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## Editorial Notes.

WE have still on hand a number of copies of the issue of July 1st, containing the time-tables which received the prizes in the competition. As the printing of these tables in the shape in which they appear cost us quite a large sum *extra*, we can hardly afford to send them free as sample copies, but we shall be glad to send them to any address at the rate of seven cents per copy.

THE teacher who rises to the height of his responsibilities, will never fail to keep in view that he is training citizens for citizenship, as well as men and women for business, social, and professional life. There can be no doubt that the views on social and moral questions imbibed in the school often cling to the pupil through all his future life. From this point of view we can get an enlarged perception of the responsibilities of the teacher's work. The character of the social and civil institutions of Canada twenty-five years hence is being in no small degree moulded in the school-rooms of Canada to-day.

WHEN the writer was a boy at school there was, perhaps, no more irksome study on the programme than geography. We presume that in the better class of the schools of to-day there is no more delightful class exercise. The difference is wholly in the method of teaching, and in the text-books used. Under the old method, which it is

to be hoped is now well nigh obsolete, the chief part of the study consisted in committing dry facts to memory. The facts were dry because they related almost wholly to shapes of bodies of land and water, and artificial boundaries of countries and kingdoms. There was little of human interest in them. To-day the teacher who knows how to teach deals very largely with climate and productions, agricultural and animal, and, above all, with men and their peculiarities, habits, and institutions. In his or her hands, too, geography is not so much a separate study as an accompaniment of history and biography, and narrative. Let boys and girls once form the habit of locating every place or people treated of or alluded to in the course of their reading, and the great facts of geography, those facts touching the chief countries and peoples of the earth, without a knowledge of which no man or woman can be considered fairly intelligent, will be acquired, without the drudgery which made the old methods inexpressibly tedious, and much of the toil a waste of time.

A WRITER in *Harper's Bazaar* says:

"We believe a large part of the unfavorable influence of school life upon the child's health is due to the prolonged immobility which the ordinary system requires, and the necessary confinement of a young child to a chair or bench without some intervening muscular activity or recreation. Immobility is opposed to growth. It is opposed to all the instincts of the healthy lower animals, and to those of all vigorous children."

There is much truth in this. We have seen teachers whose best energies, from nine till twelve, and from one till four, were expended in one continued effort to keep the children still and silent—a prolonged struggle against the innate forces which were constantly urging them to movement. It was a prolonged fight against nature. In proportion to its success this effort was a contravention of nature's beneficent provision for the growth and development of a healthy human animal. Of course, it is well that children should be trained to quietness and immobility at proper times and for reasonable periods. But these periods should be very short with the younger ones. They may be lengthened gradually as the child grows older. We wonder if there are any among

our readers who spend their strength and nervous energy in this unnatural and unequal warfare. If so, they have yet to learn that as a matter even of economy of time and success in work, the little ones should be given a change of position and a motion exercise of some kind at least every half-hour. Try it.

THERE is a constant cry in many of our American and some of our Canadian exchanges that children should be taught patriotism in the schools. School education should certainly fit children to become intelligent citizens as they grow up. In order to do this they should know something of the history, the constitution, and the civic and political institutions of their country, as well as of other countries. But the truest way to teach patriotism is to train up the young to become broad-minded, noble, men and women. There is a spurious and ignoble patriotism which teaches men to say, "I will stand up for my country, right or wrong." The loftier patriot is he who says, "I will stand up for my country, only so far as I can see that she is right." There is also a narrow, ignorant patriotism, which is composed of ignorance and prejudice in about equal parts. Patriots of this kind take no trouble to inform themselves about other countries, and consequently have no data for making fair comparisons with their own. Let us inculcate patriotism, but let it be the genuine thing, clear-sighted, large-hearted, and above all petty dislikes and jealousies of other nations. The patriotic instinct is innate. It is a good and right feeling, implanted for a good purpose, and under ordinary circumstances is sure to survive and grow. But let it not be forgotten that cosmopolitanism or philanthropy has a still nobler origin and purpose. It is from above, and recognizes all men as brethren.

NOW is the time to subscribe for the EDUCATIONAL JOURNAL. Those who do so within the next few weeks can obtain the numbers from September 1st, the commencement of the school year. They will, thereby, in addition to other advantages, have the benefit of all the Departmental Examination Questions and Solutions which will appear in successive numbers.

## English.

All articles and communications intended for this department should be addressed to the ENGLISH EDITOR, EDUCATIONAL JOURNAL, Room 20, 11½ Richmond Street West, Toronto.

## FOURTH READER LITERATURE.

## AFTER DEATH IN ARABIA.

BY EDWIN ARNOLD.

## I.—INTRODUCTION.

THE belief of the Christian regarding death and the future world is familiar to us all; the poem "After Death in Arabia" is intended to portray poetically the belief of the Mohammedan concerning the same things. The name of the poem suggests this: It treats of death ("after death") as viewed in the source and centre of the Mohammedan religion ("in Arabia"). The poem, therefore, is of interest to us as illustrating Mohammedan doctrine as compared with Christian doctrine. The introduction to the poem will therefore naturally be, first, some reference to the faith of a dying Christian. The teacher might depict the death-bed of such a one, calling up or having the pupils call up the belief that would sustain his last moments; second, he might add a few words on the Mohammedan religion, touching on its author, Mohammed (570-632), his birth at Mecca, his adoption in free outlines of the theology of the Old Testament, believing in the unity and supremacy of God, and not entirely rejecting Christ, whom he looked upon as a prophet inferior only to himself; the spread of his doctrines and power over Arabia, Syria, etc. Thus having a rough outline of the Mohammedan faith (any encyclopædia will give full details), we may naturally read with intelligence this poem which treats of a special feature of the Mohammedan faith, how it regards death from the point of view of the hereafter.

## II.—THE PLAN OF THE POEM.

It will be noticed that instead of a dry exposition of the Mohammedan doctrine, the poet gives us a vivid picture in which much personal interest is evoked. Abdullah, a true Mohammedan, had died at the time the muezzins from the minarets of the mosque called the faithful to prayer. He knows how his friends gather about his lifeless body, weeping his loss, and sends a message to them from beyond the grave to comfort them in affliction. This message is made in the form of a letter or epistle, having the eastern mode of address (compare our own), showing first the writer and the person addressed:

"He who died at Azan sends  
This to comfort all his friends."

and concluding with reference to the bearer of the letter:

"He who died at Azan gave  
This to those who made his grave."

The latter reference, with the first lines of the epistle itself,

"it lies, I know,  
Pale and white and cold as snow."

shows that the message comes to the mourners immediately after Abdullah's death.

The epistle itself gives a series of reasons why the mourners about Abdullah's [corpse should not weep but be comforted:

Stanza one depicts the mourners weeping around the dead body which Abdullah assures them was *his*, but was not his real self.

Stanza two illustrates this distinction between the body and the soul, or real personal being, by reference to (1) a hut and the inmate, (2) the garment and the wearer, (3) the cage and the hawk.

Stanza three still further strengthens this distinction by more beautiful comparisons, by reference to (1) the sea-shell and the pearl, (2) the jar and the gold concealed in it.

Stanza four shows what death really is: (1) The reading of the riddle of life that had long

perplexed the living man, (2) the entrance into paradise and endless life.

Stanza five still further illustrates what death is: It is not an eternal farewell, since those who now mourn will soon join him in happiness; it is the entrance into the only true and perfect life. In view of these things Abdullah bids his friends be of good cheer, since death is only a form of Allah's love, and march on bravely towards God, who is all love.

## III.—EXPLANATORY NOTES.

L. 1. *Azan*.—An Arabic word: "in Mohammedan countries, the call to public prayers, proclaimed by the crier from the minaret of the mosque." The pronunciation is usually *a-zan* but here *a'-zan*. This day-call, chanted at sunrise, noon, and sunset, begins with the Mohammedan confession of faith. God is most great, Mohammed is God's apostle—come to prayer, come to security."

L. 3. *it*.—The body of the dead Abdullah, who is supposed to have addressed this epistle to those who mourn his death.

L. 5. *ye*.—This old nominative form of the pronoun is more in keeping with the solemn cast of the poem than the every-day "you."

L. 13. *the women lave*.—"Lave" (*lav*) is from the French *laver*, to wash. It is a more formal word than "wash." The custom of washing the dead before burial is practised by Eastern and Western nations.

L. 16. *no more fitting*.—No longer a suitable covering for a soul that has reached Paradise.

L. 17. *Is a cage . . . my soul has passed*.—Lowell has the same figure in *The Changeling*:

"Or perhaps those heavenly Zingari,  
But loosed the hampering strings,  
And when they opened her cage-door  
My little bird used her wings."

L. 21. *falcon*.—One of the "noble birds of prey," bolder in proportion to their size than even eagles, acute in vision, and very powerful in flight. Falcons have been domesticated and trained to serve man in capturing on the wing birds like the heron, partridge, wild duck. Falconry was once the favorite sport of every one of noble birth.

L. 24. *Straightway*.—An archaic (old fashioned) poetical word,—at once.

L. 26. *wistful tear*.—A tear of regret and of longing to have Abdullah alive. "Wistful" here is equal to "wishful."

L. 31f. *whose lid Allah sealed*.—God placed the soul in the body, enclosing it there till it was His pleasure it should depart.

L. 32. *the while*.—At the same time that. "While" was originally a noun meaning time, but its use, except in such old-fashioned phrases as this, is now entirely adverbial. Give examples.

L. 35. *shard*.—A piece of fragment of any earthenware vessel or brittle substance.

L. 37. *Allah*.—The Arabic word for God, contracted from *al*, the, and *ilah*, God. (The word *ilah* is the same as the Hebrew word *elohim*, God, which we find in our Bible).

L. 38. *Now Thy world is understood*.—The spirit having reached Paradise, now understands the divine plan governing this world of ours, a plan it could not understand while on earth. This recalls St. Paul's words, 1 Corinth. xiii., 12.

L. 39. *the long, long wonder ends*.—The mysteries of this world, sin, crime, sorrow, suffering, etc., are revealed to the soul after death, and the wonder they occasioned throughout life is over.

L. 40. *erring friends*.—They do wrong ("err") to weep for one who is in Paradise.

L. 42. *unspoken bliss*.—Unspeakable bliss—a happiness words cannot describe.

L. 44f. *lost . . . By such light*.—Lost, as you view it, having only human intelligence to enlighten you. Compare Longfellow's lines in *Resignation*:

"We see but dimly through the mists and vapors;  
Amid these earthly damps,  
What seem to us but sad funeral tapers  
May be heaven's distant lamps."

L. 46ff. *Of unfulfilled felicity, etc.*—Of a happiness that is never completed, but always brings new joys to the soul.

These obscure lines may be paraphrased, while the soul is lost as earth views lost, it lives an undying life in the light of unending felicity in Paradise, which it makes greater by its presence.

L. 51. *I am gone before your face*.—Compare Rogers' lines,

"Those that he loved so long and sees no more,  
Loved and still loves,—not dead, but gone before."

L. 56. *here . . . there*.—Paradise . . . earth.

L. 57. *fain*.—Desirous. To be fain, to be desirous, to wish.

L. 59ff. *death . . . is the first breath, etc.*—The writer asks his mourners not to weep because of death, since death is the beginning of the true Life, life in Paradise, from which ("centre") as from the throne of God, all life proceeds. Compare

"There is no death! What seems so is transition;  
This life of mortal breath

Is but a suburb of the life elysian,  
Whose portal we call death."

—LONGFELLOW, *Resignation*.

L. 67. *La Allah illa Allah!* (Arab.) No God but the one God (*la' ila'h illa 'lla'h*), the sun of Moslem dogma and the watchword and battle-cry of the Moslem soldiers.

## IV.—QUESTIONS AND EXERCISES.

SUPERSCRPTION.—What relation do lines one and two hold to the poem? What is eastern in the superscription? Explain "Azan."

