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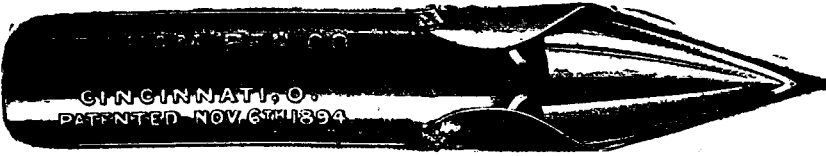
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An entirely new work, incorporating, however, much of the "Elements of Physics," published some years ago. The present work is much larger and its scope extended, but the same general plan is followed. There are practically two courses, one for High Schools and the other for colleges. In spite of the author's protest that "true education does not consist in the acquisition of the fewest possible facts about any subject," one can hardly be expected to believe that the acquisition of facts is education in its true sense, even if the number acquired is the largest possible. The typography and presswork are excellent.

With the October number *The Century* closes its twenty-fifth year and its fiftieth volume. This month marks the centenary of Keats, and there are several articles on the poet. Kenyon West writes of "Keats in Hampstead," tracing with care the haunts of the poet in that place, and recording the reminiscences of an aged Englishman who, as a boy, knew Keats and idolized him. Henry Van Dyke furnishes a study of "The Influence of Keats" on English and American poetry. There are also several

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tributes to E. J. Glave, the young explorer who died a few months ago in Africa, where he was conducting an investigation of the slave trade in the interests of this magazine. Professor Cesare Lombroso has an essay on "Nordau's 'Degeneration': Its Value and Its Errors." There is a second and concluding paper by Miss Anna L. Bicknell on "Life in the Tuileries under the Second Empire," full of lively notes of Eugénie and the ladies of her court. Professor Sloane's "Life of Napoleon" reaches the period of the execution of the Duc d'Enghien. There is a study of "The Marriage Rate of College Women,"

by Miss Millicent W. Shinn. Mrs. Anna Bowman Dodd writes of "A Cruise on the Norfolk Broads," a delightful yachting experience in England, for which Joseph Pennell has drawn a number of illustrations. Besides the concluding chapters of Marion Crawford's dramatic novel, "Casa Braccio," the fiction of the number is contributed by George A. Hibbard, Ruth McEnery Stuart, and George Wharton Edwards.

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No. II.

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Editorial Notes.

SEE our clubbing list on last inside page.

THE new book of Drs. McLellan and Dewey contains what the *Globe* critic calls "an unanswerable criticism of the Grube Method." "With the circulation of this book among teachers," says the critic referred to, "we shall hear little more about the Grube grinds on 'the number five and all that can be done with it.'" Unless the criticism is absolutely unanswerable, it is hardly likely, we fear, that the Grube teachers will abandon the much-vaunted method so readily.

AN exchange tells us that music has been a part of the regular course in the Minneapolis Public Schools for the last twenty years, and that to-day there are very few among the 30,000 pupils of its schools who do not know something of music. Can as much as is affirmed in the latter sentence be said of the pupils of our Canadian schools, either in the city or in the country? If not, why not? Surely, as a refining influence and a source of pure and elevating pleasure, music is worthy of a place in the regular course in every Public School.

A WEEK or two ago two Chinese boys, born in the United States, were stoned in a place near New York city by the other children of the Public School to which they were sent. How far does such an act differ in spirit from that which prompts the maltreatment of missionaries in "barbarian" China? Even in the "good" city of Toronto we have known the mutual prejudices and dislikes of Protestant and Catholic children to reach very nearly to the persecution point, on the part of the majority. There is need of missionary work even in the Public Schools.

How much reading is done every week, on an average, by our Public School teachers, and what is the quality of the books and periodicals read? If we could have a census, and a report in answer to these two questions in the case of each individual, we should have a very fair test of the qualifications, the attainments, and the promise of every teacher. Depend upon it, friend, if your literary thirst is not strong enough to cause you to seek to quench it daily at the purest fountains, you are missing a grand opportunity. We say opportunity, for there are few workers, after all, who can command so much time for self-culture as the teacher. If you do not enjoy good literature, it must be because your mental training has not yet proceeded far enough. For your own sake and that of your pupils, lose no more time. Learn to do by doing. Learn to appreciate and to enjoy first-class literature by studying it. The process will be a delightful one for any ordinarily active mind. But, then, what a waste of time to write thus, forgetting that the teacher who does not read is the very teacher who does not take THE JOURNAL!

"IDEALS," says a recent writer, "give to the soul the power of noble achievement. They are the mainsprings of human action. Without them life becomes a monotonous treadmill existence." There is vital truth in these words, extravagant though they may seem to the prosaic. But it is implied that the ideal

must be lofty. There is nothing which glorifies life like the uplifting power of a worthy ideal. It is the soul of all high endeavor. No one, perhaps, stands more in need of this inspiration than the teacher. The presence or absence of a true ideal goes far to make the difference between the teacher whose enthusiasm is a perpetual inspiration and the poor hireling of the schoolroom who spends the hours of the work day in longing for the moment of release, and who does not hesitate to tell you, in an aside, that he or she "hates teaching," and does it only as a means to an end, generally a selfish or sordid end. But such teachers have also their ideals. The great difference, after all, is in the kind of the ideal. Tell us what are the ideals of a given teacher, and we can tell you pretty nearly what is the character of his or her work and influence in the schoolroom.

WOULD that the following "o'er true" words of the late Henry Ward Beecher could be blazoned where they would constantly meet the eyes of every member of every school board in the Dominion:

There is no economy so penurious, and no parsimony so mean, as that by which the custodians of public affairs screw down to the starvation point the small wages of men and women who are willing to devote their time and strength to teaching the young. In political movements thousands of dollars can be squandered, but for the teaching of the children of the people the cheapest must be had, and their wages must be reduced whenever a reduction of expenses is necessary. If there is one place where we ought to induce people to make their profession a life business, it is the teaching of schools. Oh, those to be taught are nothing but children! Your children, my children, God's children, the sweetest, and dearest, and most sacred ones in life. At the very age when angels would be honored to serve them, that is the time when we put them into the hands of persons who are not prepared by disposition to be teachers, and who are not educated to be teachers, and who are continuously bribed, as it were, by the miserable wages that are given to them, to leave their teaching as soon as they acquire a little experience. It is a shame, a disgrace to the American Christianity.

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

CORRESPONDENCE.

W.B.S.—How would you parse the under-scored expressions in the following sentences :

- (a) It is impossible *to get* a chance to read it.
 (b) Are we *to lie* here, *cooped* up for ever?
 (c) He maketh me *to lie* down in green pastures.
 (d) How funny *to have* a dear little grandma, etc.
 (e) I am going *to get* well.
 (f) What is *to be* will be.
 (g) What distinction is made between the infinitive and the gerund?
 (h) Are picturesque and arabesque simple or derivative words? If derivative, what is the origin and the force of the suffix?

(i) Distinguish between affect and effect. Song from "The Princess." (Third Reader.)
 (j) What circumstance led to the writing of this poem?

(k) "Home they brought her warrior dead." To whom does "her" refer? Who was the "warrior"?

ANS.—"To get a chance," etc., is properly the subject of the sentence of which "is impossible" is the predicate. The use of the demonstrative or expletive "it" to begin the sentence, is a familiar English idiom, the "it" being equivalent to the sentence which forms the subject. The writer might have simply said, "To get a chance," etc., is impossible. "To get" is the verbal noun, and retains its transitive force, governing, or, as we should prefer to say, limited by, "chance."

(b) The older grammarians, or a certain class of them, would probably resort to the familiar device of assuming that some word is understood, as, Are we *doomed*, Are we *fated*? To our thinking, the true explanation is that in this very common use of "are," and other forms of the verb *to be*, the verb is not used as a simple copula, but in the sense of including or involving a certain result or consequence which is defined by an infinitive clause following. According to this view, the infinitive "to lie," with its modifiers, is syntactically dependent upon the idea of futurity or necessity implied in the verb "are" itself. "Cooped" is a predicative adjective, in agreement with "we."

(c) "To lie," etc., is a verbal noun (infinitive), depending upon "to make" (in the sense of to cause or bring to pass), having "me" as its subject. We might say that "me to lie down," that is, my lying down, is the thing which is made or caused.
 (d) "To have," etc., is the subject of the predicate "(is) funny," the copula being unexpressed, as it often is in all languages.

(e) "To get," in the sense of to "become," depends grammatically upon the present participle "going." This results from a peculiar use or meaning of the verb "go" to express a desire or intention, or, as here, an expectation.

(f) For the explanation of "to be" see (b). "Will be" is the future tense of the verb "to be" in the third person singular, "be" being here used in its primary sense of *exist*, or possibly in the derivative one of *come to pass*.

(g) In many of their uses, it is hard to discern any difference between the gerund and the infinitive. They are simply two forms of the verbal noun. Perhaps the only tangible distinction is that, in usage, the infinitive is sometimes found where the gerund cannot be; e.g., we say, He wishes to go, but can hardly say he wishes going.

(h) The origin of the termination *esque*, in such words as picturesque, arabesque, romanesque, is from the Italian *esca*. The termination which, in the original Latin, marks "inchoatives," or verbs denoting beginning, denotes a degree of resemblance to that which is denoted by the root word; a picture, the Arabic style, etc.

(i) To affect is properly to act upon, to produce a change, an *effect* upon. To effect is to accomplish, bring to pass. Overwork had affected his health, but a change of climate has effected a cure.

(j) So far as we can discover, there was no particular circumstance or incident which led to the writing of Tennyson's "The Princess." There is, of course, in the plot, a flavor of that in Shakespeare's "Love's Labor Lost."

(k) "Home they brought her warrior dead." The *her* refers to the wife, who is the subject of this song, the stanzas of which were probably written as an introduction to Part VI. of "The Princess." And so of the "warrior." These terms do not refer directly to characters in the poem ("The Princess"), but the song is prefixed by reason of the parallelism suggested to the scene described in the poem. The song illustrates the thought that the appeal made to the mother heart by love of the babe effects the desired result, when all other motives have failed. The relation of this to what follows is obvious.

W.L.H.—(a) In the sentence, "As for the Huron deserters, their cowardice profited them little," please give a complete analysis of above sentence and construction of "little."

(b) Correct, "This is the thanks I get for my pains."

(c) He felt the strange points of pressure, which seemed to him like mouths "change" their places from time to time. Give construction of "change."

ANS.—(a) Subject, "cowardice"; *modifier of subject*, "their." *Verb*, "profited"; *modifier of verb*, "little" (adv.). *Object*, "them." The introductory clause, "as for," etc., is explanatory of the subject, or rather of its pronominal modifier "their," "as" being equivalent to "in respect to," "touching." Some might prefer to regard it as modifying some such word as "speaking," understood, but we think it better to avoid assuming an ellipsis, when possible.

(b) *These are* the thanks, etc.
 (c) "Change" is the infinitive, or verbal noun, limiting (governed by) "felt." The sign of the infinitive, "to," is omitted after *feel*, etc.

A SUBSCRIBER.—

(a) Meanwhile the Tuscan army, right glorious to behold,
 Came flashing back the noontide light, *rank behind rank*, like surges bright,
 Of a broad sea of gold.

Parse italicized words.

(b) Loose his beard, and hoary hair
 Streamed *like* a meteor to the troubled air.
 —The Bard.

Parse *like*. Is *loose* a predicate adjective or an attributive? What is predicate of *beard*?

(c) How do you account for the fact that a whisper spoken in a diving bell sounds so loud? (The substance of a question asked in Primary Physics.)

ANS.—(a) 1. Probably the more common explanation would make "rank behind rank" an absolute clause with the participle of some verb understood (rank *being ranged*, *marching*, etc., behind rank). We prefer to regard "rank" as in apposition (a part with the whole) with "army." The two constructions may not differ very much, as to complete the construction we should, in the latter case, need "flashing" (rank *flashing* behind rank). 2. *Behind* is a preposition governing (limited by) the word "rank," which follows it. 3. *Like*. An adverb modifying "flashing."

(b) *Like*. Same as in (b) 1. As a meteor flashes. A good deal might be said in favor of regarding *like* as a preposition governing the noun following, in both cases.

(c) Look for answer in Science column.

L.N.—Inch Cape, or Bell Rock, is a dangerous ridge of rock about 2,000 x 100 feet (partly uncovered at spring-tides) lying nearly opposite the Firth of Tay, on the east of Scotland. A magnificent lighthouse, built in 1811, now occupies the place of the bell, after which the work was named, and which, according to tradition, was fixed by an abbot of Aberbrothock (Arbroath) upon a floating platform of timber.

(The last three of the foregoing questions were asked some months ago, but the "copy" was mislaid.)

KING HUMBERT, on the occasion of his visit to Venice recently for the opening of the International Art Exhibition, honored the Rev. Alexander Robertson, D.D., the Scottish minister in that city, by receiving him in private audience at the royal palace. The interview lasted some time, and was of a very cordial description. Such an event proves the fine liberal spirit of His Majesty, and the regard he has for Christian writers and workers amongst his people.

Hints and Helps.

DULL PUPILS.

In every school there are a few pupils whose eyes have still the vacant stare after nearly all have grasped the principle the teacher wishes to explain. The teacher should make special endeavors in their behalf. He should always treat them kindly; never scold, never worry, never fret. Do not lose patience though they make great blunders. Cover their dullness, as far as possible, with the mantle of love; never exhibit it to the ridiculous laugh of their brighter classmates. Have them understand that you are their best friend, who spares neither trouble nor labor for their advancement, and who would, as far as possible, give them an equal opportunity for the race through life.

