve a portion of the board on which to place facts such as the following: When the maple trees were tapped; when the first robin was heard and seen; when the first flock of crows was observed; the first mayflower; when the chestnut buds became shiny, and when they burst; when the first dandelion was seen; etc., etc. As the wild flowers come make room on the record for a drawing of the leaf and flower, in addition to date of finding. As these flowers become plentiful take them for observation lessons, and have every child make his own drawing. The children, last spring, were so interested in the Record that they asked permission to copy it into the back page of their exercise books, that they might have it for comparison with that of the following year.

Seed germination is always an interesting process, and one that can be easily observed in the schoolroom. One of the most satisfactory methods consists in tying a piece of coarse white net over a glass tumbler. On the netting the seeds are placed and water poured into the glass so that it just touches the seeds. The roots find their way down through the course canvas, and thus the whole growth of the plant may be seen. Flaxseed placed on a moist sponge is an interesting thing to watch, and is likewise quite ornamental but cannot be kept very long.

When the buds of the fruit trees are beginning to burst, cut off two or three small branches, bring them in and place in tepid water in a warm part of the room. They will, of course, make rapid strides and be in full bloom some time before the trees outside.

A window-box may easily be made and seeds planted early enough to have quite a garden before the end of June.

Spelling and language lessons may be based on work relating to spring, as also the reading lessons and stories for reproduction. Nor must we forget the spring songs. There are so many beautiful ones that we may teach our children; they are a positive pleasure to both teacher and pupils. Let us limit to the number, but teach as many as you can find time for. And let me urge the real teaching of the songs. Be sure that the children sing with the understanding, appreciating the true meaning and beauty of the thought. Time is well spent that is devoted to teaching children to love and reverence nature, opening their eyes to beauties which, though unseen, lie so close at hand.

PHONIC READING.

RHODA LEE.

In a letter which appeared in a recent number of THE JOURNAL, the writer, who no doubt has given considerable thought and attention to the subject of reading, makes a statement to the effect that there are two systems of phonic teaching, distinctly different in principle and method. With this I cannot agree. Mr. Houston also claims for his system sole right to the Analytic process. This is a mistake. We use it constantly, although synthesis in the methods I advocate, as I presume in the other, also constitutes by far the greater part of the system. Every word given the child to read undergoes an analysis before the sounds can be combined to form the word. As a matter of fact, these two processes are so interwoven that they scarcely admit of separation.

The system to which Mr. Houston refers I have always considered a mixture of word and phonic, the latter, of course, predominating. I hope I may be pardoned if I misinterpret the method in question, but, so far as I understand, it consists in teaching first a list of keywords, which are dissected in order to obtain the various sounds; after this follows the ordinary sound-combining, word-building, etc. We do not consider this laborious teaching of words to be necessary. Instead we begin with a couple of simple sounds, such as those produced by *m* and *a*, combining them at once to form the most familiar word in the child vocabulary. That the teaching of these simple sounds is any more "dogmatic" than the rote-work involved in impressing a list of words, I cannot admit.

Let me outline once more one of our methods of introducing a new sound. *a*, *e*, and *o*, being words already familiar to the children, we wish to introduce *i*.

Teacher asks the class to write *pat*, next *pet*, next *pot*. After these words have been written and examined, the children are cautioned to be careful of the word now to be given. The teacher enunciates the word *pit* very distinctly. The children try to write it, but after the first sound stop; the next sound is unfamiliar. The teacher then asks them to tell her the first sound, and places it on the blackboard, then the last,

p-t.

She next asks the children to separate (analyze) the sounds of the word; second sound is given, viz., *i*. "Now," she says, "I will show you the little letter that says '*i*,'" placing it between the two familiar letters the word stands complete.

pit.

Following this the teacher gives a series of words (orally) that the children separate or arrange into the distinct sounds. The teacher gives the word as a whole class analyze.

Teacher: *fill.*
Class: *f-i-l.*
Teacher: *fist.*
Class: *f-i-s-t.*

The teacher then gives the sounds, and class recognize the word as a whole.

Teacher: *l-i-f-t.*
Class: *lift.*
Teacher: *g-i-l-t.*
Class: *gilt.* etc.