STANZA I.—1. Depict the scene described in this stanza. 2. What is represented by "it?" 3. Who is represented by "I?" 4. What feeling is signified by "Yet I smile?" 5. Account for the epithet "thing." 6. Explain the statement in "It was mine, it is not I."

STANZA II.—1. Tell briefly the substance of this stanza. 2. Do you recognize any difference between "lave" and "wash?" 3. How is the figure "last bed" appropriate to the grave? 4. Show the appropriateness of the comparisons of the body to a "hut," to a "garment," to a cage;" of the soul to an "inmate," to a "wearer," to a "falcon." 5. What is characteristic in the falcon to suggest the cage keeping him "from the splendid stars?" 6. In the soul? 7. Explain "splendid" as applied to "stars?"

STANZA III.—1. Give briefly the substance of this stanza. 2. "Be wise." In what are the friends unwise? 3. "What ye lift upon the bier." Give one word for this clause. 4. Why is this one word not used? (Note that the clause suggests what the speaker desires to suggest, the mere coarse, material substance—"what ye lift.") 5. Explain "wistful tear." 6. Show the appropriateness of the metaphor, "an empty sea-shell." "Why not say "oyster-shell?" 8. How is the comparison in "earthen jar, treasure" a suitable one for body and soul? 9. Explain "whose lid sealed." 10. Give the meaning of "Allah." What language is it? 11. Explain "the while." 12. "Let it lie." Explain "it." What thought prompts the exclamation? 13. Explain "shard." How is it an appropriate comparison for a dead body? 14. How is "gold" an appropriate comparison for "the mind that loved him?"

STANZA IV.—Tell briefly what this stanza is about. 2. Explain "now thy world is understood." 3. Explain "the long, long wonder." 4. In "yet we weep," does "yet" mean "still" or "however?" 5. Justify the use of "erring" to his friends. Explain "unspoken bliss." 7. Paraphrase to show the meaning, "Lost for you;" "in the light, felicity;" "in enlarging Paradise."

STANZA V.—1. Give the substance of this stanza. 2. What thought is in the speaker's mind that he says "Farewell, yet not farewell?" 3. Explain "where I have stepped." 4. What is the meaning of "here is all," "there

Examination Questions

HIGH SCHOOL ENTRANCE.

ENGLISH GRAMMAR.

Examiners: { John Dearness.  
A. B. Davidson, B. A.

- When James was going home yesterday evening he lost the note which his teacher had given him to take to his mother. He told her that he thought he knew where he had dropped it. She sent him back to try to find it. (a) Write in full each dependent clause in the above, and give its kind and relation. (b) Parse the italicized words.
- Tell the kind and fully analyse each of the following sentences:
  - Five times outlawed had he been By England's King and Scotland's Queen.
  - O'er our heads the weeping willow streamed its branches, Arching like a fountain shower.

3. White out

- the plurals of *who, piano, attorney, brotner*;
- the other degrees of comparison of *wooden, next, cruel, most*;
- the perfect Potential in all the persons of *burst, drink, hang*.

4. Write a sentence or sentences using:

- early* as an adjective in the comparative degree.
- late* as an adverb in the superlative degree.
- take* as a verb in the indicative, 1st plural, past tense, passive conjugation (voice).

5. (a) Using examples, explain why the Passive Conjugation is necessarily confined to Transitive Verbs.

(b) State the inflections in the following and explain the use of each inflection:

*oxen, knew, whose, will go.*

6. Correct, with reasons, the syntax of the following:

- Who did I meet you with yesterday?
- Whom do you think should be chosen?
- Each of his sisters are willing to take their turn in waiting upon him.
- Will you give James half and we three the rest or will you divide it equal between the four of us?

Values.—1—15, 16. 2—12. 3—4, 6. 4—2, 2, 4. 5—5, 12. 6—0+3, 0+3, 2+1, 3+6.

PUBLIC SCHOOL LEAVING.

ENGLISH GRAMMAR AND RHETOSIC.

Examiners: { A. B. Davidson, B. A.  
John Dearness.

A.

"Life did change for Tom and Maggie; and yet they were wrong in believing that the thoughts and loves of these first years would always make part of their lives. We could never have loved the earth so well if we had had no childhood in it—if it were not the earth where the same flowers come up again every spring that we used to gather with our tiny fingers as we sat lispng to ourselves on the grass—the same hips and haws on the autumn hedgerows—the same red-breasts that we used to call "God's birds," because they did no harm to the precious crops. What novelty is worth that sweet monotony where everything is known, and loved because it is known?"

- Write in full and state the kind and relation of each subordinate clause in the extract.
- Make a list of the prepositional adverb phrases in the extract and give the relation and the kind of relation in each case.
- State fully the grammatical relation of *that* (lines 2, 6, 11,) also of *believing* and *lispng* (lines 2, 7).
- Give the kind and the grammatical relation of the italicized words in the above extract.
- State the grammatical function of *did* (lines 1, 10), *would* (line 3), *could* (line 4), *had* (line 5).
- Give the derivation of autumn and monotony.

B.

(a) "Great was the throne of France even in those days, and great was he that sat upon it; but well Joanna knew that not the throne, nor he that sat upon it, was for her, but, on the contrary, that she was for them; not she by them,

but they by her, should rise from the dust. (b) Gorgeous were the lillies of France, and for centuries they had the privilege to spread their beauty over land and sea, until, in another century, the wrath of God and man combined to wither them; but well Joanna knew that the lillies of France would decorate no garland for her. (c) Flower nor bud, bell nor blossom, would ever bloom for her."

7. (a) Give in your own words the substance of sentences (a) and (b).

(b) Compare them in regard to structure and meaning.

8. Distinguish between the meaning of *great* (line 1) and *gorgeous* (line 6), and of *bell* and *blossom* (line 11). Express the meaning of sentence (c) without using figurative language.

C.

9. Correct or justify the following, giving in each case your reason:

- In reality more than one principle has been contended for at one time.
- Dull minds do not easily penetrate into the intricacies of a subject, and therefore they only skim off what they find on the top.
- It will invariably be found to be the case as a rule that when a fine sentiment comes from his pen it is not his own.
- It is folly to pretend to arm ourselves against the accidents of life by heaping up treasures which nothing can protect us against but the good providences of God.

Values.—1—24. 2—18. 3—3+6=9. 4—20. 5—21. 6—4. 7—12+8=20. 8—8+4=12. 9—4, 5, 5, 5.

Question Drawer.

A. H.—The Roman method of pronouncing Latin is used, we think, in a few Canadian institutions. We do not know that it is growing in favor in Canada, though it is much used in the United States. We see no reason to believe that it will be generally used in Canada within a few years.

J. M.—The proper course to pursue in respect to the child, is to call the attention of the truant officer of your town to the case. It will then become his duty to investigate the case and take such measures as the circumstances demand. In every city, town, or incorporated village, the police commissioners, or, if there are no police commissioners, the municipal council, is required by law to appoint one or more persons to act as truant officers. In townships the appointment of truant officer devolves upon the trustees of each school section. If they have not appointed such an officer it will be their duty, we presume, to look after the case themselves, when it is brought to their notice.

C. C. asks: 1. If the days and the nights are of equal length in all parts of the world twice in one year (about March 21 and Sept. 23) how is it that the days and the nights at the poles are six months in length?

It is difficult to answer this question clearly without the aid of a diagram. The fact is that it is only at the exact points indicated by the North Pole and the South Pole that the days and nights are six months in length; that is, that there is but one day and one night in a year. At any given point between the Arctic Circle and the North Pole, and between the Antarctic Circle and the South Pole, the sun does not rise above the horizon for days, or weeks, or months, according to the distance from the poles. But when we say that at any such points the days and the nights, respectively, are weeks or months in length, it is necessary to remember that these places have still what we may call a twenty-four-hour day and night, since during a certain part of each twenty-four hours the unrising or the unsetting sun, as the case may be, approaches nearer, and during a part recedes farther from the horizon, the only difference being that within the polar regions it does not during these periods rise above or sink below the horizon. Hence it is true in a sense easily understood that even within the polar circles the days and nights are each twelve hours in length at the time of the solstices. By means of the diagrams in any good geography, or, better, by means of a globe or ball of any kind, and a lighted lamp, this may be easily made clear. Your other questions will be answered in the English Department.

naught?" 5. Explain "fain." 6. What suggests the statement "sunshine follow rain?" 7. What view of death is given in line 59ff? 8. Explain "Life, which is of all life a centre." 9. Explain how "all seems love" viewed from "Allah's throne." 10. Give one word for "stout of heart." 11. Account for the use of "home" (compare line 61f.) 12. Translate *La Allah illa Allah*. 13. What Christian text gives the same thought of God as the last line of this stanza?

How does the Mohammedan view of death differ from the Christian's? Compare it with Longfellow's view as contained in *Resignation*.

SUBSCRIPTION.—What Eastern touch is in these concluding lines 69, 70? In what form is the poem cast that it should have superscription and subscription?

BIOGRAPICAL NOTE.

Sir Edwin Arnold, author of the poem "After Death in Arabia," was born in 1832. He was the son of a Sussex magistrate, and received a careful education in Rochester and King's College, London. At Oxford he was successful in winning a scholarship in University College, and the Newdigate prize in English verse for his poem on "Belshazzar's Feast." For a while he taught as second master at Birmingham, then accepting an appointment of Principal in the Government Sanskrit College at Poona, he left for India, and perfected himself in that knowledge of the East for which his name is famous. He returned, however, for a while to England, joined the staff of the *Daily Telegraph*, 1861, and was instrumental in organizing and sending forth those two great expeditions, George Smith into Assyria, and Stanley into Africa . . . in search of Livingstone. More recently Arnold has devoted himself to the life and literature of Japan, in which country he spends most of his time.

As a poet, Edwin Arnold's work is mostly Eastern in substance and also partly in feeling and color, and is designed to exhibit in their best light the religious systems of the East. His chief works, to which he adds a volume year by year, are: *Indian Song of Songs*, 1875; *Light of Asia*, 1879; *Indian Poetry*, 1881; *Pearls of Faith*, 1883; *Songs Celestial*, 1885; *Lotus and Jewel*, 1888; *Light of the World, Potiphar's Wife*, etc.

F. H. S.

CORRESPONDENCE.

TEACHER.—For list of Entrance Literature and Public School Leaving Literature, apply to Education Department, Toronto.

In "God is love," "is" is a principal verb, intransitive, third person, singular; "love" is a noun, nominative case, in predicative relation to "God."

In "The Wreck of the Hesperus," the expression "the masts went by the board" means that the masts fell across the sides of the vessel. "Board," in nautical language, denotes the side of a ship.

The Spanish Main is the coast land along the north shore of South America.

The reef of Norman's Woe is off the Massachusetts coast, near Gloucester.

THE war between China and Japan makes the study of the map of Asia of special interest just now. The Map and School Supply Co. inform us that a map of Asia is included in their new series of wall maps. This Co. has also a number of new lines of school supplies, including a manikin, to aid in the study of Physiology in the public schools. See adv't.

"THERE'S one curious thing about discovering places," said Johnny, after he got through with his study. "Take Bermuda, for instance. It was discovered by a man named Bermudez. How he happened to stumble on a place with a name just like his beats me."

# The Educational Journal

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AND THE ADVANCEMENT OF THE TEACHING  
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J. E. WELLS, M.A., EDITOR AND PROPRIETOR.

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## Editorials.

TORONTO, SEPTEMBER 15, 1894.