Wake up the ambition of such pupils by asking questions they can answer, and by pointing out the progress they have made; this will also strengthen their self-confidence. If possible, make them voluntarily try again. The dull pupils should be asked often, and the easiest questions, keeping them astir, as it were, and the bright pupil in reserve for the more difficult work. No question should be asked a dull pupil which, with a good reason, the teacher doubts whether he can answer, for every question not answered will lessen his self-confidence, and also his self-respect, to his standing in the class. Often the pupil's dullness vanishes entirely after his ambition has been aroused, and he is started aright.

If the dullness relates to one special branch, point out to the pupil the value of this study for practical life, and that his education would always have a defect if he does not master the difficulty now.

If, then, with all your care, you do not succeed as well as you wish, and you begin to think that your labor is thrown away, look to the after life of the pupil; I assure you, he will appreciate your labor then, and be ever grateful for the kindness bestowed upon him.—*Educational Record*.

JUSTICE AND INJUSTICE.

Justice and injustice are closely akin in childhood. A child early detects injustice in others, though he is not delicately susceptible to it in himself. The same is largely true of children of larger growth. At first with the young child injustice is little more than a change of habitual action. Whatever disturbs his uniform activity, whatever occurs that he does not expect, is to him an injustice. With him, justice is the expected, injustice the unexpected.

One of the highest missions of home and school is to establish a spirit and habit of justice in the child, so that he shall have a keen sense thereof as applied to himself. This should be well done before the child comes to school; but, if it has not been accomplished, it should receive early and persistent attention.

Recent child studies reveal the fact that most children get the impression that the teacher is unjust at times. Their estimate of punishments is almost invariably based on the fact that some one else ought to have been punished also, or that some one should have been punished more severely, or himself less so. These child studies have revealed the fact that almost the only view a child has of his punishment is its justice or injustice, and that he almost invariably argues himself into the position that it was unjust. In no case yet discovered, I think, has a child complained of the severity if he said, "I deserved it."

This being the case, it shows conclusively that the punishments usually lose their virtue because they become an excuse for the child's conduct. The irreconcilable differences between capital and labor are largely the result of the habit of most men to argue themselves into the belief that they are right and the others wrong. Capital sees clearly the injustice of a strike that will not allow other men to work who wish it; the case is clear that any man has a right to work if he pleases, regardless of the wishes of other laborers. Labor sees clearly the injustice of capital that reduces wages without reducing the rent of houses owned by the employer; that reduces wages whenever business does not pay, but does not, of its own accord, raise them when business pays largely.

The case is clear, that if it is right to cut, it is right to raise. Both capital and labor are usually right in their estimate of the specific injustice of the other, but neither is ever right in its estimate of its own injustice, or of the justice of the other. It is so of other relations. Every man wins his case before he gets into court and when his lawyer makes his plea, but the cold common sense of the jury sees justice as does only one of contending parties.

It is of greater service to the child and to mankind for a teacher to train children to estimate justice and injustice with the personal element eliminated than it is to secure 100 per cent. in arithmetic, or even in spelling.—*The American Teacher.*

DO NOT USE

"Stopping," for staying; as "He is stopping with us," for "He is staying with us."

"Some" for about or probably. "It is some five miles to town" should be "It is about five miles," etc.

"Storms," for rains or snows. Storm is an atmospherical disturbance, and has reference to air and wind.

"Nice," for pretty, good. "That is nice. He is a nice boy. Isn't she nice?"

Something nice is delicate, exact, as a nice point in a discussion.

"Try and come," for "Try to come," "to do so," "to write."

"Posted," for informed; as, "He is not posted on that matter; post him on the subject." Post means to put up a sign or to drop a letter in the post office.

"Guess," for suppose or think. "I guess this is right" should be "I think."

Guess means to "hit at random," as, "I can't guess how many cents you have."

"Party," for person. Party is a gathering of people, not an individual. "Who is that party?" should be "Who is that person," "that man," or "that woman?"

"Funny," for odd, strange. As, "It seems very funny to me that he does not come," should be, "It seems very strange." Funny is something amusing, full of fun.

Stop a moment and think before using the words "ought" and "should." Ought implies that we are morally bound to do something. Should is not quite so strong a term. We ought to be honest; we should be tender toward little children.—*Mary Porter Langely, in National Educator.*

WHY SOME TEACHERS FAIL.

READ THIS CAREFULLY, AND THINK WHETHER ANY OF IT APPLIES TO YOU.

- They are lazy.
- They neglect details.
- They use poor judgment.
- They complain too much.
- They have no eye to order.
- They are not polite enough.
- They do not try to improve.
- They fail to have new ideas.
- They are easily discouraged.
- They underrate the business.
- They never visit the parents.
- They fail to manage with tact.
- They overestimate themselves.
- They keep away from the pupils.
- They underestimate their pupils.
- They fail to use such ideas as they have.
- They do not study the children.
- They attend no teachers' meetings.
- They are stingy toward themselves.
- They are rusty and without ambition.
- They have too much outside business.
- They hope to get along without effort.
- They are penny wise and pound foolish.
- They are trying to go into something else.
- They think the school was made for them.
- They read no educational papers or books.
- They fail to know what the world is doing.
- They know so much they will learn no more.
- They follow the same methods with each class.
- They do not study the great masters of the art.
- They think most things take too much trouble.
- They do not find out what other teachers are doing.
- They think inferior work does just as well as good work.

They neglect to think of the pupil's good at every point.

They philosophize on everything but their own business.

They do not determine to be the best teacher in the place.

They have become dry, stale, and repulsive to live children.

Fail to practise what the educational papers tell them.

Think they cannot learn anything more about their art.

Forget that the art of teaching is an art that requires study.

Rely on the little stock of goods they began business with.

Began with a small stock of ideas and have not increased it.

Think any one can teach who knows a little about the studies.

Can see the weak points in their scholars, but not in themselves.

Do not seek for inspiration by studying the methods of the best teachers.

Do not see that the profession is as high as the teachers themselves raise it.

Are not in real earnest to teach, so that "tomorrow find them farther than to-day."

Do not take common sense as a guide, but hug a formalism handed down from the dark ages.

Drop the school when it is out, and never think of it again until they come before their pupils the next morning.—*Selected.*

ORDER.

Order in school is both a means and an end; a means by which the work of the school may be carried on uninterruptedly and profitably; and an end in that the pupil may, through the growth of good habits, become an orderly and law-abiding citizen. Order determined by outside force is like a wild animal chained, but untamed. Connected with such order there is a constant strain on the part both of the authority and of the governed. Under its rule disorder often waits only an opportunity, and the habit of self-control is not a feature of such conditions. In such an atmosphere the spirit of work, or study, is chilled and enthusiasm deadened. In after life a person who has been much subjected to such discipline always looks upon his school days with unpleasant memories, and, whether he is aware of it or not, he has lost the golden opportunity of training his will in self-control. Order determined by principles implanted in the pupils, causing them to control themselves, is most helpful and greatly to be desired. It is the only discipline. In the school where it exists, the atmosphere is full of the spirit of good feeling and industry. The work moves along without a jar of disturbance; the habit of self-control, more valuable than the shining gold, is a part of the education received under such training, and in after life is the guiding hand that leads to success and happiness.—*Educational Foundations.*

For Friday Afternoon.

THE DUEL.

The Gingham dog and the Calico cat
Side by side on the table sat;
'Twas half-past twelve, and (what do you think?)
Neither of them had slept a wink,
And the old Dutch clock and the Chinese plate
Seemed to know as sure as fate
There was going to be an awful spat.
(I wasn't there—I simply state
What was told to me by the Chinese plate.)

The Gingham dog went "bow-wow-wow!"
And the Calico cat replied "meow!"
And the air was streaked for an hour or so
With fragments of gingham and calico,
While the old Dutch clock in the chimney place
Up with its hands before its face,
For it always dreaded a family row.
(Now mind I'm simply telling you
What the old Dutch clock declares is true.)

The Chinese plate looked very blue,
And wailed, "Oh, dear! what shall we do?"

But the Gingham dog and the Calico cat
Wallowed this way and tumbled that,
And utilized every tooth and claw
In the awfullest way you ever saw—
And, oh! how the gingham and calico flew.
(Don't think I exaggerate—
I got my news from the Chinese plate.)

Next morning, where the two had sat,
They found no trace of the dog or cat.
And some folks think unto this day
That burglars stole that pair away;
But the truth about that cat and pup
Is that they ate each other up—
Now, what do you really think of that?
(The old Dutch clock it told me so,
And that is how I came to know.)

—*Eugene Field.*

A RAIN SONG.

Tinkle, tinkle,
Lightly fall
On the peach buds, pink and small;
Tip the tiny grass, and twinkle
On the willows green and tall.

Tinkle, tinkle—
Faster now,
Little raindrops, smite and sprinkle
Cherry bloom and apple bough!
Pelt the elms and show them how
You can dash!
And splash! splash! splash!
While the thunder rolls and mutters, and the
lightnings flash and flash!
Then eddy into curls
Of a million misty swirls,
And thread the air with silver, and embroider it
with pearls!

And patter, patter, patter
On the mossy flags, and clatter
On the streaming window pane.
Rain, rain,
On the leaves,
And the eaves,
And the turning weathervane!

Rush in torrents from the tip
Of the gable peak, and drip
In the garden bed, and fill
All the cuckoo cups, and pour
More and more
In the tulip bowls, and still
Overspill
In a crystal tide, until
Every yellow daffodil
Is flooded to its golden rim, and brimming o'er
and o'er.

Then as gently as the low
Muffled whir of robin wings,
Or a sweep of silver strings,
Even so
Take your airy April flight
Through the merry April light,
And melt into a mist of rainy music as you go.
—*Evaleen Stein, in May St. Nicholas.*

The weary world's a cheery place
For those with hearts to win it;
Thank God, there's not a human face
But has some laughter in it!
The soul that comes with honest mirth,
Though health and fortune vary,
Brings back the childhood of the earth,
And keeps it sound and merry.

The plodding world's an eager place
For those with wit to use it;
Where all are bidden to the race,
Let him who dares refuse it!
The simplest task the hand can try,
The dullest round of duty
Knowledge can amply glorify,
And art can crown with beauty.

A busy, bonny, kindly place
Is this rough world of ours
For those who love and work apace,
And fill their hands with flowers.
To kind and just and grateful hearts
The present grace is given
To find a heaven in themselves,
And find themselves in heaven!
—*Dora Read Goodale, in the Congregationalist.*

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Lincoln,	at St. Catharines,	Oct. 17 and 18.
West Grey,	at Owen Sound,	Oct. 17 and 18.
East Grey,	at Collingwood,	Oct. 24 and 25.
West Bruce,	at Kincardine,	Oct. 24 and 25.
South Simcoe,	at Tottenham,	Oct. 24 and 25.
North Essex,	at Sandwich,	Oct. 24 and 25.
Lennox, Add'ton,	at Napanee,	Oct. 17 and 18.
Grenville,	at Cardinal,	Oct. 17 and 18.
Durham,	at Bowmanville,	Oct. 25 and 26.

The Inspectors or Secretaries will greatly oblige us by giving us timely notice of the dates and places of meeting of the Institutes in their respective localities.

Editorials.

TRAINING THE FATHERS.

ON the principle, which has unquestionably as much truth as poetry, that "the boy is father to the man," it is very evident that the Canadian teachers of to-day have very much to do with determining what kind of men and women shall be the citizens of Canada twenty-five years hence. So much is being said just now to emphasize the familiar but all-important truth that the highest work of the teacher is character-building that we hesitate to say much upon the subject, lest teachers should become surfeited with it, or turn from it as a kind of educational cant. But a paragraph which we have just been reading in the *Toronto World* has reminded us of one aspect of the subject to which we have had in mind for some time to ask the teachers' most serious attention. The paragraph referred to is the following:

"One physician, who has been a prominent practitioner in this city for more

than twenty years, and whose experience has covered a large field, said to the reporter, 'I am thoroughly aware of the growth of the drug evil in this city, and it is with difficulty that I find myself able to check its rapid progress among those with whom I come, professionally, in contact. I am inclined to attribute the disease, for such it really is, incipiently, to the too frequent smoking of cigarettes, the majority of which, as you are probably aware, contain a certain quantity of morphine. The effect of the morphine thus taken into the system is to unstring the nerves, and it is, in many instances, but the beginning of the end, for the opiates thus consumed whet the appetite for more, and the practice of applying the drug in the manner customary with the "fiend" is resorted to, guardedly enough, probably, at first, but, as the system becomes accustomed to it, the quantity is increased, and the inevitable result must follow, unless the most stringent remedies are applied and rigidly adhered to.'"

This paragraph is extracted from a report of interviews with a number of Toronto physicians, all of whom agree in describing in strong terms the mischief and misery which are being wrought by the alarming growth of the practice of using morphine and other strong drugs among young men and women of all classes. Attention has been directed to this matter by the frequency of sudden deaths, ascribed to the use of narcotic drugs, announced in the newspapers during the last few months. The *World* representative "called upon a number of the leading physicians of the city; those whose practice carried them to the hospitals, prisons, and other public institutions; those who found their clients among the lower and middle classes, and those whose services were largely retained by the wealthier and more prominent of our citizens; and the result of these visits was simply to prove that the evil is growing to an alarming extent, not alone among the lower and criminal classes, but spreading, and in a particularly dangerous manner owing to the extreme secrecy observed, among those of the city's people whose breeding, rearing, and education should render them proof against such folly."

The point to which it seems desirable that the attention of teachers should be particularly directed is that the degrading and often fatal slavery to the drug habit is so often the result of the use of the cigarette. The Ontario Legislature has wisely forbidden the sale of cigarettes to young boys, yet one does not need to spend many days in the city to convince himself, if he is interested in the matter, that the law is only very partially enforced, and that numbers of small boys,

some of them very small, find means of procuring the noxious weed. Next to that of the boy in the saloon, one of the most pitiable sights that one can see is that of the boy with a cigar or cigarette in his mouth.