After considerable practice has been given in the above processes words are dictated, and various exercises in sight reading given.

In closing let me express the hope that the above illustration will suffice to show that the analytic process is not absent in the methods we use, that the sounds are not dogmatically given, and that the children are trained to think and work for themselves from the beginning.

I do not wish to disparage the method Mr. Houston advocates. Far from it. I do not consider it, strictly speaking, a phonic system, but after the word-teaching is dispensed with, I fancy we proceed on very similar lines. The results in what I have called, and continue to call, *the* phonic system, are in my experience unequalled, but we are sure Mr. Houston must have met with no small measure of success in his methods, else he would not adhere to them. Our object in thus writing is not to find fault with these, but merely to prevent any confusion of ideas that might arise from a perusal of his letter.

STORIES FOR REPRODUCTION.

I.

THE BAG-PIPER AND THE WOLF.

A Scotch bag-piper crossing the mountains of Ulster was one evening met by a starving Irish wolf. In his distress the poor chap could think of nothing better than to open his wallet and try the effect of his provisions; he did so, and the wild beast swallowed all that was thrown to it with ravenousness. The whole stock of food was, of course, soon spent, and now the man's only recourse was to the virtues of his bag-pipe; which the wolf no sooner heard than it fled to the mountains with great haste. The poor piper could not fully enjoy his deliverance; with an angry look at parting he shook his head saying, "Ah, are these your tricks? If I'd known your humor, you would have had your song before your supper."

II.

A LESSON GIVEN TO SWIFT.

A friend of Dean Swift one day sent him a turbot as a present by a servant who had oft been on similar errands, but had never got the slightest mark of the Dean's open-handedness. Having been let in he opened the door of the study and, abruptly putting down the fish, cried very rudely: "My master has sent you this fish." "Heyday, young man!" said the Dean, rising, "is that the way you give your message? Let me teach you better manners. Sit down in my chair; we will change situations, and I'll show you how to behave henceforth." The boy sat down, and the Dean, having first gone to the door, came up to the table with a respectful pace, and making a low bow said: "Sir, my master sends his kind greetings, hoping your reverence is well, and begs you to honor him by accepting this turbot." "Does he?" said the boy. "Here, John (ringing), take this honest lad down into the kitchen and give him as much as he can eat and drink, then send him to me and I'll give him a crown."

CLASS RECITATIONS.

RAIN DROPS.

Some little drops of water,
Whose home was in the sea,
To go upon a journey
Once happened to agree.

A cloud they had for carriage,
They drove a playful breeze,
And over town and country
They rode along with ease.

But these were so many,
At last the carriage broke;
And to the ground came tumbling
These frightened little folk.

Through the moss and grasses,
They were compelled to roam,
Until a brooklet found them,
And carried them all home.

LANGUAGE LESSONS.

(1) Write the names of:

1. Ten kinds of vegetables.
2. Five kinds of grain.
3. Eight kinds of metal.
4. Ten wild animals.
5. Five kinds of fish.

(2) Write ten words, each one ending in *ing*.

(3) Write the following adjectives in a column, and after each write a word meaning the opposite:

thick,	late,	deep,
soft,	wide,	sharp,
cool,	fast,	even
right,	smooth,	large,
high,	old,	broad,

(4) Change these sentences to express *past* time:

1. I lay the book on the desk.
2. We lie down to sleep.
3. The mason lays the bricks.
4. The cows lie in the shade.
5. The old man lies on the floor.

—*Journal of Education.*

Correspondence.

"X.Y.Z." AND THE UNIVERSITY TROUBLE.

To the Editor of THE EDUCATIONAL JOURNAL:

SIR,—I have no desire to be drawn into controversy with any one in regard to the University trouble, but I feel like asking you for space to protest against the article in your last issue signed X.Y.Z.

I am sorry to think that any honor graduate of the University would write such an article. "Strong and trenchant" it may be, but fair and manly it certainly is not; and in view of the general character of its contents—the insinuation against the honor of the Chancellor, the attempts to belittle the character of the men who signed Prof. Wrong's testimonials ("good-natured Prof. Ashley would give a testimonial to a dog, or a stranger"); and the cool assumption that Prof. Dale "reflected only on one professor," and that "he was dismissed for telling unpalatable truths"—I do not wonder that the writer hesitated to take the responsibility of his article, and took shelter under the signature X.Y.Z.