### INDIVIDUAL TEACHING.

THE large class is, we suppose, a necessity of the modern public school, until such time as the principles of education are so well understood, and its value so fully appreciated, that parents and taxpayers will be ready to double or treble the amounts now expended for educational purposes. But the large class is, none the less, utterly incompatible with the best, we are almost ready to say, with any really good and efficient teaching. For this and other reasons we are not surprised to note what we suspect to be a growing tendency on the part of some of the better educated parents, who have the means, to establish and patronize private schools, based on the system of individual teaching. But as it is not likely that very many will be able and willing to do this for some time to come, it becomes a question of the utmost importance for the consideration of those interested in public education, to what extent the programme and routine of the public school can be so modified as to admit of more individual work with pupils, especially with the younger pupils, than is at present possible. In many cases, no doubt, the addition of a single teacher to the staff would go far towards making this great improvement possible

A good deal of attention was, a few months since, attracted to a description given by Mr. Search, Superintendent of Public Schools in Pueblo, Col., of the system of "Individual Teaching" carried out in those schools. "The fundamental characteristic of the plan on which the schools are organized," says Mr. Search, "is the conservation of the individual." Every pupil carries on a large part of his studies by himself—the teacher passing from desk to desk, developing self-reliant and independent workers. Love of work caused by success soon becomes a more powerful stimulus than competition. A careful record is kept of each pupil's advancement. It is found that artificial inducements to study are not needed—nearly everyone developing into an ideal student.

The foregoing is the method that was in vogue thirty or forty years ago, especially in the country schools. Where the teacher was competent and conscientious, which, we fear, was not always the case, we have no doubt that the results, in the shape of strong and independent workers, were better than any which are possible under the graded system, with forty, fifty, or even sixty, pupils in a single class. We were conversing a few days ago with the headmaster of an important and well-organized private school. In the course of conversation he stated, simply by way of illustrating the point under discussion, and not for the sake of invidious comparison, a fact which was just what we should have expected to meet with, and which is instructive in regard to the point under consideration. It was found that boys who, under the old system, were backward and indisposed to study would, under the new and more individual method of working, often become aroused and develop speedily into faithful and successful workers. To such an extent was this the case that he sometimes found it necessary, instead of urging such boys on to harder work, actually to take means to check their new ambition, lest they should injure their health by over-work. This goes to confirm a view which we have always held and often expressed, viz., that in the natural order of things, the healthy boy or girl should take as keen a delight in mental as in physical gymnastics, and that when such a boy or girl dislikes going to school, and tries to shirk study, the fault is nine times out of ten in the school rather than in the child. If this be a fact, it is a most important one for the consideration of the teacher.

The following, from our Canadian contemporary, the *Educational Review*, is well said:

"The gardener who trims his trees all to

one pattern fails to produce those pleasing effects which are found where the peculiarities of each individual are respected. A well trimmed hedgerow may look well as a whole, but the varied beauties and normal development of the units are entirely lost. Is it not so in the most of our schools where the pupils are dealt with in masses? Every one must be cast in the same mould and subjected to the same treatment. The talented become restive and bad, or acquire habits of idleness while waiting for the dull, and the dull become discouraged and hopeless while trying to follow those naturally bright. We always felt it to be a great injustice to keep large classes entirely together for six months or a year at a time, to suit the teaching to the average ability of the class and to ignore the idiosyncrasies of each pupil. It is contrary to the fundamental principles of modern pedagogy.

We have endeavored in our class teaching to direct our attention to the weakest members of the class, allowing the rest to work by themselves but reserving enough time to give them some individual assistance, and allowing them to advance as rapidly as they were able without regard to the progress of their classmates."

### THE BASIS OF MORAL TRAINING.

WE give as our special educational article in this number, a part of the article by Professor Dewey, of the University of Michigan, to which we referred in our last. This paper will well repay careful reading. A great deal is being said just now in educational papers and magazines, and by certain prominent educators, on the subject of "child study." Much of what is thus said and written appears to us, we must confess, of doubtful value for practical purposes, and it is practical results which are especially desirable at the present time. Some able writers seem in danger of soaring into a misty, metaphysical region, in their discussions of the subject. It might be presumptuous to intimate that they are in any danger of losing themselves in such flights, but there is certainly some danger lest thinkers of weaker wing may become lost in attempting to follow them. But, be that as it may, there can be no doubt that it is a part, and a most important part of the duty of every teacher of children to make a special study of the child mind.

The paper before us is an admirable illustration of how this may be done. Professor Dewey's inquiries are confined to a certain line of investigation, but it is beyond all question a most important line. We cannot but think that, if a large number of intelligent teachers would adopt the same method with a large number of students of various ages and grades, a collection of most valuable and instructive material might be gathered. Prof. Dewey's investigations were, we infer, made chiefly

or exclusively among college students whose minds had reached some degree of maturity. But we see no reason why inquiries along similar lines, among children at the various ages which are to be found in the public schools, might not be rewarded with equally interesting results. It might be necessary in such cases to put the questions in a somewhat simpler form. But this could easily be done. Suppose, for instance, a class of intelligent children in a public school were asked to write out carefully and thoughtfully their opinions in respect to the right or wrong of half-a-dozen selected actions, such as are of frequent occurrence under their observation, in the school, or on the play-ground. It would be well that the actions chosen should be of various kinds, including some which are almost universally regarded as bad and others which are with equal unanimity considered praiseworthy. The child might also be required, after having pronounced his opinion, to give, as carefully as possible, his reasons for believing the one course to be right and the other wrong. The answers would certainly give us an insight into the nature of child ethics and child theology which would be a revelation to many.

While it is impossible to overestimate the importance of having the children's ethical opinions based, as far as possible, upon right views of the nature of duty and obligation, in other words, of right and wrong, it is desirable that these should be so clear and so well grounded that the mature man or woman would never have cause to feel ashamed of them, or to regret that the doors of research and thought had not been set open before him, so that he might have reached sounder conclusions.

#### HOLIDAYS AND SALARIES.

WE are often asked questions in regard to the proper proportion of salary to be paid, in the case of a teacher who is employed for a shorter period than a year, or who is compelled for any reason to discontinue before the expiration of the school year, for the broken portion of such year. We have to apologize to some friend who recently sent us such an inquiry, but whose communication has been unfortunately mislaid. Ordinarily the answer in such cases is easily given, in the words of Section 135 of the School Act, which reads as follows:

"Every teacher who serves under an agreement with the board of trustees for three months or over, shall be entitled to be paid his salary for the authorized holidays occurring during the period of such service in the proportion which the number of days during which he has taught in the calendar year, bears to the whole number of teaching days in such year."

This seems clear enough, and there is certainly nothing on the face of the clause to imply that it does not apply to engagements for shorter terms, not less than three months, as well as to those made for a full year or more. So understood, the law appears to be just, as well as easy of application. It may be of service to some, however, to have their attention called to the interpretation given by Judge Boys in the judgment recorded in the following extract, which was clipped at the time from one of the newspapers reporting the case. Had the last line read "who enter into an agreement for *three months*," instead of "who enter into an agreement for *one year*," we could have readily reconciled the judge's decision with the words of the Act. As it is we are unable to do so. We are, therefore, inclined to think that there must be some error in the report. We give it, however, as we find it. No doubt any person specially interested could ascertain the exact words of the judgment on application to the proper authorities. The report is as follows:

A test case has just been decided by Judge Boys, at Collingwood, which will interest school trustees and teachers everywhere. D. Galbraith, M.A., now a valued teacher in the London Collegiate Institute, taught in the Collingwood Institute from Aug. 28, 1893, to Jan. 27, 1894, at a rate of remuneration payable monthly for an indefinite time, subject to one month's notice on either side. Mr. Galbraith taught there, it will be seen, for five months, including holidays. During this time there were one hundred and six teaching days, eighty-five out of two hundred and seven in 1893, and twenty-one out of two hundred and six in 1894. He took advantage of the recent act, by which teachers are to be paid according to the proportion the number of days taught bears to the total number of teaching days in the year, and hence claimed eighty-five two hundred and sevenths of \$900, and twenty-one two hundred and sixths of \$900, a total of \$461.25 or \$68.75 more than the trustees claimed him entitled to, they holding that he had no right to take the benefit of the act. Mr. Galbraith entered action against the trustees for \$68.75, and Judge Boys has just given judgment in favor of the trustees, stating that the statute above referred to applies only to teachers who enter into an agreement for one year.

#### PARAPHRASING POETRY.

WRITING in the *School Review*, Mr. Thurber says:

"At its best, paraphrase of good verse, as practised in school, is parody. A paraphrase is not merely another form of the phrase; it is formless phrase, without beauty, without sweetness, without light. Better than paraphrase is repetition of the poem in its true form. This cannot be improved upon. A poem well dwelt upon grows upon the young learner. It will

grow upon him still when he has done with it in school. His memories of it should not be paraphrastic memories, but should carry with them the glories of rhythm and figure with which the piece was originally endowed by the poet's art.

Other occasions for writing are quite abundant enough to make it easy to spare this one. Of opportunities for prose of every grade the world is full. We need not resort to poetry for materials of prose. Poetry addresses the imagination directly, not through a medium; and even in the schoolroom it may be trusted to reach its mark."

This is, just now, a somewhat familiar outcry. In the case of many, especially those who have a good deal of the poetic instinct, it is, no doubt, sincere. At the same time we cannot agree with it. It loses sight, we think, of the real reason for asking an occasional paraphrase from the child or student. Mr. Thurber seems to think that the method is resorted to simply as an exercise in writing. By no means. Its proper use is as an exercise in thinking the poet's thought, a test of its intelligent comprehension. Probably few except those engaged in teaching, and perhaps not all teachers, have any idea how much unintelligent reading there is in schools. With many children of larger as well as smaller growth, the reading of a somewhat subtle passage, though clothed in the garb of the finest poetry, is a purely parrot-like exercise. The reader may enjoy, in a way, the perfection of the rhythm and the felicity of the language, and yet really have no clear idea of the poet's meaning. Of course, the very essence and spirit of the poem are in the thoughts, not in the mere words. It is one of the first duties of a teacher to ascertain whether the pupil is really taking in the thought of the verses. We know of no way in which this can be ascertained except by questioning the reader. But questioning him in regard to the meaning is simply asking him to express that meaning in other words, that is, to paraphrase it. For this reason we are persuaded that one of the most profitable exercises for a student, educationally, is the paraphrasing of some poetical gem. It familiarizes him with noble thoughts, at the same time that it gives him practical training in the expression of thought. For our own part, we have no fear that anyone's power to appreciate true poetry will suffer from the habit of putting the thought of the poet into other words, or putting the same words into prose order.

WE invite contributions on all subjects pertaining to the work and welfare of the schools. Original papers for the "Hints and Helps" and "Methods" Departments will be especially welcome.

## Special Papers.

## THE CHAOS IN MORAL TRAINING.

BY JOHN DEWEY,  
PROFESSOR OF PHILOSOPHY IN MICHIGAN UNIVERSITY.  
(*Popular Science Monthly* FOR AUGUST.)

In teaching undergraduates in the subject of ethics, I have been impressed with the need of getting the discussion as near as possible to what is going on in the minds of students themselves. Although ethics is the most practical of the philosophic studies, none lends itself more readily to merely technical statement and formal discussion. It is easy to forget that we are discussing the actual behavior, motives, and conduct of men, and substitute for that a discussion of Kant's or Mill's or Spencer's theory of ethics. It seems to me especially advisable to get in some contact with the practical, and accordingly largely unconscious, theory of moral ends and motives which actually controls thinking upon moral subjects. One is, however, considerably embarrassed in attempting this. As any one knows who has much to do with the young, their conscious thoughts in these matters, or at least their statements, are not fresher, but more conventional, than those of their elders. They are apt to desire to say the edifying thing, and the thing which they feel is expected of them, rather than express their own inner feelings. Moreover, some points have been so much discussed that any direct questioning upon them is apt to bring forth remnants of controversies that have been heard or read, second-hand opinions, an argumentative taking of sides, rather than to evoke the spontaneous and native attitude. Among other devices for eliminating or at least reducing these disturbing factors the following method was hit upon. To ask each student to state some typical early moral experience of his own, relating, say, to obedience, honesty, and truthfulness, and the impression left by the outcome upon his own mind, especially as to the reason for the virtue in question. The answers brought out a considerable mass of material, incidentally as well as directly. Some of this seems to me to have value beyond the immediate pedagogical occasion which called it forth, as furnishing a fairly representative sample of the motives instilled by existing methods of moral training, and the impressions which these methods leave behind.