To what extent does the practice of cigarette-smoking prevail among school children? The question should have the anxious consideration of every teacher. It is to be hoped that the practice does not exist to any alarming extent in the rural schools, though it would not be well to take this for granted too readily. But we are much afraid that the same cannot be said of the average school in village, town, or city. Every good teacher will keep wide-awake in regard to the evil, and will try to create an atmosphere in the school which shall be decidedly hostile to the use of tobacco in any form. If there is good reason to fear danger, it may be well, in some cases, to encourage and aid the children to form "Anti-Tobacco" leagues. The writer remembers with pleasure having helped to form such an organization before he was in his "teens." This was, of course, before the seductive cigarette was invented. The use of all forms of intoxicating drink was also prohibited in the juvenile pledge. He congratulates himself on having kept that pledge until this day, and believes himself to have been the gainer physically, financially, and mentally as the result of so doing. A portion of the Friday afternoon could often be devoted to a familiar talk on this and kindred subjects with the pupils.

Teacher, as you look over those rows of boys and girls entrusted to your care, in each of whom, if you are a true teacher, you feel a strong personal interest, does it ever cause you a pang to remember that, in all probability, a considerable percentage of them will grow up to become the slaves of liquor, tobacco, morphine, or some other destroying habit, thus rendering themselves utterly wretched, and probably nuisances in the community? If you can, by the judicious use of your opportunities and personal influence, save even one, not to say many, from such a fate, and lead him or them up to lives of usefulness and influence for good, does it not seem to you that that is a work worth doing at almost any cost of time and labor?

AN "EPOCH-MAKING" BOOK.

IN the advertisement of Appleton & Co., in this number of THE JOURNAL, will be found an announcement which will, we doubt not, have a special interest for very many of our readers. The high standing

of Dr. McLellan as both an educational thinker and a practical educator in our own country, and the high reputation of Dr. Dewey, not only within, but beyond the boundaries of the United States, as an able worker along somewhat similar lines, cannot fail to attract attention to the announcement of a new book as the product of the joint labors for years of these two authors. When we are told that this book deals with so unhackneyed and pedagogically important a subject as the psychology of number, and deals with it, not only in its theoretical aspects as a question of philosophy, but in its practical applications in the teaching of arithmetic, it goes without saying that it is a book which every wide-awake teacher will make up his or her mind to procure and read.

This is not a review, but an apology for the non-appearance of one, which we had hoped, and, we fear, promised, to have ready for this number. We have been reading the book with much interest, in the very brief intervals of time which we can snatch for such a purpose, but have not yet completed it, and we hesitate to pronounce an opinion upon a work which so high an authority as Dr. Harris, chief of the United States Bureau of Education, prophesies will be "an epoch-making one," without something more than a cursory perusal. Meanwhile we feel that we shall be doing our readers a service in calling their attention to the fact of its publication.

THE WESTERN UNIVERSITY.

THE opening of the Arts Department of the Western University is an event upon which not only the authorities and friends of the University, but the people of Western Ontario in general, and of London in particular, are to be congratulated. The Western University and College was established in 1878, by Act of the Provincial Legislature. Through the medium of Huron College, which was chiefly instrumental in its establishment, and which became immediately affiliated as its Theological Department, it commenced operations in that faculty in 1881. The Department of Medicine was opened in 1882, and has since been in successful operation. The Arts Department was left in abeyance for a time, but, "through the cordial co-operation of the Bishop of Huron and the Council of Huron College," as we are told in the calendar, "the Senate is enabled now to reopen the Arts Department with encouraging prospects of success." We see no reason to doubt that this forward movement, if

the work of instruction is carried on with efficiency and vigor—and of this the announcement of a staff of ten professors and lecturers at the commencement is, so far, a guarantee—will give an intellectual stimulus to the whole western region, to which it looks, no doubt, for its chief support and patronage.

Many will, we dare say, be inclined to deprecate the multiplication of "one-horse" colleges, to use the favorite phrase of disparagement. For our own part, as we have had occasion to say more than once, we believe in variety and competition within reasonable limits, in education, as in business enterprises. The existence of active and energetic rivals is one of the best means of keeping the Provincial University out of the somnolency and ultra-conservatism into which State institutions are liable to fall—a rule to which our own Provincial University constitutes no exception, as those who are familiar with its past history can attest.

We are not told—unless the information is implied in the fact of its close relations with Huron College—from what source the indispensable endowment for the Arts work of the Western University is to come. It must, however, have not a few men of means among its friends and supporters. It is to be hoped that to these it may, not in vain, look for generous support. The principle seems firmly and, to our thinking, wisely established that no more of the public money of the Province shall be given for the purposes of higher education than that already pledged. But the way is clear and inviting for a large increase of voluntary patriotism and beneficence in this kind of work. No other conduces more directly and powerfully to the highest good of a people.

GRADUATE INSTRUCTION.*

THE associations and clubs of graduate students in the various American universities issue an annual volume containing the courses of instruction in graduate work on this continent. The present volume indicates, as compared with the two previous issues, the tremendous strides that graduate instruction is making in the United States. No less than twenty-one institutions of learning are, during the present year, occupied in the work. No less than 148 candidates received their degree of doctor of philosophy for research work, to say nothing of degrees such as doctor of science, granted on somewhat similar conditions. These facts speak volumes for the intellectual activity

of the American universities; for the liberality of the people in supporting institutions of the highest learning; for the wise direction of the resources of these institutions in the conservation and extension of human learning.

One melancholy fact will strike the Canadian reader as he turns over the pages of this book, closely packed with announcements of advanced courses in every department of knowledge—the absence of any reference to any institution in Canada offering graduate instruction. The fact is melancholy because it means so much. It means that we have not shared in the progress of education where progress is now most marked. So far we have failed to appreciate the benefits of graduate study, benefits that are of the first importance in education, such as the setting up of a high ideal of university life, knowledge, and the extension of knowledge; the influence of this ideal upon the undergraduate instruction; the influence of highly trained specialists throughout the country.

Nor does the immediate future hold out much hope that the Canadian colleges may become—in the modern sense of the word—universities. Apparently they have neither the means nor the inclination; nor can it be said that graduate work is at all a part of the "practical politics" of their administrators. With the wealth of Montreal around her, McGill might possibly have a constituency to appeal to, and make up for her neglected and stunted arts faculty by a graduate school that would crown her with honor. Toronto, with an unwieldy mass of students, a faculty divided against itself, and an already insufficient income, cannot even consider the possibilities of graduate work. We must, therefore, content ourselves with the unpleasing truth that our colleges, once among the first of this continent, are no longer reckoned among the institutions of highest learning.

Along with the development of graduate work, there has been a corresponding increase of endowments, in which Harvard, Columbia, and Chicago have chiefly shared. The incomes of the chief universities during the past year were as follows: Brown, \$115,957; California, \$300,000; Chicago, \$370,000; Columbia, \$747,635; Cornell, \$608,291; Harvard, \$1,054,484; Johns Hopkins, \$170,000; Leland Stanford, \$200,000; Michigan, \$445,272; Minnesota, \$225,000; City of New York, \$135,000; Wisconsin, \$364,759; Yale, \$650,000. Details of the income of Pennsylvania and Princeton are not given, but their revenues are very large.

* "Graduate Courses," 1895-6. New York: Macmillan & Co. Price, 25 cents; pp. 135.

Special Papers.

THE TEACHER'S MORAL INFLUENCE.*

It is an established fact that every person exerts an influence (be it small or great) over his fellows. If this be true of all rational beings, especially is it true of the teacher.

In order to get some idea of what that influence is, and how it can be best directed, it seems necessary that we should consider briefly the work itself and the qualifications essential for it.

The teacher's work is that of moulding, to a large extent, the intellect, character, conscience, and destiny of future generations of men and women.

Fitche says: "The ultimate end of all true education is to lead men and human society toward their highest moral destiny."

Education cannot create anything in a pupil, cannot put anything in him from without. It can only develop into consciousness the powers that are in him by arousing him to self-activity. It finds its aim in the formation of character, in self-emancipation, and in self-government.

Hence, if character-building is the ultimate aim of all true education, what a vast field of labor and usefulness opens out before every teacher upon entering his noble profession! Next to, if not side by side with, a mother's work and influence rank those of the teacher. Have we not all known instances where the home training was far from what it ought to have been in its moral influences and tendencies, in which the children have grown up to be in every respect worthy citizens?

Whence, then, could the influence which produced this result have come? I think we are justified in attributing a great share of it to their school training, and, consequently, to their teachers.

The school is, to a certain extent, the world's nursery, where all are, or should be, taught to love all that is true, and noble, and good, and to abhor all that is selfish, mean, and dishonorable. In the school the coming men and women should be trained to stability of character, trained to look upon vice as a monster to be repelled; trained to live fuller, richer, and more interesting lives, and to be more useful to themselves and others. What more fitting place wherein to inculcate these principles than the schoolroom?

These opportunities are continually presenting themselves in a variety of occurrences, from which the vigilant teacher can ever deduce moral lessons.

All know what a wonderful effect the work of our Sunday-schools has in imparting religious instruction. If an hour or less a week can produce such far-reaching results, how infinitely greater could be the result in our day schools, where we have the pupils under our control for at least thirty hours a week! Again, in the Sunday-schools they have one theme. In our day schools we can make everything tell upon the development of high moral character in our pupils.

The literature of our Readers affords excellent opportunities along this line.

I think I can safely say that there is not a lesson from which some *practical* moral lesson may not be deduced, apart from the elevating and ennobling effect all good literature has upon the one who studies it.

I think the teacher who fails to impress some special practical moral from *every* lesson in our Readers defeats the purpose the compilers had in view when selecting them, and misses the most important part of it.

Many, or most, of the selections, especially the poetical ones, teem with subject-matter by means of which the skilful teacher can generally lead the pupils into conversations and discussions upon almost any subject which is desirable, that is, on all subjects which can be made morally beneficial, and in this way be enabled to implant in the pupils' minds proper ideas of things in general, for, as a rule, "the teacher's opinion becomes the pupil's opinion."

True, there are some lessons, such as those descriptive of animals, as the ostrich, giraffe, hippopotamus, etc., of which I suppose the main object was to furnish the pupils with information regarding such animals. But even in these I think we can find something to dwell upon. The cruel modes of capture and treatment of many of these animals are enough to enlist the sympathy and se-

cure the pity of the most reckless pupil, and result in his revolting from cruelty to animals.

I remember once, while a boy was reading, in the lesson about "The Beaver," the description given of the manner in which they fell trees, he suddenly stopped and exclaimed, "Why are people allowed to kill such wise little animals?" When told that it was because boys and girls were fond of wearing caps and other articles made of their fur (he being a possessor of a beaver cap at the time), it was evident from the serious and indignant expression on his face that, although he would be loth to part with his cap, he totally disapproved of the slaughter of the beaver.

We will not now consider whether the boy was right in his conclusion, but we can readily see how that lesson, upon his reading it carefully and thoughtfully, was a means of arousing his sympathy.

I shall now refer to a few examples where the moral stands out more prominently. (Not that I at all consider them the choicest selections.)

Take the lesson, "The Little Midshipman," in the Fourth Reader. Surely the main thought to be impressed there is "God's providential care over His creatures."

Then, in the Third Reader, "The Mountain and the Squirrel" suggests that it takes all kinds of people to make a world, each as necessary in his place as the other. The Creator has wisely given us each our respective talents, qualifying us for doing something which no one else but ourselves can do. Therefore, we should not despise our fellow-men if they are not what we are, for each may be filling the place assigned him.

Again, take one of Æsop's fables in the Second Reader, "The Boys and the Frogs." Here we are taught to observe the golden rule, viz., "To do to others as we would have them do to us." Very often some thoughtless speech or action of ours may result in pain and misery to others, but, no matter how much pleasure we may derive from it, we should refrain from what injures others.

I think this fable is of very practical application in school life, where we frequently find pupils who subject others to ridicule merely for their own amusement. In the lessons, "To My Mother" and "Backward, Turn Backward, O Time, in Your Flight," we should notice the respect, love, and care which children should have for their parents. The selection from "Tom Brown's School Days" teaches fidelity to duty at all times and in all places. The lesson, "Lost, Three Little Robins," and others, teach the cruelty and sin of robbing birds' nests.

Our history also abounds with the records of persons and events, by which any pupil having a capacity for being interested, and a conscience capable of discerning between right and wrong, properly directed by the teacher, cannot fail to be greatly influenced for good.

Many of the incidents recorded, and the lives and actions of men and women, must arouse, in the heart of every child who thinks at all, a feeling of sympathy and admiration for the noble, the patriotic, and the good, and a feeling of horror and disgust for that which is evil. If this is not the result, the teacher may well think that there has been a deficiency on his part in presenting the lesson. Side by side with history is geography, which is almost as important with regard to its moral teaching. "It gives us a sense of the mystery, the vastness, and the magnificence of the world, which is very necessary for a right estimate of our own true place in it." It also shows how wonderfully the earth is designed for human habitation, and as Fitche says, "It is our granary, our vineyard, our lordly pleasure-house." In some parts nature is bountiful, in others penurious. Over some she sheds beauty. She offers material prosperity by hiding treasure in some countries and spreading it on the surface in others. In some places she invites neighboring peoples to intercourse, in others she erects impassable barriers between them. And even of those regions which she seems not to have designed for our use—the torrid desert, the lonely, rocky, mountains, and the mysterious ice-bound region of the poles—may we not truly say that they, too, are part of the bountiful provision she has made for our multiplied wants? Geography impresses and exalts our imaginations, and at the same time humbles our pride and makes us feel that there is something more in the world than is immediately and easily intelligible to us. It enables us, also, to see how curiously the mere physical conditions in which man is placed determine

his habits, the life he leads, the kind of societies he forms, and the character and history of different races.