For my own part, I have a very high opinion of Prof. Dale's scholarship, ability, and success as a teacher, and personal character and influence, and a warm liking for him as a co-worker and a friend I have, moreover, a very decided belief that the system of making appointments to the teaching staff of the University and College is not a satisfactory one, and that the students have real grievances calling for investigation and redress. For all that, I cannot see how the Government could help taking action in regard to his letter, though, perhaps, as you say, it would have been better to suspend him until a commission had investigated and reported.

Trusting that good may yet come out of the present evils,

H. I. STRANG.

Goderich, March 11, 1895.

To the Editor of THE EDUCATIONAL JOURNAL:

SIR,—Kindly allow me to make a few remarks upon the reply of M.A.S. to my letter of February 2nd.

M.A.S. admits her lack of knowledge of Toronto schools, and discusses my opinions as though I referred to women teachers generally, whereas I spoke simply of city teachers. Not that there is any difference in the teachers, but I do claim that there is a difference in the pupils of the city and country schools, that makes a change in system much to be desired.

With regard to the method pursued by M.A.S. in securing obedience in rural schools, I heartily endorse every part of it. But if M.A.S. were dealing with some classes in city schools, it would be found that something more than "Boys, I wish you to do right" is necessary in order to secure proper control.

That better results can be produced by employing male teachers in the higher classes is not only my opinion, but also that of most parents of the city and of the majority of the Toronto Public School Board, for the latter have recently replaced fifteen or more women by the same number of men. If they did not think the change to be an improvement, would they have made it?

But that which seems to have given the most annoyance is my assertion that many of the boys lacked manliness of character, and that many of the teachers lacked grit and backbone. I simply meant that I thought many of the teachers had not that quality necessary in every good teacher, but especially in teachers undertaking the education of a class of city boys, the power of controlling others.

Toward the close M.A.S. says her choice of a teacher would be one of these women and not "a man who is lacking in the very first element of strong, manly character, namely, the disposition to think and speak highly of woman." I think I am justified in thinking that I am "the man" to whom M.A.S. refers.

If for pointing out what I believe to be a defect in Toronto's school system, I deserve to be thus characterized, then I am totally ignorant of all that is just and fair. That the city teachers are a pure, noble, womanly band, with the best of intentions, no one can deny, and as far as I can see nothing was said by me that should bear a different construction.

Thanking you for this valuable space,

I remain yours respectfully,

W. H. GRANT.

Kettleby, March 23rd, 1895.

WOULD TWENTY-ONE BE A WISE AGE?

To the Editor of THE EDUCATIONAL JOURNAL:

SIR,—The age of admission to the teaching profession has been frequently touched on in THE JOURNAL, and lately by "Four-year-old" and "M.A.S." Neither of these writers seems to me to be quite right. "Four-year-old" would like to stop all from entering the profession who do not mean to stay in it. Now, if the age were raised to twenty-one, few men would waste time by waiting to teach, to raise funds for further advancement. It would, too, in many cases, stop men from entering the profession at all, who would enter and stay if the age were as now. For a youth with a fair chance can, in this live age, have obtained a Junior Leaving, or even a Senior Leaving certificate, by the age of 18 or 19 at furthest, and will in the great majority of cases have exhausted his funds, and must, therefore, look for other employment for the next two or three years, which employment will in nowise compensate him for the time he is wasting waiting for the hour to commence teaching, or pay him for the time he spent acquiring the certificate. Probably, too, he will have lost the desire to teach, and have become attached to his present pursuit. Again, few lads who have spent their time thus far in obtaining a certificate can find other employment, for they usually cannot do any kind of work. Also men who now use teaching as a stepping stone to other professions would not be as well fitted for them if they could not teach for a time.

Then for these reasons many a good man would be lost, and the great mass who now set before them teaching as their goal (at first at least) would not strive to get an education, as they could not afford to wait to twenty-one for the honor of being allowed to keep a school. They would not even enter our Collegiate Institute or High School, but seek employment that would bring reward quicker. All are after the almighty dollar—without it you die, with it you live; so it is easily seen we must do or die.