Nine-tenths of the answers may be classified under one of the following heads: The impression left by the mode of treatment was that the motive for right doing is (1) found in the consequences of the act; (2) fear of being punished; (3) simply because it is right; (4) because right-doing pleases the parent, while wrong-doing displeases; (5) the religious motive. In number the religious motive predominates; next to that comes fear of punishment. In many cases, of course, several of these reasons were inculcated.

1. The regard for consequences as a reason for morality takes the form of regard either for external consequences or for intrinsic reactions—that is to say, upon the character of the agent or upon those about him. A number seem to have learned the value of obedience by observation of disagreeable results proceeding from its opposite. For example, one child was told not to take off her shoes and stockings; she disobeyed, and had croup in the night—whence, she remarks, she derived the idea that others knew more than she, and that disobedience was dangerous. Another girl was told not to wear a lawn dress to a picnic; she disobeyed, but a rain storm came up and faded it out. "From this and other similar experiences I deduced the idea that obedience was wise. Yet this was with the reservation that obedience was to be tempered with discretion, as I observed that in some instances acting upon my own judgment was justified by the outcome."

When we come to the moral motive as deter-

mined by the intrinsic results of the act, we are obviously approaching the question, so mooted upon its theoretical side, of intuitionism *versus* empiricism. Nothing was said upon this point in giving out the questions. The students may fairly be presumed to have been unconscious of any such bearing in their answers, and so these may be taken as fairly free from any bias. No one reply indicates any distinct recognition of right or wrong prior to the commission of some particular act. After acting, a number of persons note the fact that they became so uncomfortable that they either owned up or resolved not to do that sort of thing again. This experience, however, is noted only in the case of a lie told or acted. Several expressly state that obedience and honesty (as a regard for the property of others) appeared quite artificial, their need being seen only after considerable instruction and some rather crucial experiences. Obedience, in many cases, seemed quite arbitrary—"necessary for children," as one puts it, "but not for grown people;" or, as another notes, "till he got big enough so he wouldn't have to mind"; while a third states that obedience, as such, was always accompanied with a certain resentment and a desire to have the positions reversed, so that he could do the commanding. As for honesty, one says that it always seemed to him that anything he wanted to use belonged to him; another, that any pretty thing which she admired was her own. One child notes that she saved up the pennies her father had given her to take to Sunday-school and bought a valentine with them, which she gave to him, to surprise him. The father threw this into the fire first, and then punished her, taking it for granted that she knew she was doing wrong. Not even after that, however, did she feel it was wrong, but rather felt indignant and humiliated that her father had treated her gift in such a way. Another child could see no wrong in taking the pennies from a bank which she and her sister had in common. The following instance is worth quoting in full: "Before I was four I remember several instances in which I saw moral delinquencies in others, which I wished to punish or did punish, but none in myself. As to honesty, I claimed all the eggs laid in the neighborhood as coming from my own pullet. After being convinced of the physical impossibility of this, it was a long time before I would believe that everything I laid hands on was not mine. I was once driven off from a field where I was picking berries; this made a great impression upon me, and led to questions regarding the rights of others to be so exclusive. The effectual appeal always lay in being led to put myself in the place of others." A number note that there was great difficulty in appreciating that a fence could institute a moral barrier between mine and thine. But as regards lying, a few reports having been made thoroughly uncomfortable by its after effects in their own emotions. The following story, trivial in itself, is not trivial in meaning: "Once, when I had two apples, I wished to give one to my playmate; I knew she would expect the best one, which I also wished for myself, so I held out the best side of the poorer one and made her think that it was the better of the two. Her belief that I had really given her the best took away all the sweetness from my own apple, and I decided that straightforwardness was better." This instance, as well as others pointing in the same direction, so far as they would justify any conclusion, fall in line with the case reported by Professor James relative to the experience of a deaf-mute. This boy had stolen ten dollars, thinking it a smaller sum, having previously stolen many small amounts with no compunctions of conscience. In this case, the reaction into himself was, so to speak, so massive and bulky that he became thoroughly uncomfortable and ashamed; was brought spontaneously to recognizing its badness, and kept from stealing money in the future. This genuine meaning of the innate theory of conscience seems accordingly, to Professor James, to mean that any

act, if it can be experienced with adequate detail and fulness, "with all that it comports," will manifest its intrinsic quality.

2. An astonishingly large number record that they got their first distinct moral impressions through punishment, and of these a considerable fraction got the idea that the chief reason for doing right was to avoid punishment in the future. This division runs into that dealing with the religious motive, as sometimes the fear was of punishment from parent, sometimes from God; it also runs into the fourth head to be considered, practically if not logically, for a number record that the motive appealed to by their father was fear of punishment, while that of their mother was love of her, and grief caused by wrong-doing.

A few samples tell, in different language, the almost uniform tale of the outcome of the appeal to force. "I rebelled with feelings of hatred and of desire for revenge. It seemed to me unjust, imposed by sheer force, not reason." One tells the story of being coaxed by older boys to steal some tobacco from his father. "I was caught and given a whipping, no questions being asked and no explanation given. The result was certainly a fear of punishment in the future, but no moral impression. I thought my father whipped me because he wanted the tobacco himself, and so objected to my having any of it." Another reports that the impression left by punishment was a mixture of a feeling of personal indignity suffered—a feeling so strong as to blot out the original offense—and a belief that she was punished for being detected. Another thought she was punished because her father was the stronger of the two; another, that fear of harm to self induced people to do right things; another tells us that he longed for the age of independence to arrive so that he might retaliate. One, upon whom fear of punishment from God was freely impressed, formed the idea that if he could put off death long enough, lying was the best way out of some things. One child (five years old) went to the front part of the house after she had been forbidden, and, falling, hurt herself. She was told that this was a punishment from God; whence she drew the not illogical conclusion that God was a tyrant, but that it was possible to outwit Him by being more careful next time, and not falling down. One peculiarity of the method of inducing morality by creating fear is that some parents, in order to prevent lying, deem it advisable to lie themselves; e.g., talk about cutting off the end of a boy's tongue or making him leave home, etc. But there is hardly any need of multiplying incidents; all the reports re-enforce the lesson which moralists of pretty much all schools have agreed in teaching—that the appeal to fear as such is morally harmful. Of course, there are a number of cases where good results are said to have come from punishment, but in such cases the punishment was incidental, not the one important thing; it was the emphasis added to an explanation.

3. Some report that they were instructed to do right "because it is right," either as the sole reason or in connection with other motives, such as harm to one's character, or displeasing God or parents. A little more than one-tenth of the persons report this as a leading motive instilled. Most simply mention the fact, with no comment as to the impression made upon them. One remembers displeasing her mother (after she had been told that she must do right because it was right) by asking why she must do what was right rather than what was wrong. On the whole, she was confused, and the basis of morality seemed to be arbitrary authority.

4. Such answers as the following are exceedingly common: "I saw by mother's face that I had grieved her"; "was made to feel that I had shocked and pained my parents"; "the motive appealed to was giving pain to my parents, who loved me"; "I felt ashamed when I found I had grieved my father"; "was made to feel sorry when my parents were made unhappy by what I did," etc. There is a paucity

of information about the attitude toward morality left by this mode of treatment. The following, indeed, is the only comment made in any of the reports: "Upon disobeying my mother I was told that I was naughty and bad, and that she would not love me unless I was sorry and promised not to disobey again. This impressed me with the necessity of obeying, but I did not see then, and can not now, any reason for it."

5. We come now to the religious motive as the ground for right doing. There are different kinds of answers here—appeals to fear and love, to Bible teachings and Bible warnings, to terror of an avenging God, and to the wounded affection of a personal friend and Saviour; sometimes one and sometimes a mixture of all. Certain of the practical ones among the parents used, indeed, not only all these appeals, but pretty much all the foregoing mentioned as well, evidently on the principle that it is not possible to use too many inducements toward morality, and that if one fails another may hold. I shall give one or two typical quotations illustrating each method. First, of fear: "My mother told me, 'You must tell the truth, for God knows all about it, for He is continually watching you, and I certainly shall find out all about it.' This caused great fear; we thought of God as a powerful avenger, and also believed that he communicated with our parents about our faults." Three or four mention that the story of Ananias and Sapphira was used with considerable effect. Second, of Biblical authority: "I was taught that the Bible said that these things were right and wrong, and that it must be so. I can not remember a time when I did not think that it was wrong to break any of the ten commandments, because they had been given by God in the Bible." "When I asked the reason why I should not do certain things, I was told that it was because they were forbidden in the Bible." Third, of love: "I was taught that Jesus looked upon me just as my parents did; that He was pleased when I did right, and grieved when I did wrong, and that He had done so much for me that I ought to be sorry to grieve Him." "I was taught that wrong acts grieved our Lord, and that He knew about them even if no one else did; also that He was pleased when I did any little act of kindness to any one." Fourth, mixed cases: "I was brought up in a distinctly Christian home. I was made to feel that certain things were right and their opposites wrong; was taught that there is a God who sees and knows everything that I do; that He looked upon disobedience with an eye of displeasure; the Bible was taught from early infancy as a text-book of morals; I was made to feel that not only would punishment result from wrongdoing but that both God and my parents were hurt by my wrong-doing. The impression left on my mind was that certain things were right and that God was the standard; at first fear, awe, and reverence were induced, with occasional feelings of rebellion; the general effect was to awaken respect for the right qualities, and to make me consider the right and wrong of things in my own consciousness." "After the first lie which I remember, I was not punished, but was given a lecture on the words in the Revelation: 'Without are . . . whosoever loveth and maketh a lie.' I was made to see that the habit would grow and dishonor me in the sight of God and man, and left with the promise of a good whipping if I ever told another. In general I remember that I was taught that my faults had the peculiarity of increasing at an astonishing rate; that I was a very naughty child, and that every wrong act grieved a heavenly Father who loved me and who was ever present to see both the good and the bad." "After lying I was told that I got no good from it; that teachers and friends disliked such persons; that my honest playmates would look down on me; that God was grieved with me. The room was filled with the splendor of the setting sun, and it seemed to me that God must be up there looking at me and seeing what a naughty girl I was.

Then I was told that God would forgive me if only I confessed, and that in the future He would help me to be good if only I tried."

I am not afraid that any one will despise these incidents as trivial. It is easy, indeed, to recall our own childhood, to look out at what is now around us, and say that there is nothing new here; that all this is commonplace, and just what anyone would expect. Precisely; and in that consists its value. It all simply brings out the most familiar kind of facts, but still facts to which we shut our eyes, or else ordinarily dismiss as of no particular importance, while in reality they present considerations which are of deeper import than any other one thing which can engage attention. Every one will admit without dispute that the question of the moral attitude and tendencies induced in youth by the motives for conduct habitually brought to bear is the ultimate question in all education whatever—will admit it with a readiness and cheerfulness which imply that anyone who even raises the question has a taste for moral truisms. Yet, as matter of fact, moral education is the most haphazard of all things; it is assumed that the knowledge of the right reasons to be instilled and knowledge of the methods to be used in instilling these reasons "come by nature," as reading and writing came to Dogberry.

## Science.

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

### A COURSE IN PRIMARY BOTANY.

A CORRESPONDENT asks for the best plan to follow in taking up the work required for the Primary Examination in Botany. There are many such plans. Every earnest Science teacher has one which specially suits his capabilities and surroundings. The following outline course is offered, not as the "best," but as one which may be suggestive.

#### Study actual plants.

During the early fall months there are still many plants, in flower. Take up a number of these plants with descriptions of the roots, stem, leaf, inflorescence and flower. Keep a list of all technical terms introduced in the description. Have drawings made of the various parts, their arrangement and relative positions. These drawings may be used in the later months for comparative work and teaching the principles of classification. The technical terms may be used for drill work by requiring students to illustrate on the blackboard and describe in words a raceme, a fibrous root, a palmately net veined leaf, etc., if these terms have been used in the previous descriptive work.

During the early fall, the students may be required to make a collection of leaves, fastening the leaf well pressed on a page of the note book, leaving the opposite page blank for drawing and description. This may be done during the winter months. A collection of fruits may also be made. A very good plan is to enumerate a dozen which should be gathered: for example, the camara of the maple, beech-nut, poppy, willow herb, evening primrose, wild mustard, etc. The apple, pear, grape, are always obtainable.