The mathematics of our schools, which in themselves are almost indispensable in the business matters of life, have also an indirect moral effect by training and disciplining the mind to exactness, honesty, and patience, and the avoidance of hasty conclusions. What better than a problem in mathematics to develop these useful traits of character and to train the reasoning powers?

Drawing (including map-drawing) and writing may be very successfully utilized in developing the aesthetic faculties, and in elevating and refining the taste. In training pupils in this way the teacher is simply following the leading of nature. It is, I think, a fact established by observation that a person who has a well-developed love for the beautiful, say, a love for flowers, has rarely been known to become a criminal, and I have heard it said by travellers in foreign countries that, when seeking lodging among strangers, they never had any doubts as to their safety in staying at a house where they saw flowers growing in the windows. True, we frequently meet with pupils whom nature has very scantily endowed with this susceptibility. Yet I think there is no rational pupil so totally destitute of taste that his love of the beautiful cannot, through the persevering efforts of the earnest teacher, be cultivated and developed to a considerable extent.

Again, in the everyday work of the schools, incidents are constantly occurring which give opportunity for moral application, such as the telling of a falsehood, the using of profane or obscene language, playing truant, robbing birds' nests, some act of treachery or deception, or taking advantage of some weakness in a fellow-pupil, ridiculing a personal deformity or a peculiarity of dress, etc. Such cases, in which the happiness of pupils is at stake, should be dealt with cautiously, seriously, and tried by a high moral standard. A very good way of making an impression at such times is by referring to some instance in which a similar offence was committed, say, in the life of some person who has come within range of the teacher's own knowledge or that of his pupils, with deplorable results. When this is not possible, the teacher can refer to some one he or the pupils have read about, showing what disastrous results sometimes follow such beginnings.

"Vice is a monster of such frightful mien,
That, to be hated, needs but to be seen;
Yet seen too oft, familiar with his face,
We first endure, then pity, then embrace."

Another method which I have found to be both impressive and interesting to pupils is to read or relate selections or complete stories having a good moral tone, as often as is expedient, or time will permit. Friday evenings can be spent very profitably in this way. The pupils should afterwards be encouraged to talk about the subjects, and express their opinions freely, and finally asked to give synopses of it in writing. Also, when a pupil has performed some manly act, such as acknowledging a fault, or telling the truth at a disadvantage to himself, the teacher should never fail to commend him for it, and do it in such a manner as to make all *feel* the value of such an act, thus provoking emulation, if possible. By this means attention should be directed, from time to time, to the moral principles or laws, accepted by the pupils, which have been violated or illustrated. No good teacher will be satisfied with mere physical remedies for moral evils, although such remedies are, to my mind, quite indispensable in themselves. The time taken from the daily routine of study for this purpose is never lost. I do not believe in a teacher making a five- or ten-minute lecture on every trivial breach of school etiquette that is hourly arising in some such cases. I prefer the physical *appliance*, and think it invariably proves more effectual.

Having now glanced very briefly and imperfectly at the work and some of the possibilities of the teacher, we naturally ask ourselves the question, What manner of creature ought he to be who undertakes such a work? Hence the teacher's qualifications.

Some one has said that a teacher, in order to be successful, must be a *dorn* teacher, i.e., one having natural qualifications, and being called for that particular purpose. Some may be called by circumstances which seem mere accidents in life. Others are actuated by intuitions which tell of natural fitness, some (although comparatively

*Read by Miss Walker, Hintonburg, at the County of Carleton Teachers' Association, and published by request of the Association.

few) by conviction of the importance and usefulness of the work itself. But in some way or other the consciousness of his *calling* should be present in the mind of every teacher. He (or she) should ever realize that, if that is the place in life assigned to him, he will be put in a position to do a work which no one but himself can do, and failure of duty in such a position will be betraying the trust reposed in him. Without the sense or recognition of such a calling, the highest achievement will be unattainable. With it the individual will be in a position to make use of all the resources within his reach, and will have before him a true conception both of the road he has to travel and the goal towards which he moves, and will always realize the strongest of all motives or incentives, the approval and guidance of the divine Master, who was Himself the "Teacher of teachers, and who has bidden us do all things as for Him."

Actuated by such motives, the teacher must inevitably succeed, and should, therefore, proceed to his arduous toil with courage and determination; courage to encounter and overcome the innumerable trials and difficulties to which he becomes heir, and determination to succeed. In order to do so he must obtain as good an education as possible, and ever be a learner in everything pertaining to his calling. Before one can impart knowledge intelligently he himself must have appropriated and understood it in its relations to other facts and truths. Consequently the teacher must not rest satisfied till he has reached the status of a walking encyclopædia, causing his pupils and patrons to wonder

"How one small head can carry all he knows."

A teacher, in order to be successful, and to exert a proper influence, must also be a good disciplinarian. The teacher should begin by first disciplining himself—his conscience, his tongue, and his temper. He must discipline his conscience that he may be just at all times in his dealings with his pupils, irrespective of his feelings or anything else that might cause him to be otherwise. He needs habitual self-command, because if he is impulsive or variable, and does not obey his own rules, he cannot hope that his scholars will do so. While teaching is one of the professions which tries the patience most, it is one in which the maintenance of a cheerful and happy temper is most essential. Some of us are conscious of a tendency to hasty, unguarded words, to petulance, and to sudden flashes of temper, leading to injustice in word or act. Such a tendency may become a great misfortune to a teacher, and lead to consequences which he may regret all his life. Therefore he should be very guarded with respect to the language he uses in school, being careful never to give utterance to expressions that would lower him morally in the pupils' estimation, because he is critically observed, and if his doings and sayings are condemned he cannot exert the influence which forms character.

Children are all imitators, more or less, and they unconsciously imitate the teacher. "Like teacher, like pupil." Although we would not always like to admit that this is a rule without exception, still I think that experience and observation teach us that a school, taken as a whole, reflects, to a very great degree, the teacher's character.

This is not so easily observed in a school where the pupils have had the training of a number of teachers, each for but a short time. But take a school in which a teacher has taught several years in succession, and you cannot fail to notice the conformity in action, speech, and even disposition, existing between the teacher and pupils. Take, for instance, a loud-voiced, stern, boisterous teacher, and you will find the pupils very similar, and, on the other hand, if the teacher be meek, gentle, and low-voiced, you will find like results.

I heard our Inspector at one time refer to some school in Osgoode where the pupils had attained to such a "degree of composure" that they would not exert themselves so much as to go out to play. (I cannot say that that was anything like my experience in Osgoode.) Still, this being the case, I think it could be traceable to some teacher or succession of teachers of similar dispositions.

The teacher should thus endeavor to be a "model of propriety" in every respect, as it is mind and character with which he has to deal.

Some one has said that "nothing influences character like character." It is what you *really*

are that tells. In a certain copy of THE EDUCATIONAL JOURNAL the story is told of a mother who noticed a remarkable change in the deportment of her six-year-old son, who, from a rough, noisy, discourteous boy, became transformed into one of the gentlest, most courteous and considerate little fellows in the world. The child was attending a kindergarten, and the mother naturally inferred that to his teacher was due the change she was glad to notice in him, and remarked one day to him, "Your teacher teaches you to be polite, does she not?" "No, she doesn't teach us one bit about it," was the instant and very emphatic reply. The mother was puzzled, for she was at a loss to account in any other way for the radical change, and once more said to him, "Well, if your teacher does not say anything, what does she do?" "She doesn't do *anything*. She just walks around, and we *feel* polite. We feel just as polite as—anything." And the inquiring mother was quite satisfied.

Courtesy is another grace which the teacher especially needs to cultivate. Its value cannot be overestimated. It makes everything easier, quieter, and more harmonious. It diminishes friction, and gives grace and dignity to its possessor.

This, like the other graces, is taught principally by example. It appeals to the heart even more powerfully than to the head. It is the polish and lustre of otherwise dull and disagreeable existence.

The teacher, above all other creatures, is the one upon whom most depends the development of this element in the young. For hours and days his pupils are in his impressive presence, observant of every word and motion. The parents of some, perhaps, make no pretensions to be models in any way, but the child unconsciously assumes that the teacher must be a model and a safe example, from the very nature of his position. Oftentimes, too, the child has very little conception of some of the most common acts of courtesy, except what he learns from his teacher and in the schoolroom. And if all that is claimed for courtesy be true, even on utilitarian and social grounds, what a responsibility rests with the teacher in the inculcation of this most excellent grace!

Another grace, and the crowning one of all, which the teacher needs to possess, is sympathy. It need scarcely be said that with lack of sympathy with, and love for, the pupils, no teacher need expect to succeed. I think that expression of Fuller's (with which we are all more or less familiar) says all that is necessary to be said about sympathy: "The good schoolmaster minces his precepts for children to swallow, hanging clogs on the nimbleness of his own soul that his scholars may go along with him."

Who, then, would attempt to measure the result of a properly directed influence? As the ripple caused by the dropping of a pebble into the water becomes larger and larger till it reaches the shore, so our "echoes roll from soul to soul, and grow forever and forever," till they reach the shore of eternity.

Well have our everyday actions and words been compared to the sowing of seed, for who would attempt to number the grains produced by a single seed at the end of time? Our actions and words multiply even more rapidly than seed sown in the ground, as it is not on one individual only our influence is exerted, but on a number, and their influences go out, in turn, to an indefinite number of others, the result of which we, with our feeble senses, incapable of peering into the future, cannot know till the great day of reckoning, in which all things that are hidden shall be made known.

We can never be too careful
What the seed our hands shall sow,
Love from love is sure to ripen,
Hate from hate is sure to grow.
Seeds of good or ill we scatter
Heedlessly along our way,
But a glad or grievous fruitage
Waits us at the harvest day.
Whatso'er our sowing be,
Reaping, we its fruit must see.

It is the needle that helps the mariner to thread his way over the sea.—Puck.

Science.

Edited by W. H. Jenkins, B.A., Principal Owen Sound Collegiate Institute.

EDITOR'S NOTE.

There are repeated enquiries for solutions to the problems on the Senior and Junior Leaving Chemistry and Physics papers, and for type answers to the questions in Zoology and Botany. The answers to many of these questions necessitate the use of diagrams, the reproduction of which is found to be too expensive. Such questions will have to be answered by private correspondence where requested. The papers up to and including Junior Leaving will be discussed in this column. Answers to special questions on the Senior papers will be given only when asked for.

It is gratifying to note that the number of enquiries is steadily increasing, an indication that the interest in the subjects touched upon in this column is growing. The Editor hopes that this year the column will be found still more helpful and suggestive than it has been in the past. Others may not have the difficulties you experience. Let them be known and discussed.

SCIENCE NOTES.

FEEDING HABITS OF CERTAIN BIRDS.—Some interesting observations have recently been made by the chief of the Division of Ornithology of the Agricultural Department concerning the habits of birds that are supposed to be enemies of the farmer. It is said to have been proved conclusively that 95 per cent. of the food of hawks, owls, crows, and blackbirds consists of animals and insects that are far more dangerous to agriculture than are the birds themselves. The charge against crows is that they eat corn and destroy eggs, poultry, and wild birds. Examination shows that they eat noxious insects and destructive animals, and that, although 25 per cent. of their food is corn, it is mostly waste corn picked up in the fall and winter. With regard to eggs, it was found that the shells were eaten to a very limited extent for the lime. Crows also eat ants, beetles, caterpillars, bugs, flies, and grubs, which do much damage. The cuckoos also are found to be very useful birds.

THE COLOR OF FLOWERS.—Schubler has found that, out of a thousand flowers, 284 are white, 226 are yellow, 220 are red, 141 are blue, 75 are violet, 36 are green, 12 are orange, 4 are brown, and 2 are black.

White flowers become proportionately more numerous in measure as one advances toward the north.

TWENTY-FOUR CARAT GOLD is all gold; 22 carat gold has 22 parts of gold, 1 of silver, and 1 of copper; 18 carat gold has 18 parts of pure gold and 3 parts each of silver and copper in its composition; 12 carat gold is half gold, the remainder being made up of 3½ parts of silver and 8½ parts copper.

THE ELECTRICAL INDUSTRY.—The electrical industry, according to the *Electrical Review*, is about seventeen years old, and employs over \$1,000,000,000 of invested capital. The greater part of this immense investment has been made since 1888, when the electric motor was proved to be a success.

THE POWER OF SEEING.

The story is told that a young man went to Agassiz, the celebrated naturalist, to enquire how he could become a successful student in natural history. Agassiz is reported to have shut the young man up in a room with the instructions to return in half an hour and report what he saw there. At the end of the period he returned with the report that he saw nothing but a fish. He was ordered back for another hour and then asked to report. This time he reported that the fish was about a foot and a half long and had no scales. Again he was sent back for another hour, at the end of which time he reported quite fully upon the characteristics of the fish, and added that he never knew before that there was so much to learn about a common fish. Agassiz was not yet satisfied, and again sent him back. This time the young man made good use of his

eyes, and the result was a revelation to himself. He had only begun to see.

Millions of people before Newton's time had probably observed the fall of apples and leaves, but Newton was apparently the first one who really saw.

A municipality was accused of draining its surface water into a town's water supply. The defence was that the drainage was natural, and not artificial. Contending counsel went over the ground. Both saw an apparently old ditch. One of the counsel, however, saw the *freshly cut* roots projecting from a tree on the side of the ditch. The other counsel did not see this, and he could not meet the argument based on this fact when the matter was brought into the court-room.