Now here comes the question, Is it better to sacrifice the mass to the fortunate few? If we look upon the nations of the earth to-day we see those who have the mass fairly educated have the most comfort, the largest amount of contentment, and the greatest happiness. Again, let us look at the nobility of the world. We find their offspring to have finer instincts, gentler natures, purer minds, and greater intellects, than those of the less educated. Then if we are to make this a great and truly prosperous nation, we must educate the mass that they may endow their offspring with greater brain power.

As to eighteen-year-olds being competent—as "M.A.S." thinks—to train children mentally, morally, and physically, I have but little to say, save that I have not the slightest doubt that one youth in fifty may be fairly competent, and possibly twenty-five damsels in fifty. And it may be easily seen by looking around that much older and more mature minds are utterly unfit, in the majority of cases, to train a child. I allow women the greater competency, because their minds mature earlier than men's.

So far I have scarcely mentioned women. For if we raise the age to twenty-one, girls would not think of putting forth an effort to acquire a certificate that is of no use to them for two or three years, and then but for a year or two at most, and in many cases they would never require to use it. Moreover, their fathers would reason something like this: "There is no use in sending her to school, she will never make any use of it. Why, she'll be in her own house before her certificate would be any use." Further, "I cannot afford to spend money on her for another, for she will never be able to give me one cent in return for what I spent on her." There would be exceptions to this, I know; but, on the whole, we should lose many an educated woman which no nation can afford.

In regard to salary, I can but say it is one of the most serious drawbacks to the profession.

This is not written for criticism, but in hope that it may help to a clearer decision on this subject.

J. W. D.

WENTWORTH TEACHERS' ASSOCIATION.

To the Editor of THE EDUCATIONAL JOURNAL.

DEAR SIR,—Enclosed please find copy of report of Committee appointed by the Wentworth Teachers' Association to consider the Entrance examination papers for 1894. It is our intention to try to secure the adoption of this report by the public school section of the Ontario Educational Association at its next session.

Yours truly,

A. BAYNTON.

Waterdown, March 18th, 1895.

Officers and Members of the Wentworth Teachers' Association:

LADIES AND GENTLEMEN, — Your committee beg leave to report that, in accordance with your instructions, they have given very careful consideration to the various papers set at the Entrance examination in June, 1894, and have determined to suggest regarding the undermentioned papers, as follows:

ARITHMETIC.

(*a*) That the paper should consist of ten questions, valued ten marks each.

(*b*) That the marks be apportioned as follows:

(1) To technical terms—ten per cent. of total marks.
(2) To accuracy of integral and fractional operations—twenty per cent.
(3) To measurements—thirty per cent.
(4) To commercial arithmetic—forty per cent.

(*c*) That no choice of questions should be allowed—thus avoiding the explanatory note at the head of the paper.

(*d*) That examiners be directed to give full marks to questions answered to the nearest cent in commercial arithmetic.

DRAWING.

(*a*) That the free use of instruments in bookwork and at the examination be allowed.

(*b*) That the paper should always contain a test of freehand drawing.

The Committee were of opinion that the 1894 drawing papers might be taken for a model, were it not for the note at the head of it.

GRAMMAR.

That marks be apportioned as follows:

Analysis, 40. Parsing, 30. Inflection, 15. Correction of errors, 15.

WRITING.

(*a*) That there should be no questions on principles of writing until some well-defined system of principles is authorized to be taught in our public schools.

(*b*) That the paper of 1894 contains too much work for the time allowed.

GEOGRAPHY.

(*a*) That in question 5 (*a*) the words "and with Australia" be struck out.

(*b*) That the paper should contain more work on Canada.

(*c*) That it should contain a test on map-drawing.

(*d*) That the language should be more definite. See questions 4 and 6.

HISTORY.

That the Committee strongly approve of the apportionment giving two-thirds of the marks to Canadian history.

LITERATURE.

(*a*) That question (4) in A be struck out.

(*b*) That more care be exercised in the selection of the italicized portions.

(*c*) That questions like (4) in B are desirable as long as too difficult work is avoided.

(*d*) That at least fifteen marks should be allowed for memorization.