A practical study of these will lead to a discussion of the method of formation of the fruit, pollination and fertilization.

During the winter months also, the students may be allowed to see microscopical preparations of various parts of the plant, pollen, stoma, epidermis, cross section of stems, showing the general cellular structure of all parts of the plant.

If this does not occupy all the time until spring, a few lessons may be given in the identification of plants, using the descriptions and drawings of those made during the fall term.

As soon as spring opens, field work begins and representatives of the prescribed orders are studied and identified, the characters of the various orders learned, and the general principles of classification reviewed and further illustrated.

A very good plan, pursued in some places, is to require every Primary candidate to mount and properly classify fifty or twenty-five wild plants.

This plan, of course, may be varied according

to facilities and surroundings. Where possible plants may be obtained from florists for winter study, or seeds may be planted and the process of germination studied.

### SENIOR LEAVING PHYSICS.

SINCE the re-introduction of Physics to the Science option of the Senior Leaving Examination, two years ago, there has been yearly dissatisfaction manifested during the July examination. The cause of this is not far to seek. While the courses in Mathematics, English, and the Language Options, are clearly defined, that in Senior Physics extends from the defined *experimental* course of the Senior Leaving Examination *ad infinitum*. What a luxury for an examiner! No hampering restrictions; he can revel at ease and pluck candidates by the score, from his invisible perch. If, in his wanderings through the illimitable regions assigned, he cannot chance to light upon suitable questions which would test an experimental knowledge of the subject, he may take the first thing that comes to hand, whether mathematical or metaphysical, and feel equally sure of keeping within the Departmental bounds. The Junior Leaving course is designed to be largely experimental, hence the lavish outlay upon physical laboratories and apparatus. But somehow the examiner construes the word *experimental* to mean mathematical, when he comes to prepare a Senior Leaving paper. Before censuring the examiner, Science teachers should know whether the course is to be experimental or mathematical, and in either case the work should be rigidly and clearly defined. Having caused large expenditure to be made by every High School Board for apparatus and laboratory room, the Department should say whether this is to be used or to be merely ornamental. If the latter, then Physics should be added to the mathematical branches, to satisfy those who believe that the decline and fall of the mathematical monarchy is at hand. Many Science teachers, to whom this subject is generally relegated, know from sad experience that students can be trained to work intricate physical conundrums of a mathematical type, who cannot join up three voltaic cells in series, or practically determine the specific heat of a given metal.

### NOTES ON THE BUTTERFLY.

(FROM SCUDDER.)

THE life of the butterfly begins with the egg, which is usually hatched into the caterpillar within a few days after being laid. The eggs of butterflies are very various in sculpture, and though often simple are in other cases exquisitely ornamented. They are usually broad and flat at the base and more or less rounded above. One class may, in general, be called barrel-shaped; but this would include minor divisions such as thimble, loaf-sugar, flask, acorn, or even fusiform; there are globular, or hemispherical or tiarate. The surface may be more or less deeply pitted, or delicately reticulate, or broken up by vertical ribs connected by raised cross lines or may be perfectly smooth and uniform; but all have a collection of microscopic cells at the centre of the summit, perforated by little pores, forming the micropyle through which the egg is fertilized, and these microscopic parts are often of exceeding beauty. The eggs are always laid in full view, excepting in a few instances they are partially concealed by being thrust into crevices. Ordinarily they are laid upon the surface of the leaves of the caterpillar's food plant and usually near the tenderer growing leaves. The majority of the eggs are deposited singly, but in some instances in clusters. When laid in clusters the caterpillars are more or less social, while those laid singly produce solitary caterpillars. In some cases the eggs do not develop until the succeeding year, in which case they are almost invariably laid beneath some leaf scar for winter protection.

When the egg hatches into the caterpillar, its first act is to voraciously devour the shell from which it has come and then it goes on with life for some time, its sole duty being to eat and escape being eaten.

It grows so fast that it outgrows its skin several times and is obliged to moult before it is full grown. On each of these occasions it stops feeding for a time, spins a carpet of silk, and fastens its claws therein, the old skin splits along the middle of the back of the thoracic segments, by violent muscular efforts the old

head case is shaken off, and the creature crawls out of its old skin, which in many cases it thereupon devours. Caterpillars live exposed, or secure shelter either by constructing nests or entering some part of a growing plant which encloses them, e.g. the apple. Sometimes they pass the winter in this state, or in nests specially constructed for hibernation.

The last stage of development is the chrysalis, into which the caterpillar enters after its last moult. In this state the creature is a sort of mummy, all the appendages, both of head and thorax, folded over upon the breast, packed closely and tightly glued, extending usually to the fourth abdominal segment. The chrysalis stage may be considered its final moult. The chrysalis is usually hung by either the tail or a girth around the middle. Cocoons of vegetable material, leaves, blades of grass, etc., are sometimes made, in which the chrysalis rests. In the chrysalis stage usually ten days to a fortnight is passed; but a considerable number pass the winter in this condition.

(To be Continued).

## Mathematics.

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

### PRIMARY ALGEBRA.—1894.

(FOR QUESTIONS SEE LAST NUMBER.)

#### Hints and Answers.

- (a)  $x^8 + x^4y^4 + y^8$ . (b)  $ax^4 - bx^2 + c$ .
- (a)  $a^2 + 2a(b+c) + (b+c)^2$ , substitute  $b+c$  for  $b$ .  
(b)  $x^3 - y^3 = (x-y)(x^2 + xy + y^2)$   
 $= (x-y)[(x-y)^2 + 3xy]$   
 $= \frac{1}{3}(4^3 - 1^3) = 46\frac{2}{3}$ .
- (a)  $(x+3)(2x+3) = (x+1)(2x+1) + 14$ ;  $x = 1$ .  
(b)  $x = a+b$ .
- Let  $D$  be the distance  
 $\frac{2D}{4} = \frac{D}{3} + \frac{D}{5} - \frac{1}{6}$ ;  $D = 5$  miles.
- (a)  $(px-1)(qx^2+px-1)$ ;  $(2x-3y+1)(3x+5y-7)$ .  
(b) Each =  $m^4 + 2m^2n^2 + n^4$ .  
If the square of the difference between the squares of two quantities be augmented by the square of twice the product of the two quantities, the sum is equal to the square of the sum of their squares.
- (a)  $1-2+5-4+3 = A$   
 $2-1+6+2+3 = B$   
 $1+1+1+6 = A-B = C$   
 $2-4+10-8+6 = 2A$   
 $3-4+10-3 = B-2A = D$   
 $3+3+3+18 = 3C$   
 $7 \mid 7-7+21$   
 $1-1+3 = E$   
 $x^2-x+3 = H. C. F.$   
(b) The numerator of the sum is  
 $(b+c-a)(c-b) + (c+a-b)(a-c)$   
 $+ (a+b-c)(b-a) = 0$   
 $\therefore$  sum of fractions = 0.

### JUNIOR LEAVING ALGEBRA.

- (a) Solve  $\frac{2x-3}{2x+1} + \frac{3x-7}{3x+5} = 2$ .  
Equation equals on dividing  
 $1 - \frac{4}{2x+1} + 1 - \frac{12}{3x+5} = 2$ .  
or  $\frac{1}{2x+1} + \frac{3}{3x+5} = 0$   
or  $3x+5+6x+3 = 0$ ;  
 $9x = -8 \therefore x = -\frac{8}{9}$   
(b) Solve  $\frac{1}{x-2} + \frac{1}{x-3} + \frac{1}{x-4} = 0$ .  
Expanding  
 $(x-3)(x-4) + (x-2)(x-4) + (x-2)(x-3) = 0$ ,  
or  $x^2 - 7x + 12 + x^2 - 6x + 8 + x^2 - 5x + 6 = 0$ ,  
or  $3x^2 - 18x + 26 = 0$ .

$$\therefore x = \frac{18 \pm \sqrt{324 - 312}}{6} = \frac{18 \pm 2\sqrt{3}}{6} = \frac{9 \pm \sqrt{3}}{3}$$

- (a) Solve  $\frac{2}{x} + \frac{3}{y} = 17$ , (1)  
 $\frac{5}{x} + \frac{2}{y} = 12$ . (2)

Multiply (1) by 5 and (2) by 2 to eliminate  $x$ .

$$\therefore \frac{10}{x} + \frac{15}{y} = 85, \quad (3)$$

$$\frac{10}{x} + \frac{4}{y} = 12. \quad (4)$$

Subtract (4) from (3), we have

$$\frac{11}{y} = 77 \therefore y = \frac{1}{7}$$

When  $y = \frac{1}{7}$   $\frac{2}{x} + 21 = 17 \therefore x = -2$ .

- (b) If  $6x^2 - 17xy + 12y^2 = 0$ .  
 $\therefore$  by factoring  $(3x-4y)(2x-3y) = 0$ ,  
or  $x = \frac{4}{3}y$  or  $x = \frac{3}{2}y$ .  
 $\therefore x : y = 4 : 3$ ,  
or  $x : y = 3 : 2$ .

B. 3. (a) Let  $x$  miles = distance, let  $y$  miles an hour = rate.  $\therefore \frac{x}{y}$  hrs. = time.

$$(1) \frac{x}{y+5} = \frac{4x}{5y} \therefore -\frac{1}{y+5} = \frac{4}{5y} \therefore y = 20.$$

$$(2) \frac{x}{y-5} = \frac{x}{y} + \frac{5}{2}$$

If  $y = 20$ , substitute this value in (2).

$$\therefore \frac{x}{15} = \frac{x}{20} + \frac{5}{2}; \therefore x = 150.$$

$\therefore$  Distance = 150 miles;  
Rate = 20 miles an hour.

- If  $ax+by+cz = 0$ , (1)  
And  $bx+cy+az = 0$ , (2)  
Show that

$$x : y : z = ab - c^2 : bc - a^2 : ca - b^2$$

or that  $\frac{x}{ab - c^2} = \frac{y}{bc - a^2} = \frac{z}{ca - b^2}$

Eliminate  $x$  from (1) and (2).

$$\therefore abx + b^2y + bc^2z = 0$$

$$abx + acy + a^2z = 0$$

$$\therefore y(b^2 - ac) = z(a^2 - bc)$$

$$\text{or } y(ac - b^2) = z(bc - a^2)$$

$$\therefore \frac{y}{bc - a^2} = \frac{z}{ac - b^2}$$

Eliminate  $y$  from (1) and (2).

$$\therefore acx + bcy + c^2z = 0$$

$$b^2x + bcy + abz = 0$$

$$\therefore x(ac - b^2) = z(ab - c^2)$$

$$\therefore \frac{x}{ab - c^2} = \frac{z}{ac - b^2}$$

$$\therefore \frac{x}{ab - c^2} = \frac{y}{bc - a^2} = \frac{z}{ac - b^2}$$

- (a) If  $m$  and  $n$  are the roots of  $ax^2 + 2bx + c = 0$

or of the equation,  $x^2 + \frac{2b}{a}x + \frac{c}{a} = 0$ .

The sum of the roots is always equal to the coefficient of  $x$  with sign changed, and the product of the roots equals the absolute term.

$$\therefore m+n = -\frac{2b}{a} \therefore m^2 + 2mn + n^2 = \frac{4b^2}{a}$$

$$\text{and } mn = \frac{c}{a} \therefore 3mn = \frac{3c}{a}$$

$$\text{and } m^3 + n^3 = (m+n)(m^2 - mn + n^2)$$

$$= (m+n)(m^2 + 2mn + n^2 - 3mn)$$

$$= \left(-\frac{2b}{a}\right)\left(\frac{4b^2}{a^2} - \frac{3c}{a}\right)$$

$$= \frac{-2b(4b^2 - 3ac)}{a^2} = \frac{6abc - 8b^3}{a^3}$$

- (b) Equation =  $x^2 - 11x - 17 = 0$ .