How important a part does accurate observation play in criminal trials! And how conflicting the evidence often is! Making allowance for physical defects in vision, which, of course, must be considered in accounting for the great differences observed in what people really see, there still remains a vast array of facts which go to show how poorly developed in nine-tenths of the people is the power of seeing accurately. Ruskin somewhere, in effect, says that the greatest thing a human soul ever did was to see something and describe what it saw in plain, unambiguous language. The eye is the greatest educational factor, yet nine-tenths of our boys and girls leave school without the slightest special training in really looking at a thing to see it. Meaningless definitions of this, that, and the other thing are ground into him, often birched into him, and he comes out properly (or improperly) stuffed; with his eyes turned to the top or back of his head, probably looking for the crack. The greatest means of self-education is suffering atrophy for want of use. No wonder the question, "Are we really educating our children?" is being asked with ever-increasing frequency.

EDUCATION DEPARTMENT, ONTARIO—
ANNUAL EXAMINATIONS, 1895.

THE HIGH SCHOOL PRIMARY.

PHYSICS.

NOTE.—(a) Give diagrams whenever possible.
(b) Experiments are to be clearly and definitely described, and must be such as can be easily performed in an ordinary school.

1. (a) Give two experiments which show that air exerts pressure.
(b) Give two experiments which indicate that, in ordinary water, air is in solution.
2. (a) What prominent facts regarding the transmission of sound can be demonstrated by means of an air-pump and an alarm clock? (Describe clearly the arrangement of the apparatus, and give fully the observations you would make.)
(b) Give experiments to show, (i) on what *pitch* depends; (ii) on what *loudness* depends. (Use the rotating disk.)
(c) How would you conduct experiments on a string to determine what change of pitch accompanies change of tension, and also change of length?
3. (a) You are given a concave mirror, a candle, and a measuring rod. How would you proceed to find the *radius of curvature* of the mirror?
(b) An object is placed before a concave mirror
(i) between the principal focus and the mirror,
(ii) beyond the centre of curvature.
Draw the image in the two cases (two diagrams).
(c) Draw a diagram to show how a person, by using two mirrors, can see the back of his head.
4. (a) By a clear figure show that a single lens may be used as a microscope.
(b) How would you produce a solar spectrum on a screen, or on the wall? Also, describe and explain the effect of interposing in the course of the light a deep red glass.
5. (a) How would you produce an electro-magnet? State the two methods of increasing the strength of the electro-magnet.
(b) Describe an incandescent electric lamp, drawing a diagram of a section down through the middle of it, and stating why each part is constructed as it is.

6. (a) You have a long coil of silk-covered fine wire, and suspect that the wire is broken somewhere. How would you test to see?

(b) A telegraph line is set up to transmit messages between two rooms in the same house. Draw a diagram of the circuit, and state what battery might be used.

ANSWERS.

(Diagrams are omitted. See Editor's note.)

1. (a) Fill a test tube about 9 inches long with mercury. Place the thumb over the mouth and invert the tube, putting the end under the surface of mercury in a glass vessel. Place the vessel on the plate of an air-pump. Cover with a bell jar and exhaust the air. On removing the air, the mercury is seen to fall in the tube. On letting air into the bell jar again, the mercury rises in the tube. Therefore air must exert pressure, since it holds the mercury up.

Cork a Florence flask filled with air; place it on the plate of the air-pump. Cover with a bell jar, and exhaust the air from the latter. The cork flies out of the Florence flask, showing the air in it must have exerted pressure.

(b) Place a vessel of cold water in a warm room. At first it seems wholly clear. In a few minutes bubbles of air are seen to collect on the inner sides of the vessel.

Fill a vessel (Florence flask) quite full of water; fill also a cork and glass tube connected with water, and fit into the flask. Have the glass tube bent so that the free end may dip under the surface of water in a basin. Fill a test tube with water and invert it over the free end of the glass tube. Now heat the water in the Florence flask. Air is driven off and collected in the test tube.

2. (a) Prominent facts illustrated. (1) Sound requires a medium (air) for its propagation. (2) The more the air is exhausted from around the clock, the feebler the sound.

(b) (i) Rotate the disk, forcing steadily against the holes a stream of air from a bellows. Now rotate the disk faster. The pitch becomes higher.

(ii) Rotate the disk as in the first part of (i), but increase the intensity of the air stream. The sound becomes louder.

(c) Stretch a string (piano wire) over two Λ -shaped pieces of wood about two feet apart. Fasten one end of the wire, and to the other end hang a weight of 8 ounces. Now pluck the string and note the pitch. Add other weights and pluck the string; the pitch becomes higher. Move the two Λ -shaped pieces closer together, and again pluck; the pitch is still higher.

3. (a) Place the concave mirror vertically on the end of a long table; set the candle on the table opposite the mirror, and about four feet away. Take two chalk brushes, and create a dust in front of the mirror. The apex of the bright cone of light thus found in front of the mirror is the principal focus. Measure the distance of the apex of this cone from the centre of the mirror, and multiply by two, when you have the radius of curvature of the mirror. These experiments should be performed in a darkened room.

(b) and (c) See note at head of this page.

(Concluded in next issue.)

ANSWERS TO CORRESPONDENTS.

SUBSCRIBER—TEACHER IN PUBLIC SCHOOL.—Will you please give a list of questions suitable for the Primary Examination in Physics as laid down by the new curriculum?

ANS.—A list will be prepared for next issue. Your request came too late for this number.

YOU cannot grow too familiar with the books of all ages which have in them the truest humor, for the truest humor is the bloom of the highest life. Read George Eliot, and Thackeray, and, above all, Shakespeare.—*Phillips Brooks.*

HAVE an aristocracy of birth if you will, or of riches if you wish, but give our plain boys from the log cabins a chance to develop their minds with the best learning, and we will fear nothing from your aristocracy.—*James B. Angell.*

Examination Papers.

EDUCATION DEPARTMENT, ONTARIO—
ANNUAL EXAMINATIONS, 1895.

HIGH SCHOOL ENTRANCE.

READING.

Examiners: { JOHN SEATH, B.A.
J. E. HODGSON, M.A.

In the examination in Reading, the local examiners shall use one or more of the following passages, paying special attention to Pronunciation, Emphasis, Inflection, and Pause. They shall also satisfy themselves, by an examination on the meaning of the reading selection, that the candidate reads *intelligently* as well as intelligibly. Twenty lines, at least, should be read by each candidate.

SELECTIONS.

- Lesson XXXV.—Resignation.
" LXXXVI.—Landing of the Pilgrims.
" LXXXVIII.—The Demon of the Deep.

COMPOSITION.

Examiners: { J. E. HODGSON, M.A.
JOHN SEATH, B.A.

1. Write a composition of about *thirty* lines, taking as the subject *one* of the following marked *a, b, c, d, e*:

- (a) The Conspiracy of Pontiac.
- (b) The Red River Rebellion (1869-1870).
- (c) The Conquest of Bengal.
- (d) The facts implied in the poem entitled "The Song of the Shirt."
- (e) A description of the Niagara River.

2. (a) Write a letter to a friend in California, giving an account of any event which you have observed, or of which you have read.

(b) Write the address for your letter within a ruled space the size of an ordinary envelope.

Values—50, 50=48+2.

DICTIONATION.

Examiners: { J. J. CRAIG, B.A.
J. C. MORGAN, M.A.

NOTE.—The presiding examiner shall read each sentence three times—the first time, to enable the candidate to collect the sense; the second, slowly, to enable the candidate to write the words; and the third, for review.

1. He had stripped off his coat and waistcoat, and was busily at work in his shirt-sleeves.

2. Rain is, therefore, but a further stage in the condensation of aqueous vapor caused by the chilling of the air.

3. The natives were called Indians, an appellation which has since been extended to all the aborigines of the New World.

4. In spite of a brisk fire, they reached the paliade, and, crouching below the range of shot, hewed furiously with their hatchets to cut their way through.

5. They had no pretty flowers, and there was no one to admire their beautiful green foliage except a few croaking reptiles, and little crickets and grasshoppers.

6. This species of movement appeared suspicious to the Ethiopian, who, on his part, prepared himself, as quietly as possible, to interfere, the instant that interference seemed necessary.

WRITING.

Examiners: { D. ROBB.
J. E. HODGSON, M.A.

1. Write the following:
LL.B., MSS., N.Z., Y.P.S.C.E., S.T.D., Brig-Gen., inst., ult., My Dear Sir, July 1st, 1895,
1, 2, 3, 4, 5, 6, 7, 8, 9, 0.

2. Write the following:

Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar
When I put out to sea.

For tho' from out our bourne of Time and Place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crost the bar.

Values—13, 12.

DRAWING.

Examiners: { J. C. MORGAN, M. A.
J. E. HODGSON, M. A.

1. Draw two horizontal lines, each 4 inches long and half an inch apart, divide (by perpendicular lines) the space between them into squares, draw all the diagonals of the squares, above each square draw an isosceles triangle having the upper side of the square as its base, and each of its sides equal to half its base, and below the squares draw semicircles having as diameters two of the lower sides of the squares.

2. Draw from memory a vase 4 inches high, containing a spray of any flower with which you are acquainted.

3. Make a drawing of an ordinary square four-legged table with a small coal oil lamp standing on it, the top of the table being slightly below the eye.

Values—9, 8, 8.

EAST SIMCOE PROMOTION EXAMINATION—DECEMBER 6TH AND 7TH, 1894.

COMPOSITION—SECOND PART.

Juniors, any six questions; seniors, any seven questions.

1. Make two sentences out of these words: Goes, my, town, eggs, sells, Frank, to, he.

2. Write the names of six things you can buy in a store, and before each a word that tells what kind the thing is.

3. Write the names of six things in this room, and before the name of the thing the owner's name.

4. Place words after the following to tell what they do: Horses —. Birds —. Girls —. Flowers —. Hens —. Water —.

5. Write a letter telling what game you like best to play.

6. Finish these counting exercises:

- (a) One leaf, two —, three —.
- (b) One mouse, two —, three —.
- (c) One woman, two —, three —.
- (d) One sheep, two —, three —.
- (e) One goose, two —, three —.
- (f) One cow, two —, three —.

7. Write questions using the words: I, eye, their, there, not, knot, due, dew, too, two, dear, deer.

8. In these sentences change *boy, sister, cat, man, book, foot*, so as to make them mean more than one, making all other needed changes:

- The boy was at home with his book.
- The man met his sister.
- Her cat has a sore foot.

Values—12 marks each.

WEST MIDDLESEX PROMOTION EXAMINATION—DECEMBER 20TH AND 21ST, 1894.

FROM THIRD TO FOURTH CLASS.

ARITHMETIC.

1. Find the cost of a pile of wood 32 feet long, 4 feet wide, and 7 feet high, at \$3.25 per cord.

2. If a ton of coal occupies 40 cubic feet, what will it cost to fill a bin 12 feet long, 6 feet wide, and 5 feet deep, with coal at \$6.50 a ton?

3. John Jones bought of J. Campbell: Nov. 20th, 29 yds. calico at 15c. a yd., 17 yds. linen at 47c. a yd. Nov. 22nd, 18 yds. flannel at 36c. a yd., 33 yds. braid at 3c. a yd. Dec. 1st, 18 lbs. sugar at 9c. a lb., 3 lbs. tea at 45c. a lb. On Dec. 8th, \$5 was paid on the above account, and the balance was paid on Dec. 20th. Make out the bill and receipt it.

4. Find the smallest number of turkeys at \$1.50 each that can be exchanged without loss or gain for an even number of chickens at 55c. a pair. (Text-Book.)

5. Three men, A., B., and C., have together \$80; A. has \$6 more than B., but \$8 less than C. What has each?

6. How many miles will a boy walk to plow 3 acres, turning a furrow of 9 inches?

7. Divide 117 mi., 16 rds., 2 yds. 1 ft. 6 in., by 13 mi., 12 rds., 5 yds. 6 in.

8. A spring of water, which yields 75 gallons an hour, supplies 600 families; how much water may each family use daily?

9. In 400 civil years there are 303 years of 365 days each, and 97 years of 366 days each. Find the average length to the nearest second of the 400 civil years. (Text-Book.)

10. A person buys 4 lbs. of tea at 74 cents per lb., and mixes it with 5 lbs. at 56 cents per lb. What will 2 lbs. of his mixture cost him?

Values—15, 15, 20, 12, 15, 15, 13, 12, 15, 13. 5 marks for neatness.

School-Room Methods

BUSY-WORK.

Few habits acquired in school are more important than a habit of industry. The aim of the teacher should be to keep all pupils employed every moment of the day, except during times of recreation. But it is not enough that they be kept employed without reference to *what* they do, for their natural activity may lead them to do that. There should be in their employment an element of training, or something which will help to develop their faculties. How to provide such employment for pupils of all ages is, indeed, a difficult matter. It cannot be done if the natural capabilities of the pupil are not considered—that is to say, if the work given is not adapted to the pupils' requirements and needs.

To keep the older pupils busy will not be very difficult. If their regular studies and teaching are what they should be, they will be pleasantly as well as profitably occupied in the preparation of lessons.

Younger pupils will need special attention and direction. It will not be enough to place in the hands of the children toys and pictures, and bid them amuse themselves as best they can. They must be directed how to use the things which are given them before they work with them independently and alone. Do not keep the children occupied too long upon any given work, but change the occupation as often as once in every fifteen minutes. The following kinds of busy-work may be suggestive:

Every child should be provided with a good slate and a sharpened pencil, with which he will be occupied half of the time he is in school. [Better a scribbling book and a lead pencil.—ED. JOURNAL.] At one time he may be copying words and sentences which are upon the cards or blackboard. At another time he may be doing number-work or drawing, alternating the slate-work with other exercises. Shoe-pegs and splints will afford occupation for a few minutes at a time in making designs in imitation of what is placed before him. With the pegs, also, the child may place in rows the number-work; as (letting each mark represent a peg), III+III=IIIIII. After covering the top of his desk with such work, he may represent upon the slate what he has done; as, 3+2=5. Children can be profitably employed with colored pegs, sticks, splints, and papers, in making combinations taught in previous color and form lessons. Outlines of common objects, such as a ladder, fork, rake, or chair, may be drawn upon the blackboard for the children to imitate with the pegs or splints.