W. F. MOORE, Dundas,
Chairman of Committee.
A. BAYNTON, Waterdown,
Secretary of committee.

THE WATERLOO RESOLUTIONS.

To the Editor of THE EDUCATIONAL JOURNAL:

SIR,—Some time ago I made a brief reference to resolutions passed by the Waterloo Teachers' Association. I admitted the zeal of the advocates of such radical measures, but questioned their honesty of purpose and good judgment. I failed to see one redeeming feature in the resolutions, believing, as I do, that we should advocate that which is right rather than yield to the folly of doing evil that good may come. At that time I concluded that the noisy element, "the grasshoppers of the field," were alone responsible for the measures advocated, and yet, notwithstanding the claims of "A.B.C.," I see no reason to change my views. I am charged with being uncharitable in my criticisms, and not prepared to see the evils proposed to be allayed. I certainly fail to see a "collected, unified body, struggling to make their influence felt in the government of the country," for I know of no state in the universe where educational affairs are more at the disposal of the members of the teaching profession than in Ontario. I fail to see any indications of the "fallaciousness of the system" appearing, and conclude that such pictures exist only in imagination. But, admitted that I could see the situation from such a false position, to apply the remedy proposed would to me be indicative of about the same amount of good sense as to conclude to swallow a dose of poison for the relief of a slight headache.

If "A.B.C." would just for a short time look at educational affairs in Ontario from an independent position, he would fail to see the "mass of the teachers protesting against an outrageous and vicious system." He would be able to see the many good features of an ideal system being moulded to a great extent by the teachers themselves. Shakespeare wrote much, but in all cleverly concealed his own personality. How unlike the great bard is "A.B.C.," who, in a few sentences, gives us a view of his whole bent of mind! Would it not be well for our brother, in the face of indications, to reflect that, after all, he might be viewing the situation through stained windows, and thus be misled? We never attempted to belittle scientific training, nor do we believe that the educational system of the province is perfection, but who to hold responsible for seeming defects, and how to remedy them, are problems that should be faced in a spirit far different from that manifested by "A.B.C."

Is it right for us, who are now teaching, to ask the government to give us a monopoly of the profession? Is it charitable for us to call those "adventurers" who have spent years in careful preparation in our Public, High, and Model Schools, simply because we have travelled the road a few years in advance of them? Is it right to deny young men and women the privilege, after such preparation, of entering the profession until they have reached the age of twenty-one, simply to create a scarcity of teachers, and thus raise the salaries? Is it wise to demand an extension of the Model and Normal terms in the face of the fact that the terms are now long enough to accomplish sufficient work, under proper conditions? Is it wise to attempt to build up the profession from without? These are some of the many questions that should be considered by us before endorsing such radical measures.

"A.B.C." is evidently very imperfectly qualified to read the signs of the times, or he would be able to see that the leaders of thought in the Methodist conferences, etc., are imbued with the idea that matter is more important than method—that a knowledge of the principles that underlie all true education are more easily obtained than the means with which to apply them.

It being true that what we know thoroughly we cannot help but teach, it follows that any change to be effected should be in the direction of making the future teacher's course more thorough, not more extensive. Teachers should be compelled to educate, not cram, by allowing the courses to remain as they are, and raising the percentages required for a pass. If candidates for teachers' certificates were required to evince, upon examinations, such a thorough knowledge of the Entrance, Public School Leaving, and Primary courses as to be able to take an honor standing at each examination, our Model Schools would be able to do much better work without extended terms, cramming for examinations would be reduced greatly, individual effort stimulated, and the profession built up, as it should be, from within.

We have every reason, as a people, to feel proud of our educational position and progress, and we feel confident that no combine of inactive, spoon-fed teachers shall ever be permitted to mould the future of this the banner province of a great country.

JOHN J. SKENE.

Chatsworth, March 8th, 1895.

Teachers' Miscellany.

LAUGH A LITTLE BIT.

Here's a motto, just your fit—
Laugh a little bit.
When you think you're trouble hit,
Laugh a little bit.
Look misfortune in the face,
Bear the beldame's rude grimace;
Ten to one 'twill yield its place,
If you have the wit and grit
Just to laugh a little bit.