Its roots =  $\frac{11 \pm \sqrt{189}}{2}$

Roots of new equation =  $\frac{11 + \sqrt{189}}{2} + 2$

and  $\frac{11 - \sqrt{189}}{2} + 2 = \frac{15 \pm \sqrt{189}}{2}$ .

Sum of its roots = 15.

Product of its roots =  $\frac{225 - 189}{4} = 9$ .

$\therefore$  Equation =  $x^2 - 15x + 9$ .

- (c)  $10 + 2\sqrt{21} = 10 + 2\sqrt{7 \times 3}$   
 $= 7 + 3 + 2\sqrt{7 \times 3}$ .

$$\therefore \sqrt{10 + 2\sqrt{7 \times 3}} = \sqrt{7} + \sqrt{3}$$

If we let  $7 = a^2$  and  $3 = b^2$

$$\therefore \text{Exp.} = a^2 + b^2 + 2ab = (a+b)^2 = (\sqrt{7} + \sqrt{3})^2$$

$$\therefore \text{sq. root} = \sqrt{7} + \sqrt{3}$$

6. This question is merely book-work.

- (a) Factor  $a^4 + 4b^4$ .

$$\text{Exp.} = (a^4 + 4a^2b^2 + 4b^4) - 4a^2b^2$$

$$= (a^2 + 2b^2)^2 - 4a^2b^2$$

$$= (a^2 + 2b^2 - 2ab)(a^2 + 2b^2 + 2ab)$$

Factor  $a^3 + b^3 + c^3 - 3abc$ .

$$\text{Expn.} = (a+b)^3 + c^3 - 3ab^2 - 3a^2b - 3abc$$

$$= [(a+b)^3 + c^3] - 3ab(a+b+c)$$

$$= [(a+b+c)(a+b)^2 - (a+b)(c+c^2) - 3ab(a+b+c)]$$

$$= (a+b+c)[a^2 + 2ab + b^2 - ac - bc + c^2 - 3ab]$$

$$= (a+b+c)(a^2 + b^2 + c^2 - ab - bc - ca)$$

Factor  $(1+y)^2 - 2x^2(1+y^2) + x^4(1-y)^2$ .

$$\text{Expn.} = [(1+y)^2 - 2x^2(1+y^2 - 2y^2) + x^4(1-y)^2] - 4x^2y^2$$

$$= [(1+y)^2 - 2x^2(1-y)(1+y) + x^4(1-y)^2] - 4x^2y^2$$

$$= [(1+y) - x^2(1-y)]^2 - 4x^2y^2$$

$$= (1+y-x^2+x^2y-2xy)(1+y-x^2+x^2y+2xy)$$

- (b) If  $s = \frac{a+b+c}{2}$ , show that

$$(s-b)(s-c) + (s-c)(s-a) + (s-a)(s-b)$$

$$= s^2 - \frac{a^2 + b^2 + c^2}{2}$$

Left hand side of expn.

$$= s^2 - bs - cs + bc + s^2 + as - cs + ac + s^2 - as - bs + ab$$

$$= 3s^2 - 2s(a+b+c) - ab + bc + ca$$

$$= ab + bc + ca - s^2, \text{ since } (a+b+c) = 2s$$

Right hand side of expn.

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

$$= \frac{\left(\frac{a+b+c}{2}\right)(a+b+c) - a^2 - b^2 - c^2}{2}$$

$$= \frac{-a^2 + b^2 + c^2 + 2ab + 2bc + 2ca - 2a^2 - 2b^2 - 2c^2}{4}$$

$$= \frac{-a^2 - b^2 - c^2 + 2ab + 2bc + 2ca}{4}$$

$$= -\left(\frac{a+b+c}{2}\right)^2 + ab + bc + ca = ab + bc + ca - s^2$$

- (a)

$$\begin{array}{r} x^4 + 4x^3y + 10x^2y^2 + 12xy^3 + 9y^4 \\ \underline{4x^3y + 10x^2y^2} \\ 4x^2y^2 + 12xy^3 + 9y^4 \\ \underline{4x^2y^2 + 12xy^3} \\ 6x^2y^2 + 12xy^3 + 9y^4 \\ \underline{6x^2y^2 + 12xy^3} \\ 9y^4 \end{array}$$

Required root =  $x^2 + 2xy + 3y^2$ .

8. (b) Bookwork. If two expressions have a common factor that factor will be a factor of their difference.

C. 9. (a) Solve  $x^2 - 7xy + 11y^2 = 179$  (1)  
 $2x - y = 1$  (2)

From (2)  $y = 2x - 1$ .  
 Substitute this value for  $y$  in (1).  
 $\therefore x^2 - 7x(2x - 1) + 11(2x - 1)^2 = 179$ .  
 $x^2 - 14x^2 + 7x + 44x^2 - 44x + 11 = 179$ .  
 $31x^2 - 37x - 168 = 0$ .  
 or  $(31x + 56)(x - 3) = 0$   
 $x = 3$  or  $-\frac{56}{31}$ .

9. (b) Solve  $\frac{x-b}{x-a} - \frac{x-a}{x-b} = \frac{2(a-b)}{x-a-b}$   
 or  $\frac{(a-b)(2x-a-b)}{(x-a)(x-b)} = \frac{2(a-b)}{x-a-b}$

Divide by  $a-b$ .  
 $\therefore \frac{2x-a-b}{(x-a)(x-b)} = \frac{2}{x-a-b}$   
 or  $2x^2 - ax - bx - 2ax + a^2 + ab - 2bx + ab + b^2$   
 $= 2x^2 - 2bx - 2ax + 2ab$ ,  
 or  $-ax - bx + a^2 + b^2 = 0$ ,  
 $\therefore x = \frac{a^2 + b^2}{a+b}$

10. (a) Simplify,  
 $\frac{a^3}{(a-b)(a-c)} + \frac{b^3}{(b-c)(b-a)} + \frac{c^3}{(c-a)(c-b)}$   
 Expression  
 $= \frac{-a^3}{(a-b)(c-a)} - \frac{b^3}{(b-c)(a-b)} - \frac{c^3}{(c-a)(b-c)}$   
 $= \frac{-a^3(b-c) - b^3(c-a) - c^3(a-b)}{(a-b)(b-c)(c-a)}$   
 $= \frac{(a-b)(b-c)(c-a)(a+b+c)}{(a-b)(b-c)(c-a)}$  by factoring numr.  
 $= a+b+c$ .

10. (b) Let  $x$  and  $y$  be the sides of the rectangle.

Then its area  $= xy$ .  
 Its diagonal  $= \sqrt{x^2 + y^2}$ .  
 Area of the square on its diagonal  
 $= (\sqrt{x^2 + y^2})^2 = x^2 + y^2$ .  
 $\therefore xy : (\sqrt{x^2 + y^2})^2 = 60 : 169$ .  
 $\therefore (\sqrt{x^2 + y^2})^2 = 169$  and  $xy = 60$ .  
 Since 169 is a square  $x^2 + y^2 = 169$ .  
 $xy = 60$ .  
 $\therefore (x^2 + y^2 + 2xy) = 289$ .  
 $x^2 + y^2 + 2xy = 289$ .  
 $(x+y)^2 = 289, \therefore x+y = 17$ .  
 $(x-y)^2 = 49, \therefore x-y = 7$ .  
 $\therefore x = 12$  and  $y = 5$ .  
 Ratio of sides  $= 12 : 5$ .

MENTAL ARITHMETIC.

This subject is generally not well taught in many schools and, I think that this is due to the poor, thoughtless way in which the candidates for teaching are taught the subject. The first smart boy or girl that gets the answer is allowed to hold up his hand, and if two or three in the class get the right answer this is considered sufficient and the others give up trying when they see the hands up of those near them. The teacher should give out the problem slowly and distinctly, and but once, and the class should be required to solve it *mentally* and in *perfect silence* and without giving any sign or signal when they are ready to answer. After a space of time sufficient for the solution of the problem has elapsed, the teacher gives a signal upon which those who have completed the process raise the hand. One of these is required to give the result. The teacher then ascertains how many agree with it, and calls upon some one to repeat the problem, solve and analyze it for the class. Then other problems are proceeded with in the same manner. In order to secure the attention of the whole class, no intimation, by word or glance should be given as to the member of the class to be called upon for an answer or solution, so that every one considering himself liable to be selected for that purpose, shall concentrate his mind upon the question. — From report of John Johnston, Esq., I.P.S. for South Hastings.

Primary Department.

SIGHT READING.

RHODA LEE.

SIGHT reading is a good thing of which we can scarcely have too much. We can fill up the odd minutes very profitably with it. Frequently when waiting for dismissal we have "guessing games," which are in reality exercises in thought-getting. For instance, I write on the blackboard, "I am round and I bounce," or, "I have a fur coat and I catch mice." The children read and give the answer, "a ball," "a mouse."

In another exercise I write questions such as, "What sort of day is this?" or, "What did you see on your way to school?" After allowing the necessary time, call on as many children as possible to whisper the answer. Other questions might be: "Where are you?" "Where do you live?" "What are you going to do after school?" "How old are you?" "How many brothers and sisters have you?" etc., etc.

Still another and the favorite exercise is one in which a request or command is written on the blackboard. At a certain signal those involved in the action respond, the others looking on to see that the interpretation is correct. The command may be one upon which the entire class will act such as "stand up," "clap hands," "laugh," "raise hands over the head," "shake hands with your seat mate," "sing 'God save the Queen,'" or it may involve one or two only, as: "Clara, change seats with Bertie," "John R— may show Fred what he has on his slate," or, "Will Henry be kind enough to close the door."

Of course our work in language supplies us with material for sight-reading. After reading or relating some simple story, by careful questioning draw out facts to cover the narrative connectedly, place them on the blackboard as received and cover with the curtain until an opportunity for sight-reading occurs. The following, done by the children of Cork County Normal School, is an excellent example of work of this kind. It is one of the exercises found in the envelopes, which on receipt of the sum of twenty-five cents, addressed to Englewood, Illinois, will be sent to any teacher or person interested in the work of the school.

The package contains samples of work done in certain lines in the school and cannot fail to be very suggestive and helpful, especially to primary teachers:

LITERATURE FOR THE LITTLE ONES.

Let the teacher read to first or second year children portions of Hiawatha. At the close of each reading, let the children tell the story, so far as covered. From the children's account cull such sentences as the following (taken from the C. C. N. S. Envelope), for B. B. reading. Afterwards, let the sentences be copied for a writing exercise.

HIAWATHA.

I.

ONCE there was a little Indian boy.  
 His name was Hiawatha.  
 O, how brown he was!  
 He had great black eyes.  
 His hair was long and black.

Old Nokomis loved this baby.  
 Old Nokomis was his grandmother.  
 She made him a little bark cradle.  
 She lined it with fine soft moss.  
 She sung him songs.  
 She told him stories.  
 She told him about the moon and the stars.  
 She told him about the rainbow, too,  
 What else did she tell him?

II.

Hiawatha lived in the forest.  
 He lived in a wigwam.  
 The wigwam stood by the water.  
 Hiawatha loved the great tall pine trees.  
 He loved the water, too.  
 He knew all the birds in the forest.  
 He called them "Hiawatha's chickens,"  
 He knew the beaver, the squirrel, and the rabbit.  
 He called them "Hiawatha's Brothers."  
 All the trees loved Hiawatha.

III.

Iago made Hiawatha a bow and arrows.  
 He made the bow of ash.  
 He made the arrows of oak.  
 He made the cord of deer skin.  
 The arrow points were flint.  
 He winged the arrows with feathers.  
 Hiawatha went into the forest with his bow and arrows.  
 He shot a red deer.  
 He brought it home.  
 Old Nokomis made a deer-skin coat for Hiawatha.  
 She made a great dinner of deer meat.

IV.