The kindergarten games are full of suggestion for primary teachers. Paper-folding, weaving, and stick-laying are especially useful for busy-work. It is not necessary to buy many materials, or to follow closely the order given in the kindergarten. Wooden tooth-picks, splints, and different kinds of paper will constitute much of the needed material for these games. Pictures may be pasted upon cardboard, which can be cut into pieces for

the younger children to put together. The same may also be done with designs upon cardboard.

Forms of animals and other objects can be made of cardboard or pasteboard and given to the children for tracing. After the form is traced, the children should be encouraged to draw lines representing the various parts.

Second and third year pupils can be kept busy in language-work, copying from the reader, making sentences with given words, or making statements or stories from pictures placed before them.

Letters upon paper or cardboard for making words, and words for making sentences, will be found useful in keeping children busy. The letters and words can be bought in boxes, or they can be cut out and collected by the pupils and teacher. The older children of the primary and ungraded schools may be called upon at times to collect and distribute the cards, splints, etc., and they may sometimes assist the little ones in their slate-work.

It is not expected that the very youngest children will be in school during the whole of two sessions. They should be dismissed when the session is half through, or, if the distance to their homes is too great for them to go alone, they should be allowed to go to the playground or anteroom to play.—*Prince's Courses and Methods.*

GEOGRAPHY.

SUGGESTED OUTLINE FOR THE STUDY OF POLITICAL DIVISIONS.

Points of special interest.

- Historical facts.
- Striking characteristics.

Position.

- On the continent.
- If a large country, extremes of latitude and longitude.

Surface.

- Where mountainous, what system.
- Where plateaus, where plains.
- Important peaks, if any.

Drainage.

- Water partings, slopes, etc.
- River basins.
- Lakes and inland waters.
- Rivers.

Outline.

- Natural boundaries (coast lines and mountain ranges).
- Touched by what other countries.
- Coast lands, peninsulas, islands, etc.

Climate.

- Position in zone.
- Elevation, affecting temperature.
- Winds, affecting temperature.
- Amount of rainfall.
- Cause of moisture, or cause of lack of moisture.
- Extremes of temperature; average temperature.

Vegetation.

- Character of soil, with causes of conditions.
- Principal products, leading to what industries; to what trade with outside countries.

Minerals.

- Location of mines.
- Value of mines; how well worked, etc.
- Principal products.
- Minerals exported.

People.

- Race.
- Character, as to religion, education, industry, etc.
- How affected by environments of the country.
- Kind of government.

Cities.

- Location; how affected by local surroundings.
- Importance.
- General points of interest.

—*Northwest Journal of Education.*

A TEACHER in Hartford, U. S., obtains some surprising results. The children are required to make sentences containing certain words selected from the reading lesson. One of these words was "pacify," and a promising pupil produced this sentence: "The author pacifies the poem." "Why do you say 'pacifies,' my dear?" asked the teacher. "Because, ma'am, the dictionary says that pacify means 'compose.'"

Primary Department.

ADDITION.

RHODA LEE.

Addition is undoubtedly the most useful of all mathematical operations. One is called upon to add about ten times as often as to make any other calculation. It is, therefore, most desirable that our pupils should add readily and accurately, and this they cannot do unless they be trained in proper methods.

How ridiculous it is to see some of the clerks in our stores making out a bill, adding by "ones" a long list of figures that an expert would calculate with a glance of the eye. I need not describe the process, every one has seen it; it is known as the "ticking" method in the schools. However, the fact that there are poor adders, and many who do not really add at all, does not shake my belief that if every teacher did her share of the work the children leaving our Public Schools would be experts.

It is not a subject that can be left to the junior classes. In the primary rooms the work is well begun, but it must be carried on through every class in the school if the work of the lower classes is not to be entirely wasted.

To secure accuracy and rapidity in addition, it is necessary that the results of the combination of numbers should come automatically to the mind; the numbers 9 and 4, the instant they are seen, giving 13; 29 and 8, 37, etc.

In teaching addition there is one most important rule to be observed, viz.: Never give a child an example containing a combination with which he is not familiar. If he knows only

$$\begin{array}{r} 5 \\ 5 \end{array} \quad \begin{array}{r} 4 \\ 6 \end{array} \quad \text{and} \quad \begin{array}{r} 3 \\ 7 \end{array}$$

(we suppose from the study of numeration that he knows what 10, 20, and 30 with any other number give as result), dictate examples containing only these combinations. To do this, the teacher must prepare the examples beforehand, and in making them begin at the bottom of the line. For instance:

$$\begin{array}{r} 2 \\ 3 \\ 7 \\ 4 \\ 6 \\ 5 \\ 5 \\ \hline 32 \end{array} \quad \begin{array}{r} \\ 85 \\ 45 \\ 63 \\ 57 \\ 54 \\ 76 \\ \hline 380 \end{array} \quad \begin{array}{r} 36 \\ 77 \\ 43 \\ 65 \\ 55 \\ 56 \\ 74 \\ \hline 406 \end{array}$$

In teaching the combination $\frac{4}{8}$, we do not stop with the single digits, but go on as far as 50 at least—

$$\begin{array}{r} 4 \\ 6 \end{array} \quad \begin{array}{r} 4 \\ 16 \end{array} \quad \begin{array}{r} 4 \\ 26 \end{array} \quad \begin{array}{r} 4 \\ 36 \end{array} \quad \begin{array}{r} 4 \\ 46 \end{array}$$

$$\begin{array}{r} 10 \\ 20 \\ 30 \\ 40 \\ 50 \end{array}$$

Reverse the numbers so as to read

$$\begin{array}{r} 6 \\ 4 \\ 10 \end{array} \quad \begin{array}{r} 6 \\ 14 \\ 20, \text{ etc.} \end{array}$$

Tables should always be read *up*, as that is the process when adding.

I have tried teaching the combination in other orders, but never found any as successful as the following:

1. Numbers which added together give 10:

$$\begin{array}{r} 5 \\ 5 \end{array} \quad \begin{array}{r} 4 \\ 6 \end{array} \quad \begin{array}{r} 3 \\ 7 \end{array} \quad \begin{array}{r} 2 \\ 8 \end{array}$$

2. Doubles (beginning with the highest to prevent counting):

$$\begin{array}{r} 9 \\ 9 \end{array} \quad \begin{array}{r} 8 \\ 8 \end{array} \quad \begin{array}{r} 7 \\ 7 \end{array} \quad \begin{array}{r} 6 \\ 6 \end{array} \quad \begin{array}{r} 4 \\ 4 \end{array} \quad \begin{array}{r} 3 \\ 3 \end{array} \quad \begin{array}{r} 2 \\ 2 \end{array}$$

3. Combinations of 2:

$$\begin{array}{r} 2 \\ 3 \end{array} \quad \begin{array}{r} 2 \\ 4 \end{array} \quad \begin{array}{r} 2 \\ 5 \end{array} \quad \begin{array}{r} 2 \\ 6 \end{array} \quad \begin{array}{r} 2 \\ 7 \end{array} \quad \begin{array}{r} 2 \\ 9 \end{array}$$

4. Threes:

$$\begin{array}{r} 3 \\ 4 \end{array} \quad \begin{array}{r} 3 \\ 5 \end{array} \quad \begin{array}{r} 3 \\ 6 \end{array} \quad \begin{array}{r} 3 \\ 8 \end{array} \quad \begin{array}{r} 3 \\ 9 \end{array}$$

Following this come the 4's, 5's, 6's, 7's, 8's, and 9's, making thirty-six in all.

At first progress will be slow, two combinations being as many as can be grasped in a week, but afterwards a new one may be taught almost every day. Let me remind my readers that thoroughness in every subject is the best policy, but this is especially so in the teaching of addition. Go slowly at first, and you will go all the faster in the end.

Adding by two's, three's, four's, etc., when the children are far enough advanced, is a great help towards getting rapidity in work.

1st. Adding in a horizontal line.

$$\begin{array}{r} 1 \\ 2 \\ 2 \\ 3 \\ 2 \\ 5 \end{array} \quad \begin{array}{r} 3 \\ 4 \\ 5 \\ 6 \\ 6 \\ 9 \end{array} \quad \begin{array}{r} 5 \\ 8 \\ 8 \\ 9 \\ 10 \\ 13 \end{array} \quad \begin{array}{r} 7 \\ 8 \\ 11 \\ 12 \\ 14 \\ 17 \end{array} \quad \begin{array}{r} 9 \\ 10 \\ 14 \\ 15 \\ 18 \\ 21 \end{array} \quad \begin{array}{r} 11 \\ 12 \\ 17 \\ 18 \\ 22 \\ 25 \end{array} \quad \begin{array}{r} 13, \text{ etc.} \\ 14 \\ 20 \\ 21 \\ 26 \\ 29 \end{array}$$

2nd.

$$\begin{array}{r} 4 \\ 6 \\ 9 \\ 1 \\ 3 \end{array} \quad \begin{array}{r} 6 \\ 8 \\ 0 \\ 1 \\ 3 \end{array} \quad \begin{array}{r} 1 \\ 3 \\ 0 \\ 1 \\ 1 \end{array} \quad \begin{array}{r} 7 \\ 9 \\ 6 \\ 8 \\ 0 \end{array} \quad \begin{array}{r} 5, \text{ etc.} \\ 9 \\ 1 \\ 3 \\ 5, \text{ etc.} \end{array}$$

PERSEVERE.

The fisher who draws in his net too soon
Won't have any fish to sell;
The child who shuts up his book too soon
Won't learn any lessons well.

If you would have your learning stay
Be patient—don't learn too fast;
The man who travels a mile each day
May get around the world at last.

A STORY FOR REPRODUCTION.

THE SUNSHINE FACTORY.

ADAPTED BY R.L.

Jennie was a sad little girl when Saturday morning turned out to be very wet. She had expected to go to the park and play on the grass, hear the band, and have lunch with mother and little brother under the trees; but now it had all to be given up, as the rain was coming down very heavily, with no sign of breaking clouds or sunshine.

Just after dinner Uncle Jack came in, and, seeing tears, asked what was wrong. "Well," he said, when he had heard Jennie's story, "there is no sunshine outdoors, but let us make some in here. Suppose we try to make Willie happy, and see if we cannot enjoy the afternoon in spite of the weather."

Jennie was naturally a bright little girl, and very soon she had Willie riding on a chair, having a gay time, laughing and playing, as happy as could be. When they were tired of play, Uncle Jack cut paper dolls and all sorts of pretty things out of an old newspaper. They really had such a good time that when Jennie went to bed she thought it had been a lovely Saturday.

That night she had a dream. She dreamed that Uncle Jack and she had started a sunshine factory for making little girls and boys happy, and they had a big sign hung out over the door that pictured the rising sun sending its rays abroad.

LITTLE FOXES.

Among my tender vines I spy
A little fox named "By and By";
Then set upon him quick, I say,
The swift young hunter, "Right Away."

Around each tender vine I plant
I find a little fox, "I Can't!"
Then fast as ever hunter ran
Chase him with bold and brave, "I Can."

"No Use in Trying" lags and whines,
This fox among my tender vines;
Then drive him low and drive him high
With this good hunter, named "I'll Try."

Among the vines in my small lot
Creeps in the young fox, "I Forgot";
Then hunt him out and to his den
With "I Will Not Forget Again."

A little fox is hidden there
Among my vines named "I Don't Care";
Then let "I'm Sorry," hunter true,
Chase him afar from vines and you.

—Selected.

BIRD STUDY.

Name the birds common in your locality. Can you tell them at sight? Can you tell their young when just old enough to fly?

Describe them as to color and size; manner of flight. Do they *walk* when on the ground? Do they alight often on the ground, or remain mostly flying and on perches?

What birds can you tell by hearing their notes without seeing the bird? Can you imitate their notes? What is the spring note of the bluebird? Its autumn note? Do you know the robin's note of alarm and its song? Do the young give forth the same note as the old birds? What birds seldom give forth any note?

Tell what the birds eat. Is it the same at all seasons?

Can you tell what kind of nest the birds of your acquaintance make? Where, when, and of what material do they build? What is the usual number and color of the eggs? What bird builds no nest?

What birds remain with us through the winter? What ones come first in spring? Which ones among the last? Which gather in flocks before leaving in the autumn?

Tell what you know from observation of the habits of some birds. Tell what you have seen of some particular bird. Do all birds try bravely to protect their nests and their young? Which do, and which do not?—*Selected.*

DAISIES.

At evening, when I go to bed,
I see the stars shine overhead:
They are the little daisies white
That dot the meadow of the night.

And often while I'm dreaming so
Across the sky the moon will go;
It is a lady, sweet and fair,
Who comes to gather daisies there.

For, when at morning I arise
There's not a star left in the skies;
She's picked them all, and dropped them down
Into the meadows of the town.

—Frank Dempster Sherman.

Teachers' Miscellany.

MISS STACY'S EXPERIMENT.

BY ADELAIDE L. ROUSE.

Miss Stacy was crying. There was no denying the fact, for her eyes, yes, her nose, was red. She looked very unromantic, quite unlike the novel heroines who are supposed to weep and look more beautiful. All day long she had been on the verge of that feminine panacea, "a good crying spell."

What was the matter? Nothing in particular. For some time things had been going "contrary" in the little country school, and on this particular afternoon—well, no wonder Miss Stacy cried. Each child seemed possessed with its own spirit of mischief, and determined not to be outdone in that line by the others. Even Lillie Dean, Miss Stacy's star pupil, had appeared decidedly human for once.