Keep your face with sunshine lit,
Laugh a little bit.
All the shadows off will flit,
If you have the grit and wit
Just to laugh a little bit.

Cherish this as sacred writ—
Laugh a little bit.

EDUCATION IN CHINA.

In no country is education more highly esteemed than in China. The child of the workingman, as a rule, cannot hope to get more than a mere smattering. But scattered through the country are numberless families, the members of which for generation after generation are always students, and from whom, as a rule, the officials come. They have no knowledge of any business or trade. They correspond very closely to what are, or used to be, called gentlemen in England, and preserve their position with great tenacity, even when hard pressed by poverty,

Rich parvenus, as a matter of course, engage tutors for their children; and in the humblest ranks of life occasionally parents will stint themselves to give an opportunity to some son who has shown marked intelligence at the village school. But neither of these classes compete on an equality with those to whom learning is an hereditary profession. The cultivation and intellectual discipline prevailing in such families give their members a marked advantage over those who get no help of the kind at home, and who must, therefore, depend entirely on what they learn from their paid teachers.

The orthodox scheme of education is entirely concerned with the ancient literature of China. The original works which occupy the student's attention were for the most part written before the literature of either Greece or Rome had reached its prime. But there are commentators belonging to later periods who must also be perused with diligence. China has not seen an influx of new races, such as have overrun Europe since the days of our classical authors; but still, from mere lapse of time, the language of the country has greatly changed, and the child beginning his studies cannot, without explanation, understand a single sentence, even if he has learned to read the words of the lesson which he has before him. The student makes himself acquainted as thoroughly as possible with these classical works. The more he can quote of them the better, but he must master the matter contained in them as well.

He must get to know the different readings and different interpretations of disputed passages, and, finally, he practises himself in prose and verse composition. In prose he carefully preserves the ancient phraseology, never admitting modern words, though there are certain technicalities of style which will prevent his productions from being an exact imitation of the ancient literature. His verses must be in close imitation of the old-time poets. They must follow elaborate rules as to rhythm, and the words must rhyme according to the classical sounds, which are very different from those of to-day.—*The Nineteenth Century.*

Book Notices.

JOHNSON'S LIFE OF MILTON, with Introduction and Notes, by F. Ryland, M.A. London: George Bell & Sons. Pp. 135. Price 2s. 6d.

Mr. Ryland has done a real service to the readers of Johnson in the careful edition he has made of the *Milton*. The notes to the life are full and accurate, revealing the greatest industry on the editor's part in showing all difficulties of allusions, references, and quotations. A life of Johnson and some excellent comments on the character of literary criticism of the eighteenth century form the introduction.

SUPPLEMENTARY EXERCISES TO MACMILLAN'S PROGRESSIVE FRENCH COURSE. First year. By G. E. Fasnacht. London: Macmillan & Co. Toronto: Copp, Clark Co. Pp. 80. Price, 1s.

This book of exercises, while arranged to supplement Fasnacht's well-known First Year French Course, by giving a most thorough drill in the grammar, can be used by teachers who use other grammars. It is well compiled, the sentences varied and not devoid of interest, and carefully graded—thus giving distinct help in teaching French in elementary classes.

AN INTRODUCTION TO THE STUDY OF ENGLISH FICTION, by W. E. Simonds. Boston: D. C. Heath & Co. Pp. 240. Price, $1.

The last few months have seen the publication of various treatises on English fiction. One of the less pretentious of these, and not the least valuable, is the book before us. The author has the right historical perspective—sketching first the story-telling of Anglo-Saxons, of the Normans, of the Elizabethans, before coming to the rise of the novel proper, the plain story of the common life of every day in the eighteenth century. The characteristics of succeeding novelists, the questions of romanticism and realism, are likewise briefly touched on. The second part of the volume is made up of selections from Beonnef to Tristram Shandy, complete a useful volume, which will contribute to set people thinking of the true value of fiction, and especially of the novel in public culture.

A DANISH AND DANO-NORWEGIAN GRAMMAR, by P. Groth, A.M. Boston: D. C. Heath & Co. Pp. 143. Price, $1.