Hiawatha wanted a canoe.  
 He asked all the trees to help him.  
 So the birch tree gave his bark.  
 The cedar gave his branches.  
 The larch gave his roots.  
 The pine-tree gave its gum.  
 The hedge-hog gave its quills.  
 Hiawatha colored these quills red, blue, and yellow.  
 He colored them with berry juice.  
 When his canoe was finished he put it on the lake.  
 It sailed like a leaf on the water.  
 O, how happy Hiawatha was!

—Primary School.

FOR OPENING EXERCISES.

BY LOUISA M. ALCOTT.

SUBJECT, THE CATTLE TRAIN.

"Blessed are the merciful, for they shall obtain mercy."

"SOMEWHERE above Fitchburg, as we stopped for twenty minutes at a station, I amused myself by looking out of a window, at a waterfall which came tumbling over the rocks and spread into a wide pool that flowed up to the railway. Close by stood a cattle train, and the mournful sounds that came from it touched my heart.

"Full in the hot sun stood the cars, and every crevice of room between the bars across the doorways was filled with pathetic noses, snuffing eagerly at the sultry gusts that blew by, with now and then a fresher breath from the pool that lay dimpling before them. How they must have suffered, in sight of water, with the cool dash of the fall tantalizing them, and not a drop to wet their poor, parched throats!

"The cattle lowed dismally and the sheep tumbled one over the other in their frantic attempts to reach the blessed air, bleating so plaintively the while that I was tempted to get out and see what I could do for them. But the time was nearly up, and while I hesitated two little girls appeared and did the kind deed better than I could have done it.

"I could not hear what they said, but as they worked away so heartily their little tanned faces grew lovely to me, in spite

of their old hats, their bare feet, and their shabby gowns. One pulled off her apron, spread it on the grass, and, emptying upon it the berries from her pail, ran to the pool and returned with it dripping to hold it up to the suffering sheep, who stretched their hot tongues gratefully to meet it, and lapped the precious water with an eagerness that made little barefoot's task a hard one.

"But to and fro she ran, never tired, though the small pail was so soon empty, and her friend meanwhile pulled great handfuls of clover and grass for the cows, and, having no pail, filled her 'picking dish' with water to throw on the poor dusty noses appealing to her through the bars. I wish I could have told those tender-hearted children how beautifully their compassion made that hot, noisy place, and what a sweet picture I took away with me of two little sisters of charity."—*Selected.*

#### IF A BODY FINDS A LESSON.

*Tune: "Coming Thro' the Rye."*

If a body finds a lesson  
Rather hard and dry,  
If nobody comes to show him,  
Need a body cry?  
If he's little time to study  
Should he stop and sigh?  
Ere he says: "I cannot get it."  
Ought he not to try?

If a body scans a lesson  
With a steady eye,  
All its hardness he will conquer,—  
Conquer bye and bye.  
Then how neatly he'll recite it,  
Face not all awry.  
Ne'er again he'll say: "I cannot!"  
But will go and try.

#### POLITENESS.

THERE'S a house called "Politeness," not far away,

That's older than you or I;  
And the only way to enter that house  
Is to open the door called—"Try."

It's a heavy door, but there is a way  
To make it open wide;  
And I've often seen "Yes" and "No, ma'am"  
Enter the house side by side,

"I thank you sir," and "If you please,"  
Can open it with a touch;  
But it often closes tight on "I won't;"  
There is no room for such.

"Excuse me," "What, sir," "You're welcome,"  
too,

Go in and out every day.  
Do you think this door will open for us?  
We'll try this easy way.

—*Anon.*

#### THE DEAD PUSSY CAT.

You's as stiff an' as cold as a stone,  
Little cat!

Dey's done frowed you out and left you alone,  
Little cat!

I'se a strokin' your fur,  
But you don't never purr,  
Nor hump up anywhere,  
Little cat—  
Why is dat?

Is you's purrin' and humpin' up done?

An' w'y for is your little foot tied,  
Little cat?

Did dey pisen you's tumnick inside,  
Little cat?

Did dey pound you wif bricks,  
Or wif big nasty sticks,  
Or abuse you wif kicks,  
Little cat?  
Tell me dat,

Did dey holler whenever you cwied?

Did it hurt werry bad w'en you died,  
Little cat?

Oh! why didn't you wun off an' hide,  
Little cat?

I is wet in my eyes—  
'Cause I almost always cwies  
When a pussy cat dies,  
Little cat,  
Tink of dat—  
An' I's awfully solly besides!

Dest lay still dere on de soft grown,  
Little cat,  
Wile I tucks de gween gwass all awoun,  
Little cat.

Dey can't hurt you no more  
W'en you's tired an' sore—  
Dest sleep twiet, you pore

Little cat,  
Wif a pat,  
And forget all de kicks of de town.

—*Anon.*

#### THE FIVE LITTLE SHEEP.

FOR SMALLEST CHILDREN.

Five little sheep stood under a tree.  
The first one said, "Come, follow me."  
The second one said, "Let's keep in line."  
The third one said, "That will be fine!"  
The fourth one said, "We're coming fast."  
The fifth one said, "I am the last."  
So after their leader they ran, until  
They came to the fence, where they all stood  
still

(This may be used as finger play. One hand held vertically, with the fingers spread, will represent the tree; the fingers of the other hand represent the sheep standing below. As each sheep is mentioned one finger is raised from the table, until all five are up. During the last two lines the first hand represents the fence, by resting on one side and little finger. Then let the sheep scamper across the table until they come to the fence—"where they all stand still.")—*Primary Educator.*

### School-Room Methods.

#### DIVIDING BY A FRACTION.

I HAD difficulty in teaching to divide by a fraction until I realized that the quotient is a modification of the dividend, just as a coat is a modified piece of cloth. Of course the pupil does not easily understand the words, "modified," and "modification."

I begin and divide 24 by 12, then by 6, then by 3. I call attention to the increase in the quotient as the divisor gets smaller. I take 36 in the same way, also 48, 64—and use as divisors, 32, 16, 8, 4, 2, 1. I impress the fact that as the divisor increases, the quotient decreases, and *vice versa*. I don't stop when they can repeat the words by the rule. I keep on until they can apply it. For example 24 is divided by 12. Now I say I shall divide it by  $\frac{1}{2}$  of 12, what will the quotient be? Don't divide, REASON. They will say, "It will be twice 2 or 4." Then I say I shall divide by a divisor  $\frac{1}{3}$  of that. They say the quotient will be 8.

Then I say, I will now divide by  $\frac{1}{3}$  of 3. They say the quotient will be 16." Let us see; one half of 3 is  $\frac{3}{2}$ . You say  $\frac{3}{2}$  will go 16 times. "Yes, sir." How many times will  $\frac{3}{4}$  go? "32 times." So it ought according to reason. I am going to see; 1 will go 24 times;  $\frac{1}{2}$  will go 96 times,  $\frac{1}{3}$  will go 32 times; you were right.

Is it a fact that the smaller a thing is, the more times it will go? "Yes, sir." Divide by 1 and tell me the size of the quotient compared with the dividend. "It is the same." Divide by  $\frac{1}{2}$ . "It will be twice the dividend." Divide by  $\frac{1}{4}$ . "It will be 4 times the dividend." Now divide by  $\frac{1}{3}$ . First by  $\frac{1}{4}$ . "The quotient will be 4 times the dividend."  $\frac{1}{3}$  will not go as many times as 1; It will go how many times? "One-third as many." Then  $\frac{1}{3}$  will go  $\frac{1}{3}$  of 4 times,  $\frac{1}{3}$  of 4 times is  $\frac{4}{3}$  times. (This is the dark place and must be illustrated.)

Let us see; take 24. I want to divide it by

$\frac{1}{3}$ ;  $\frac{1}{3}$  will go 96 times, I multiply by 4;  $\frac{1}{3}$  will go  $\frac{1}{3}$  of 96 times or 32 times; I divide by 3;  $24 \times 4 \div 3$  or  $24 \times \frac{4}{3}$ . To divide by  $\frac{1}{3}$ , I multiply by  $\frac{3}{1}$ . I have 12 cents and buy oranges at 1 cent each. How many? "Twelve." I buy at  $\frac{1}{2}$  cent each; how many? at  $\frac{1}{4}$  cent each; how many? "48." Do not say 48, say 4 times 12. At  $\frac{1}{3}$  cent each; how many? "4" of 4 times 12." And that is? "16." What has been done to the dividend. "It has been taken  $\frac{1}{3}$  of 4 times," or  $\frac{4}{3}$  times.

I have 8 cents to buy pencils, at 1 cent each. How many? "Eight." At  $\frac{1}{2}$  cent each? "Twice 8." At  $\frac{1}{4}$  cent each? "Four times 8." At  $\frac{1}{3}$  cent each? " $\frac{1}{3}$  of 4 times 8." How many more times will  $\frac{1}{3}$  go than  $\frac{1}{4}$ ? "Twice." Why? "Because it is half as large. I have 6 cents. How many pencils at 1 cent each? "6." At  $\frac{1}{2}$  cent each? "48." Yes, but what proportion? "8 times 6." How many at  $\frac{1}{3}$  cent each? " $\frac{1}{3}$  of 8 times 6" or  $\frac{8}{3}$  of 6.

The aim must not be to entrap the pupil into inverting the divisor; let him see that to divide by  $\frac{1}{3}$  the dividend must be made  $\frac{3}{1}$  larger—that is what is to be aimed at.—*J. E. D., N. Y. School Journal.*

#### A LESSON IN SPELLING.

Nouns ending in *y*.

*Singular.*

*Plural.*

1. decoy.
2. buoy.
3. bay.
4. toy.
5. boy.
6. day.
7. lady.
8. baby.
9. colony.
10. pony.
11. city.

Children volunteer to spell the plurals till the second column is completed. There will be some mistakes, of course, before the correct forms are found.

"What is the last letter of each word in the first column?"

"y."

"Do they all form their plurals alike?"

"No, ma'am."

"How many form them by the regular rule?"

"Six."

"What becomes of the *y* in the other four, when we write the plural?"

"It is changed to *i*."

"You have discovered that there are two ways of forming the plural of nouns ending in *y*. Mary may tell us about it."

"Let us look at the six words which form their plurals regularly. Is the *y* preceded by a vowel or a consonant?"

"By a vowel."

"Nouns ending in *y* preceded by a consonant—Who'll finish?"

"Form their plurals regularly."

"Susan may give the whole rule. Now let us look at the other words in our list. What precedes the *y*—a vowel or a consonant?"

"A consonant."

"And how are their plurals made?"

"By changing the *y* to an *i* and adding *es*."

"John may give the whole rule. Children take slates and write these words. Who will give a noun ending in *y* and preceded by a vowel?"

Pupils volunteer till a list of a dozen or more is made. Then a second list of nouns ending in *y*, preceded by a consonant, is made in the same way.

"Mabel may tell how she is going to make the plurals of the words in the first list.

Susie, tell us how to make the plurals in the second list."

Afterward the teacher dictates the following sentences:

1. The buoys mark the channel.
2. Ladies are always gentle.

3. The colonies rebelled against England.
  4. The Tories opposed the Revolution.
  5. All the countries of Europe are represented in America.
  6. Wooden ducks are used as decoys.
  7. The enemies of freedom should be opposed.
- After these are written the slates are passed, the correct sentences are placed on the board, and the pupils mark accordingly.

Each mis-spelled word is written correctly five times by the pupils who made the mistakes.—*C. A. P., in Popular Educator.*

## TRY THIS WITH PUPILS.

I SUGGEST the process of dividing directly by a mixed number, illustrated below, as a thing of some value for practical use, but worth more because of the insight into the ten-fold relation of units in our decimal system, which it will force upon the pupil's attention. A frequent problem in the reduction of denominate numbers, is the changing of yards to rods. The direction usually given to the student, is that he change to half yards, and then divide by 11. We suggest that he be asked to divide directly, as we will illustrate by three examples:

1.—How many rods in 2,345 yards?  
 $5\frac{1}{2}$  2,345  
 Explanation.—23 contains  $5\frac{1}{2}$ , 4 times with a remainder of 1; 14 contains  $5\frac{1}{2}$ , twice with a remainder of 3; 35 contains  $5\frac{1}{2}$ , 6 times with a remainder of 2. Hence the result as shown in the margin. But the work will not always run so smoothly as in this case. Let us take another example:

2. How many rods in 3,952 yards?  
 $5\frac{1}{2}$  3,952  
 Explanation.—39 contains  $5\frac{1}{2}$ , 7 times with a remainder of  $\frac{1}{2}$ , which is 5 of the next lower order. Hence the next dividend is  $5+5$ , or 10, the next quotient figure is 1, and the remainder is  $4\frac{1}{2}$ . What is the new dividend? Evidently it is  $45+2$ , or 47; this contains  $5\frac{1}{2}$  8 times, with a remainder of three.