So, after the last pupil had disappeared, Miss Stacy locked the door and let the tears fall on the pile of compositions which were to be corrected.

It was her first school; she had come from the normal with such hope and such ideals! But ideal children did not whistle "right out in meetin'," as Jimmie Barnes had done that very afternoon, neither did they bring horrid crawling things in their pockets. Miss Stacy was no bugologist; and she hated, no, feared, anything that *crawled*.

It was rather startling to be hearing the "B" geography class and turn to see a real, live tree-toad hopping on Phil Johnson's desk. Or to look from her work on the blackboard to see Johnnie Evans and Teddy Morton "swapping" a snapping turtle for a jack-knife.

"Put that thing out," Miss Stacy had called in her most authoritative tone, while cold chills crept up and down her spine.

"Please, teacher, he'll crawl away," said Teddy.

"Can't I keep him in this box?"

"Whatever do you want the horrid thing for?" asked Miss Stacy.

"Why, he's a splendid turtle. I waded in the pond this morning to get him. Cracky! wasn't the water cold!" (This by way of arousing Miss Stacy's sympathy.)

Of course, while this parley was going on, all the pupils were diverted from their books. The turtle, meantime, embraced the opportunity to crawl down the aisle, to the great edification of the children.

The turtle was finally put out to pasture in the wash-basin, with a string attached to keep him from straying, and quiet was once more restored.

The first arithmetic class was deep in compound proportion when the proprietor of the turtle called out, "Miss Stacy, now, Willie Morris, he's got a garter snake and a meadow mole in his desk."

Willie was completely absorbed in his geography, and Miss Stacy spoke to him a second time before he looked up.

"Willie, if you have any of those horrid creatures, put them out of doors directly."

Willie reluctantly freed his snakeship, but he kept his dear little meadow mole in his pocket. He did not take it out again till sure that Miss Stacy had forgotten all about the matter.

No, clearly, they were not model children. Miss Stacy had her cry out, then she felt better. She dried her eyes and began gathering up her possessions. She must take the compositions home and correct them there.

She lived with an elderly aunt, who asked at the tea table about her red eyes.

"I don't think that is anything so terrible," said Aunt Martha, when Miss Stacy had described the day.

"How could it be much worse! The children are all I can manage at any time, and now they will bring those creepy creatures to school, and I can't make them keep their minds on their lessons!"

Aunt Martha thought a moment. "Why don't you make use of their love for the creepy creatures? They are giving science lessons in the schools. I read some of your *School Journals* last night, and found them good reading, if I ain't a teacher."

"How can I? I never thought of doing it here. Of course, we had science lessons at the Normal, but Miss Jessup used a cat or dog for object lessons."

"I don't see why you can't use a meadow mole or a snapping-turtle if the boys like them better," said Aunt Martha, beginning to gather up the dishes.

"I wonder if I could," said Miss Stacy, and she sat down to think, forgetting the compositions. "I believe I will try it," she said, as she went to her room that night. "I've got to do something, for they are more interested in their bugs and things than in what I am teaching them. Oh, dear!"

Next morning, she found Jack Manning examining some choice specimen, and, instead of scolding him, she said: "I think it will be pleasant if we have a little talk now and then about animals and insects. We will take a little time to-morrow afternoon when we have finished our lessons. Each one of you come prepared to tell me a fact about an insect or an animal, whether it is something you have seen for yourself, or have read or heard of. If you can, bring a specimen with you. Of course, we don't want any snakes, but you may bring bugs, worms, ants, or even turtles, if you like. We will try to have a pleasant time."

Miss Stacy sat down after her little speech, wondering how she would conduct a science lesson on turtles, for instance. She ransacked her notebooks that evening; there were lessons on dogs and cats galore, but even Miss Jessup had never "tackled" a snapping-turtle.

Miss Stacy went to school Friday afternoon, wishing she had not followed Aunt Martha's advice. What *should* she say to the children? And who could tell what might not be in those desks!

Somehow time flew that afternoon, and it was soon time for the so-called science lesson. Miss Stacy put on a bold front, and stood up. No lawyer, making his maiden speech in court, could be more embarrassed than she was. What *should* she say? It had not occurred to her that the children would be glad to do the talking.

One of Miss Jessup's questions, "How many toes has a cat?" lingered in the corner of her brain. No; that wouldn't do. They were waiting, she must begin.

"Well, boys, I hope you have brought something very interesting," she said, wondering if she would scream if some one produced a snake. "I see that Phil has something. What have you, Phil?"

"It's a squirrel, I've got him here in a box. He's as tame as—anything." And, sure enough, there was a fine specimen. Phil told how he caught him in the stone wall by the pasture bars, and how he could stow "pretty near a handful of nuts in his cheeks." After a few remarks on his habits and his "cute" ways, Phil let him fill the pouches in his cheeks with nuts, and then put his precious squirrel back in his cage.

Johnnie Evans had quite a wonderful collection of birds' eggs. He knew each egg, and named them so readily that Miss Stacy was surprised. She had thought Johnnie the dullest boy in school; for, although twelve years old, he could not master

long division. But now he was discoursing of birds and bird ways like an amateur ornithologist.

One of the girls had brought a gold-fish in a glass jar; another had a very talkative parrot.

Long before they had exhausted their material the clock struck four. "We will have another talk like this next Friday," said Miss Stacy, as she rang the bell.

That was the beginning of many pleasant lessons about birds and bees, ants, butterflies, and even spiders. Not only animals and insects were studied; there were lessons in botany, geology, and mineralogy, only they were not called by such ambitious names. There were excursions on Saturday afternoons for wild flowers, ferns, and stones. Of course, they began a collection of plants, and a school herbarium was started. Some of the "big boys" made a cabinet for the walls of the school-room, and a geological collection was begun.

In the fall, there were delightful excursions for autumn leaves and berries to dress the schoolroom. Ferns were carefully transplanted and placed in the windows. If any one found a butterfly chrysalis, it was hung up in the schoolroom; everyone was on the alert, and nothing of interest escaped their keen eyes.

Some of the more conservative trustees thought that Miss Stacy spent too much time on new-fangled notions, instead of sticking to parsing and arithmetic. But the majority upheld her; the children were learning to use their eyes, and that was what eyes were for. And, as they said, "the proof of the pudding is in the eating," and the school was never so prosperous, nor the pupils so well-behaved.—*N. Y. School Journal.*

THE STORY OF KING MIDAS AND THE GOLDEN TOUCH—A NEW VERSION.

BY B. F. BOLTON, SKEAD'S MILLS, ONT.

My dear little folk, you have all heard the tale
Of how Midas, the king, day by day did assail
The powers that be, till they turned weak and
pale,

To lend him their aid in all barter and sale,
And help him make buyers and sellers bewail
Their sad fate, in attempting with Midas to
"deal";

How his baker was ordered to bring his bread
stale;

How his brewer could sell him but cheapest of ale;
How he franked all his letters, defrauding the mail;
How the shingles flew off from his barn every
gale,

Because he begrudged e'en the price of a nail;
How his cattle and sheep wandered off in the
vale,

For his fence here and there stood in need of a
rail;

And how, up to each "dodge" that in finances
lurks,

He became his own Minister of Public Works.

And all for the pleasure

Of having a treasure,

To crow o'er his neighbors and take up his leisure,
The which, hid away in a dungeon unsightly,
He visited daily, he visited nightly.

One day, seated down in his dungeon so drear,
Counting over the fruitage of many a year,
Now sorry, now happy, as thoughts weigh or
cheer,

Now refreshing a smile, or wiping a tear

On the sleeve of his coat, somewhat the worse for
wear,

He happened to look toward the window, and saw
A being a Scotsman would designate "braw";

And huddling into his safe all his treasure,
Demanded, in fear, of the stranger his pleasure.

Now, in those days, you know, there were he-gods
and she-gods,

Good-gods and bad-gods, big-gods and wee-gods,
And Midas suspected that this shining fellow,
With glistening eye and a smile wondrous mellow,
Was some one had issued from heaven's wide
portal,

To peep at the wisdom or folly of mortal;

And, judging quite shrewdly his use of the
stranger,

Would bring him great good, or ward off great
danger,

Resolved, on the moment, to spare him no smiles,
And immediately put into practice his wiles.

He spoke of his treasure as something quite poor,
Bewailed that his chances seemed fewer and fewer,
Spoke of having prolonged the few years of his life

(Forgetting to mention his poor sickly wife),
And strove with his might to make such an impression
As would tend to procure him an unsurpassed blessing'.

The stranger, whose name I have heard say was Bacchus,
The god of the wine-cup, whose worship does crack us,

And rack us,
And whack us,
And into the poorhouse does oftentimes pack us,
Perceiving the drift of the crafty old fellow,
Again introducing the smile known as mellow,
Determined instanter,
Without further banter,
To let Midas have on the highway a canter
With Fortune, bedecked as the fairest enchanter.

So the long and the short is,
And funny the sort is,
He Midas presented,
Leaving him quite demented,
With power to turn every object to gold,
And make pretty new things out of ugly and old.
"When the morrow does break,
As soon as you wake,"
Said the stranger, "yourself you may straightway betake

To transmuting whatever it pleases your mind
From material base to gold double-refined."

Of course, all night long King Midas lay wishing
That morning would come, or the night-god go fishing,
And never an eye thought of closing a minute,
So impatient he was to find out what was in it.

The moment the sun peeped above the horizon,
He touched every object he could set his eyes on,
And shouted with joy to see the mutations
His magic touch caused 'mongst his old jugs and basins,

His socks, pants, and braces,
His boots and bootlaces,
His shirt and the brass collar-button he wore,
The old faded cap,
Ne'er before worth a rap,
His vest with frayed edges and dressing-gown poor,
His tooth-brush, his hair-brush, his o'd broken comb,

And e'en the wee insects that made it a home,
His penknife (a good one made by Joseph Rodger—

A monstrous extravagance for the old codger),
The cracked old delf basin and jug without handle

(For so up to then lived the greedy old vandal),
The soap he had bought at four bars for a quarter
(Dingman's Electric), and e'en the soft water,
All turned to the brightest and shiniest gold
'Neath the touch of his fingers skinny and old.

He laughed and he cried,
As the treasure he eyed;
He danced,
And he pranced,
As on each thing he chanced;

Gave a yell;
Rang the bell,
Started downstairs pell-mell;
Tripped in his haste and half-way down fell;
Rushed into the kitchen,
His fingers all itchin'
To do some plate-making upon a grand scale;
Kissed the red-headed cook,
Disregarding her look,
And left her a statue, turned yellow from pale.

The pots and the pans,
The kettles and cans,
Plates, knives, cups and saucers, the teapot and tray,

Salt-cellar and pepper-tin,
E'en the old rolling-pin,
Everything there, in fact,
Whether 'twas whole or cracked,
Turned yellow and bright from dingy and gray.

Then out to the garden, to make some gold roses
(He never once thought of what use a nose is),
He went, and from one end down unto the other
Proceeded the life out of each rose to smother.
And all the sweet flowers that grew in the garden
Beneath his sad touch directly did harden,
Till not one as flower was worth a "brass far-
din'."

And before he got through his matutinal labors,
'Tis said by his friends and relations and neighbors

That never a thing that he could get hold of,
But the grasping old rascal instanter made gold of.

But by this time the king began somewhat to tire,
And to think that he might creature comforts require;

So into the breakfast-room made he his way
(Not forgetting to make even this journey pay
By touching some few things that in his first flight
Had seemed 'neath his notice or escaped his sight),

And sat down to breakfast off coffee, eggs, toast,
And a small bit of beef off yesterday's roast.

Now, Midas' family, know you, was small,
One dear little princess, Maria, was all
That had ever addressed rich old Midas as "pa,"
Or had ever called Midas' missus "dear ma."
A dear little thing was Maria, be sure,
Sweet, kindly, religious, and good to the poor.
Just the kind of dear maiden that takes to a coffin,
Too young for a husband—we've all seen it often.
And now, with a towel tied under her chin,
She had just begun breakfast as Midas came in.
With a gladness unwonted, "Good m'orning," he said;
She nodded, her mouth being then full of bread.

Rich Midas sat down with a sigh of content
That gave all his happiness full and free vent,
And poured out in his saucer (note that, if you please)

A good dram of Mocha, to sip at his ease;
Then, reaching an egg, was astounded to see—
What to cause of hen's cackling ne'er happened before—

The shell turned to gold, and, in spite of his glee,
The king wished the egg had been laid with a door.

But useless the tale—beef, toast, coffee, all,
As soon as he touched them were turned into gold,
Changing his gladness to wormwood and gall;
For really, by this time his stomach was cold.

Dear little Maria, her milk and her bread
By this time had finished, and, turning her head,
Beheld her dear pa *in extremis* with hunger,
And, impulsive as many a one who is younger,
Tried to feed him a spoonful of her sweetened pap;
But it dropped like gold hailstones in Midas' lap.

"Oh, pa!" "Dear Maria!" "Pa, what is the matter?"
"Tis nothing, my dear; pray do not so chatter."
"But pa, can't you eat? Are you sick? Take a pill."

"My child, your poor pa must, I fear, make his will."

Now, here was a pickle, I'm sure you'll concede,
And a riddle for Midas not easy to read.

Gold was his plate, his victuals gold,
And gold was all around him;
But nought was there but brought despair;
Its richness did confound him.

Not e'en the driest crust of bread,
Or poorest of potatoes
Could this poor king to stomach bring,
To ward the stroke that fate owes.

No cooling draught, no posset warm,
His throat again might pleasure;
For gold, bright gold, his life he'd sold.
Oh, dread curse-laden treasure!!