The appearance of this scholarly and convenient grammar of Danish—which is also, with slight variations, the language of Norwegian culture—will be welcomed by all friends of the northern languages. Nearly half the book is taken up with the pronunciation, in which the labors of Sweet and Jeopersen are pressed into popular service; the etymology (accidence) gives an easy oversight of the chief characteristics of the grammatical form; and some exercises, only too few, seek to impress the chief rules. The absence of any extracts for reading is to be regretted in an elementary book, in spite of the author's references to such by other editors. The student of English will find many points of interest in running over this grammar of a kindred language, points of agreement and difference, while to any one wanting an introduction to the language of Ibsen and Bjornson, here is a convenient and reliable work.

OFFICIAL CALENDAR

OF THE

Educational Department

April:

1. Return by Clerks of counties, cities, etc., of population to Department, due. [P. S. Act, sec. 129.] (*On or before 1st April.*)
   Application for examination for Specialists' certificates of all grades to Department, due. (*On or before 1st April.*)
11. High Schools close, second term. [H. S. Act, sec. 42.] (*Thursday before Easter Sunday.*)
12. GOOD FRIDAY.
15. EASTER MONDAY.
    Reports on Night Schools due (Session 1894-5). (*Not later than 15th April.*)
16. Annual Meeting of the Ontario Educational Association at Toronto. (*During Easter vacation.*)
22. High Schools open, third term. [H. S. Act, sec. 42.] (*Second Monday after Easter Sunday.*)
    Public and Separate Schools in cities, towns, and incorporated villages open after Easter holidays. [P. S. Act, sec. 173 (2); S. S. Act, sec. 79 (2).] (*Same as for H.S.*)
24. Art School Examinations begin. (*Subject to appointment.*)
25. Toronto University Examinations in Law begin. (*Subject to appointment.*)

May:

1. Toronto University Examination in Arts, begins.
   Examination for Specialists' certificates (except Commercial) at the University of Toronto, begin. (*Subject to appointment.*)
   Principals of High, Public, and Separate Schools to notify Public School Inspectors of number of candidates for the High School Primary Examination in Oral Reading, Drawing, and Commercial Course, to be held at same places as High School Entrance Examinations. (*Same as Entrance Examinations.*)
   Notice by candidates for the High School Entrance and Public School Leaving Examinations, to Inspectors, due. (*Not later than 1st May.*)
   By-law to alter school boundaries—last day of passing. [P.S. Act, sec. 81 (3).] (*Not later than 1st May.*)
3. Inspectors to report to Department number of papers required for the High School Entrance and Public School Leaving Examinations. (*Not later than 3rd May.*)
   Inspectors' nomination of Presiding Examiners for High School Entrance and Public School Leaving Examinations, due. (*3rd May.*)
   ARBOR DAY. (*1st Friday in May.*)
24. QUEEN'S BIRTHDAY (*Friday*).
    Notice by candidates for the Departmental Primary and the High School Leaving and University Matriculation Examinations, to Inspectors, due. (*Not later than 24th May.*)
25. Notice of the same by Inspectors to Department, due. (*Not later than 25th May.*)
    Nomination of Presiding Examiner for same, due. (*One month before Examination.*)
27. Examination at Provincial School of Pedagogy at Toronto, begins. (*At close of session.*)
31. Close of Session of Provincial School of Pedagogy. (*Shall end on 31st May.*)

SELECTIONS FOR LITERATURE.

ENTRANCE,—1895.

Fourth Reader.

Lesson I. Tom Brown.
Lesson V. Pictures of Memory.
Lesson X. The Barefoot Boy.
Lesson XVIII. The Vision of Mirza.—*First Reading.*
Lesson XX. The Vision of Mirza.—*Second Reading.*
Lesson XXIII. On His Own Blindness.
Lesson XXVI. From "The Deserted Village."
Lesson XXXII. Flow Gently, Sweet Afton.
Lesson XXXVII. The Bell of Atri.
Lesson XLII. Lady Clare.
Lesson LXVIII. The Heroine of Vercheres.
Lesson LXXVI. Landing of the Pilgrims.
Lesson LXXXIX. After Death in Arabia.
Lesson XCI. Robert Burns.
Lesson XCIV. The Ride from Ghent to Aix.
Lesson XCVI. [illegible] the United States.
Lesson XCVI. [illegible]
Lesson CI. [illegible]