In his despair,
Up from his chair,
He rose with a most frantic air;
Plucked from his head some pounds of hair;
Then stooped and kissed his daughter fair,

When—fearful though the tale to tell—
The kiss rang out like any bell.
For at his touch the awful spell
Upon his dear Maria fell,
And, hardening every fair, soft feature,
A statue stood the darling creature.

At this aghast King Midas stood,
While cold did run his very blood.
No words can tell the anguish felt
At this hard blow fate to him dealt.
His darling child, his pride and heiress,
No more might know his love and caress;
No more could brighter make his day,
Or charm him with her pretty way.
His brother's son would get his riches—
A snub-nosed lad, now in knee-breeches.
No more might he look forward now
To leave his crown to that fair brow.
No more might hope grandson to teach
The prize of fortune how to reach.
No more, no more, Maria know.
Faded all dreams as fades the snow.

He raised his eye, and, in the door,
He saw, as he had seen before,
The stranger stand. He bowed his head.
"Well, Midas," now the stranger said,
"How dost thou now? Art satisfied?
In aught has been thy wish denied?"
Midas could only bow his head
To all the stranger mocking said.

But let's leave the sadness
For something of gladness.
King Midas got over his miserly madness
By taking a swim, at the stranger's suggestion,
Not stopping to wonder, to think, or to question.
Plump into the river
He went, with a shiver,
And rose to the surface almost out of wind;
But feeling a lightness,
A sort of soul-brightness,
That told him his devil had been left behind.
And taking a bucket, as he had been told,
He filled it with water, and turned back from gold
Everything that at daybreak he had so despised,
In the garb nature for it had kindly devised.

The roses again were natural roses;
The other gold blossoms again became posies;
The cook and her tools, from castor to kettle,
Were changed back to their honester, dingier metal.

And dear little Maria, soon as he came nigh her,
He drenched, and proceeded with kisses to dry her.

And she, coming to,
Asked him what he would do,
And proved she was mortal again thro' and thro'
By raising a very decided boo-hoo,
Because he had spoiled her red ribbons and blue.

This proved a good lesson,
Indeed, quite a blessing,
And left on the king's mind a lasting impression.
So eschew-
ing the screw,
To all whom he knew,
It had once been his pleasure in bargains to do,
He returned cent. per cent.;
Cut down tenants' rent,
Became quite respected wherever he went.
Came to church every Sunday,
And heard, every Monday,
Maria her Sunday-school lesson say o'er.
Built two or three schools,
An asylum for fools,
And never on any pretence again swore.
And so when he died
The people all cried,
And forth to the funeral such numbers did ride,
His ghost must have swelled with a post-mortem pride,
Would require a path to the next world quite wide.

EDISON'S LATEST.—Edison is now on a plan to grease the sides of ships so that they will slip through the water more readily. He says the friction of salt water and its constituents are much more than is generally believed, and if he can only do what he is trying to do the *Campania* can make the voyage between New York and Liverpool in four days.

Question Drawer.

All questions for this department, like all communications for any other department of THE JOURNAL, must be authenticated with the name and address of the writer, and must be written on one side of the paper only. Questions should also be classified according to the subject, i.e., questions for the English, the Mathematical, the Scientific, and the general information departments should be written on separate slips, so that each set may be forwarded to the Editor of the particular department. If you wish prompt answers to questions, please observe these rules.

B.G.R.—(a) The list of Entrance literature selections for 1896 will be found in THE JOURNAL of July 16th last. If you have not a copy of that number, write to the Education Department, Normal School buildings, Toronto, for circular No. 10, which gives the requirements for High School Entrance and Public School Leaving examinations. (b) Authorized copybook No. 6. Drawing-book No. 5.

W.J. McL.—Wishes to be told, or put in a way of finding out, "the actual or relative height above the sea of the County of Renfrew, Ont." Perhaps some teacher resident in that county, or elsewhere, can refer us and him to some publication, if any such exist, giving the desired information.

W.B.S.—You had better write to the advertiser direct for fuller information and testimonials. We have not examined the system with sufficient care to warrant us in giving an opinion. Some of its features certainly commend themselves.

J.P.—Can you inform me where I can obtain a copy of a pamphlet by—Smith, a Professor of Astronomy in Edinburgh, I think, dealing with the great pyramid, in which he argues that all our weights, measures, etc., are to be found?

Perhaps some of our readers can give this information.

A.M.H.—I have had a good deal of difficulty in teaching my second class geography I do not seem to make any progress at all; hence I decided to write to THE JOURNAL, having so often been helped over hard places by it before. I feel as if I could not teach at all without it.

Will not some fellow-teacher who is successful in teaching this subject kindly give this inquirer and others the benefit of his or her experience? If we should receive two or three papers on the subject, so much the better. Just give us, please, the course and methods whose results have pleased you best.

IDEALA.—Your questions have been sent to the Science editor. Look for answer in Science department.

W.T.A.—(1) Our Friday afternoon "pieces" are intended mainly for recitations or readings. We assume that exercises of that kind are given in every school. They are very useful in many ways. Special care should be taken, in the first place, that the reciter or reader understands the meaning. This can be known by the emphasis and inflection, though a few questions are sometimes desirable to bring out the nicer turns of thought. Careful attention should also be given to pronunciation, enunciation, and all the other points which are essential to good reading or elocution, in which the average Canadian school boy and girl are sometimes said to be very deficient.

(2) Write to the Education Department for full information.

(3) Will some teacher of the subject kindly mention any cheap works which would be helpful in teaching geography?

LUCAN.—Your question will be answered in Science department.

J. E. A.—No. The limit of work for Entrance Examination for 1896 has not been changed in any particular from that for 1895.

D. W.—Yes. A teacher who passed Junior Leaving Examination, in 1894, can take Senior Leaving in 1896 or 1897 on the old option (Botany, etc.), without French or Latin.

R. B.—A teacher has Junior Leaving certificate of 1892. Took Model School teachers' certificate same year. Can he obtain license to teach, good for any school in the province, or would it be good only for the particular school? If the teacher holds or obtains a Third-Class certificate, it is valid in any county, under limitations in regard to time. See Departmental Regulations re Third-Class certificates.

T. D.—You had better write to the Education Department for lists of selections for memorization, etc. They will be sent free on application.

Book Notices.

FOUR YEARS OF NOVEL READING. Edited by R. G. Moulton. Boston: D. C. Heath. Price, 50 cents; pp. 100.

The interesting experiment of establishing a serious study of English fiction in the mining district of Backworth, Northumberland, Eng., is described here by one of its members, illustrated by representative essays, and introduced by a few words in commendation of novels by Professor Moulton. By means of a Literary Union twenty-five novels of classical character were read, discussed, debated, and written about in four years; the chief difficulties or points to be noted were indicated by prominent men of letters; altogether, a very interesting and instructive experiment, which should take root elsewhere.

BURKE, REFLECTIONS ON THE FRENCH REVOLUTION, AND SPEECHES. Edited by F. G. Selby. Macmillan & Co. Toronto: Copp, Clark Co.

In these two volumes Professor Selby has gathered, in the one case, the most characteristic prose work of Burke and some of his greatest speeches (Taxation of America, Conciliation with America), to which is added appropriately his letter to the sheriffs of Bristol on American affairs. The introductions are full, and show adequate grasp of the historical setting of the works edited and proper appreciation of Burke's greatness, even when, as in the case of the French Revolution, his position was essentially wrong. Full notes accompany a well-printed text, making the volumes essential to the reader and student of Burke.

THE FARMERS' COLLEGE.

The new Veterinary School in connection with Queen's University, Kingston, and the Dairy School opened last winter, have been established solely in the interest of the general farmer and stock-raiser. In these days, when farming has to be done scientifically in order to make it pay, it is essential that the farmer should know something about such contagious diseases as epizootic, glanders, etc. Pleuro-pneumonia keeps American cattle out of the European markets. A farmer often loses a valuable horse or cow when a little knowledge of veterinary medicine would have saved its life. The plain moral seems to be: Teach your sons how to treat the diseases of the domestic animals, and to do this well send them to the Veterinary College, Kingston, and to the Dairy School.

JOHN DALTON AND THE RISE OF MODERN CHEMISTRY. By Sir Henry E. Roscoe. Pp. 216. Macmillan & Co., New York; Copp, Clark Co., Toronto.

In this little volume of the Century Science Series Sir Henry Roscoe tells in a most interesting way, not only of the life and labors of the eminent founder of modern chemistry, but of the growth of the science from the plane to which Dalton raised it. The whole is a charming bit of biography associated with the early history of the science. For the ordinary reader as well as the professional chemist there is much in Dalton's life worthy of emulation, and its story should inspire and encourage every student.

LESSONS IN THE NEW GEOGRAPHY. By S. Trotter, M.D. D. C. Heath & Co., Publishers, Boston. Illustrated. Pp. 182.

Twenty-five years ago, foreign countries, states, peoples, and cities were but names; to-day they are realities. Our means of transportation are gradually breaking down racial distinctions, and we are becoming citizens of the world. It is because this is so that geography, as it used to be taught, has become comparatively valueless. The influences that moved man, physical, commercial, and social, must receive more and more attention. This the "New Geography" aims to do, and Mr. Trotter has made an excellent beginning in the little volume before us.

PHYSICAL CULTURE. By Laurie Preece. C. W. Bardeen, Syracuse. \$2.

A system of physical culture, to commend itself, must be such as can be done by the pupils in the schoolroom; must not cause confusion; must not require special adaptation of dress; must be of real value in building up the body in health and strength, and must help in acquiring a correct carriage and perfect

In Braham's patent pen, advertised on second page of this issue, the Agents Dominion Supply Company offer something new in the pen line. If the pen fulfils its promise of saving nineteen dips out of twenty, if it even saves nine out of ten—and we do not see why it may not—it will take rank among the time-saving inventions of a busy age, and be a boon to teachers and children as well as to all other users of the pen.

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freedom of motion. A system that meets these requirements is given in "Physical Culture" by Laurie Preece. It is intended for Public Schools without apparatus, and in the hands of a careful and enthusiastic teacher would relieve much of the monotony and wearisomeness of the routine school life. The book is simple in explanation and well illustrated by phototypes. The printing and paper are excellent.

The Educational Journal Clubbing List

It has been represented to us that many of the subscribers to THE EDUCATIONAL JOURNAL might be glad of an opportunity to get, in connection with it, one or more of the leading weekly newspapers or magazines of the day at reduced rates for the two or more. We are, therefore, making the best arrangements in our power to supply to every subscriber who wishes it any one or more of a good list of papers and magazines, on the terms given in the following table. Our arrangements are not far enough advanced to enable us to name more than a few Canadian periodicals in this number, but we hope to have the table considerably extended in our next and following numbers. Of course, the advantage of this clubbing arrangement is available only to those who pay cash in advance. Immediately on receipt of the subscription-price named for any paper or magazine on our list, we forward it to the proper office and have the subscriber's name and address put upon the mailing list, after which the subscriber must look to the publishers of the periodical in question for his copy.

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We hope to be in a position to add, in next number, the names of the principal American monthlies.

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We are sorry that there has been some unavoidable delay in the full organization of our Teachers' Bureau, but we expect to be in a position to make full announcements very soon, after which we shall hope to be able to render valuable service to Teachers, as well as to Boards of School Trustees, School and College Principals, and to the profession generally, by affording a reliable medium of communication between teachers seeking situations, and schools and colleges desiring good teachers.



Address all communications, of whatever kind, to

THE
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OFFICIAL CALENDAR

OF THE

Educational Department.

November:

1. Last day for receiving applications for candidates not in attendance at the Provincial School of Pedagogy for special examination to be held in December. (1st November.)
30. Last day for appointment of School Auditors by Public and Separate School Trustees. [P.S. Act, sec. 37 (1); S.S. Act, sec. 28 (5).] (On or before 1st December.)

Municipal Clerk to transmit to County Inspector statement showing whether or not any county rate for Public School purposes has been placed upon Collector's roll against any Separate School Supporter. [P.S. Act, sec. 113; S.S. Act, sec. 5c.] (Not later than 1st December.)

December:

9. County Model Schools Examinations begin. (During the last week of the session.)
30. Special Examinations for Candidates, who are exempt from attendance at Provincial School of Pedagogy.

Returning Officers named by resolution of Public School Board. [P.S. Act, sec. 102 (2).] (Before 2nd Wednesday in December.)

Practical Examinations at Provincial Normal Schools begin. (Subject to appointment.)

Last day for Public and Separate School Trustees to fix places for nomination of Trustees. [P.S. Act, sec. 102 (2); S.S. Act, sec. 31 (5).] (Before 2nd Wednesday in December.)

14. County Treasurer to pay Township Treasurer rates collected in Township. [P.S. Act, sec. 122 (3).] (On or before 14th December.)

*Local assessment to be paid Separate School Trustees. [S.S. Act, sec. 55.] (Not later than 14th December.)

Municipal Council to pay Secretary-Treasurer Public School Boards all sums levied and collected in township. [P.S. Act, sec. 118.] (On or before 15th December.)

County Councils to pay Treasurer High Schools. [H.S. Act, sec. 40.] (On or before 15th December.)

High School Treasurer to receive all moneys due and raised under High Schools Act. [H.S. Act, sec. 36 (1).] (On or before 15th December.)

18. Written Examinations at Provincial Normal Schools begin. (Subject to appointment.)

19. Last day for notice of formation of new school sections to be posted by Township Clerk. [P.S. Act, sec. 29.] (6 days before last Wednesday in December.)

Provincial Normal Schools close (Second session). (Subject to appointment.)

22. High Schools first term, and Public and Separate Schools close. [H.S. Act, sec. 42; P.S. Act, sec. 173 (1) (2); S.S. Act, sec. 79 (1).] High Schools close 2nd December; Roman Catholic Librarian House of Commons