3. How many rods in 1,678 yards?  
 $5\frac{1}{2}$  1,678  
 Explanation.—16 will contain the divisor but twice; 305 Rem.  $\frac{1}{2}$ . but 5 taken from the next lower order will make  $\frac{1}{2}$  in this order;  $16\frac{1}{2}$  contains  $5\frac{1}{2}$ , 3 times. The new dividend is 2 in place of 7, there is no quotient, and the next dividend is 28.

These examples give all the complications that can arise. Mixed numbers with other fractions than  $\frac{1}{2}$  may be used in a similar way; and it may be well to let the pupil see what he can do with them, as arithmetical gymnastics; but in the practical working of problems, nothing would be gained.—*E. C. H. in Public School Journal.*

## BUSY WORK IN NUMBERS.

(AFTER AN OBJECT LESSON ON THE INK-WELL.)

1. IF YOUR ink-well holds  $\frac{1}{4}$  of a pint of ink, how many pints will 24 ink-wells hold?
2. To write one book full you use half an ink-well full of ink; how many books can you write full with 18 ink-wells full of ink?
3. If it costs the maker 14 cents to make 7 ink-wells, how much does it cost him to make 14?
4. If a man can make 120 ink-wells in a day, how many can he make in the month of February, not working on Sundays?
5. The stationer charges you 14 cents for 2 ink-wells and he profits one cent on each; how much did they cost him?
6. Fanny paid 10 cents for her ink-well and Nellie paid thirty-three cents for three; who paid the higher price?
7. If it takes a quart bottle of ink to fill 40 ink-wells, how many pints will it take to fill 20 ink-wells?
8. If for 30 cents you can buy 5 ink-wells, how many can you buy for 90 cents?
9. What is the thickness of the rim of your ink-well? Of the sides? Of the bottom? What depth of ink will it hold? What is the width of the inside?
10. How many ink-wells such as yours could you stand side by side in a line one foot in length?

11. How many could you stand one upon another in a column a foot high?

12. How many could you arrange in a nine-inch square! How many trays does it take to hold ink-wells for this class? How many does each tray hold? How many more than we need does that provide?—*Wis. Jour. of Ed.*

## Hints and Helps.

### TEACHING THE CHILD TO TALK.

LANGUAGE is an art upon which largely depends a man's success in life. That it may be used to serve the base purposes of the hypocrite and the swindler as well as the lofty aim of the orator and preacher attests the fact that it is a powerful instrument given for man's use, and that it is the most obedient of servants. It still more strongly points to the fact that *what a man is determines what his language shall be.* Back of his speech stands his character, dictating in a manner too authoritative to be disobeyed. Language, no matter how artificial its characteristics, is the great index to individuality. Some writer has said that "five minutes conversation with a man gives one an arc long enough to discover his whole circle." Have you ever thought about the number of distinct facts you learn about a man by conversing with him for even a short time? His accent betrays his nationality, his grammatical expression tells what his education is, his emphasis shows his disposition, his choice of words explain his tastes, whether refined or plebeian, and the theme and tenor of his conversation express his aims and ambitions. Every word he utters is freighted with meanings for the person who is a good judge of human nature. The minister, the lawyer, the teacher, the man of business is anxious to converse with the person with whom he is to deal, before deciding upon the policy to pursue; and people in ordinary everyday associations are constantly listening for the *words* which other people use, and constantly storing up, often unconsciously, numberless expressions gained thereby.

Now the questions come to teachers, "Have we any control over the conditions governing child-speech? Can we secure to the child the *art* of language? Most assuredly we can, in numberless ways, if we have only caught the keynote of the art—if we only understand the few deep-set principles, and then with patient, unremitting care, enforce them every moment in the school day.

There comes a day when the child *knows* something and must have a means of expressing it. He has been a constant spectator of the household, has played with his toys, has watched out of the window and in hundreds of ways has been storing up an array of ideas. Then comes that moment which marks an epoch in the child's life—he *knows* that he *knows*. Then words come to him. He can hold his peace no longer. He talks from morning until night, making sentences for himself which tell what there is in his mind. He questions unceasingly and soon arrives at the last stage of the performance, the getting of knowledge for himself. He can tell you of things which no one has told him about, he has studied them out for himself.

Now the practical application for teachers is this: Give the child something to talk about and he will talk. Make him know a thing and he will tell you about it. If he cannot tell it he does not know it. How often when you have been trying to get a child to tell you something which you have taught him, he hesitates, uses poor English, and, then helplessly tells you he *knows* but he can't tell it. Accept no such apology as this. Lay no such tottering foundation for the child's education by encouraging him in the conviction that he cannot tell what he knows. Do not teach him that language is a poor crippled thing that cannot or will not obey our bidding. Impress upon him the fact that the fault is one of knowledge, not of language. Thus the child will gradually learn to concentrate his mental power upon the *strengthening* and *sharpening* of the idea in his mind rather than upon the telling of it. That will look out for itself.

In summing up, let us hold this law firmly in our minds, namely: Clear knowledge insures good expression. A lack of language implies a

lock of knowlekkge. This law embraces the foundation principle in the acquirement of good language and it is the law upon which mental trainers of to-day have based their work, and the one by which teachers of to-day are making thinkers and speakers of the rising generation. Analyze the workings of your own mind and test the law in every way you can devise; it will hold good in every instance.—*Educational Record.*

### TRUTHFULNESS BY EXAMPLE.

ACT the truth. Do not pretend to know things you do not know. Do not insist upon things about which you are uncertain. Even a child does not expect a teacher to be the embodiment of all wisdom. If she claims it, he knows she is masquerading; if she admits a doubt, he knows she is acting truly; he sees that he and his teacher have some things in common; she has a stronger hold upon him.

A boy handed up his written spelling lesson for correction. The teacher marked a word as incorrect, which he thought was spelled correctly. He gathered up his courage and told her he thought she had made a mistake. She brushed him aside with an indignant remark about doubting her ability to spell. In ten minutes he saw her engaged in profound communion with the dictionary. He gained confidence. She said nothing, but seemed dejected. He put his paper in his pocket and went home, and consulted his dictionary. He had spelled the word correctly. She had lost his good opinion forever. It was a serious loss, but who shall say that she did not pay the proper penalty for her act. She had made a mistake. It was not serious at the outset. It was a comparatively small matter that she had an erroneous impression about the spelling of the word. But persistence after she knew better was acting an untruth. It was utterly inexcusable. It was impolitic too. Suppose she had given him only what was his due and said, "My boy, I was hasty and wrong about that; you were right; I will have to be more careful next time." He would have been exultant, but that would not have humiliated her. She would have gained his respect and his friendship as well.

In another case, a teacher in this city told Mary, a young miss among her pupils, that Martha, her intimate girl friend, was headstrong and flighty and not doing well, and asked her to exert her influence over her and help her reclaim the wayward sister. The teacher told Martha the same things about Mary and exacted her help to recover the other sinner from destruction. Neither of the girls was in danger. The teacher did not think they were. She probably meant well enough. She intended to profit each girl by getting her interested in helping the other. But she did not think far enough or as truly as she ought. The girls compared notes. They discovered that there was an element of deception about the matter and the result was not particularly helpful to the teacher.

There is a mathematical accuracy about the truth. It always fits together. There is no safe compromise ground. The danger signal is upon the border line. Truth or untruth may be acted as well as spoken. It is not necessary at all times to tell all that is true. But whatever is said and whatever is done in the schools, is to be open and straightforward, wholly within the bounds of truth.—*A. S. Draper.*

### FEWER CHILDREN IN A ROOM.

It is obvious that the young woman with fifty-six pupils before her is attempting what no mortal can perform. I suppose it is practicable for one young woman to hear the lesson out of one book of all fifty children before her during the hours of the school session, and keep a certain amount of watch over the children who are not reciting their lessons, providing the grading is almost perfect, and we are going to be satisfied with "uniform" results. But the new teaching is of quite a different character. It requires alertness, vitality, and sympathetic enthusiasm. It is exhausting. Virtue goes out of the teacher at every moment. What is the possible remedy? To double the number of teachers would not be too much; for twenty-five or thirty pupils are quite enough for one teacher to grapple with. The individual requires teaching in these days, and no teaching is good which does not awaken interest in the pupil.—*President Eliot.*

## Book Notices, etc.

*Standard Electrical Dictionary*, by T. O'Connor Sloane, A.M., Ph. D.; published by Henley & Co., New York. Price \$3.

Mr. Sloane is the author of several works on electrical subjects which have found favorable reception among those who wish to take up the work in leisure hours. The present work is not altogether a dictionary nor so comprehensive as an encyclopedia. It is well illustrated (this in fact forms a very valuable part of the work) and the statement of principles is clear and concise. It touches everything of importance in the science, from both a theoretical and a mechanical standpoint. It has a very complete index, which materially lessens the difficulty of finding the explanation of terms which in this science have so many synonyms. Science teachers will find it of great assistance in throwing light upon many subjects which could be known only by having an extensive collection of works on electricity. It should be in every mechanics' institute. For editors and those interested in electrical pursuits no better investment could be made.

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*The Canadian Accountant*, by S. G. Beatty and J. W. Johnson, F. C. A.; published by Ontario Business College, Belleville, Ont.

This book is clearly described on the title page as "A Practical System of Book-keeping, containing a complete elucidation of the science of accounts, by the latest and most approved methods. Business Correspondence, Mercantile Forms, Banking, Insurance, and other valuable information designed for the use of Counting Houses, Business Colleges, Academies and High Schools." The fact that it is now in the tenth edition is a sufficient indication of the value and popularity of this work. The publishers inform us that "*The Canadian Accountant*," which, by the way, is the text-book used at the Provincial School of Pedagogy in Toronto, has now a wider demand than any other work on book-keeping and accounts published in the English language.

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*Practical Botany for Beginners*, by F. O. Bower, Professor of Botany, University of Glasgow. MacMillan & Co., publishers. Copp, Clark Co., Toronto.

An ideal text book for beginners in microscopical Botany. In the introductory chapters will be found a description of the process of making preparations. A few practical exercises in observation and use of the microscope, and the common micro-chemical reactions. Two appendices give directions for the preparation and use of re-agents and the distinctive tests for the various constituents of plant life. The main portion of the work is devoted to the practical study of type forms of herbaceous, arboreal and aquatic types of Dicotyledons and Monocotyledons. These are so taken up that the student can hardly fail to have a clear idea of the plants as wholes. Types of Gymnosperms, Clubmosses, Ferns, Mosses, Liverworts, Algæ, and Fungi are similarly treated. It contains illustrations only where these are really essential, a feature which cannot be too strongly recommended if pupils are to be taught to use their own eyes. For students and teachers of Senior Leaving Botany it is the text-book long awaited.

\* \*

*Elementary Science*. A teacher's hand book of a systematic course of object lessons, by Stephen Todd, Science Demonstrator to the London, (England), School Board. W. & R. Chambers, publishers.

The work taken up is divided into four Standards.

Standard I. deals with common objects, e.g., putty, iron, cloth, a match, etc., 34 in all.

Standard II. deals with common processes, melting, evaporation, measurement, and the instruments used.

Standard III. with the lenses and their use in the classification of matter.

Standard IV. deals with matter, its general properties and effects of heat, etc.

The plan adopted is experiment, question, answer. Much use can be made of this book by the teacher who is careful not to be too mechanical. The acquisition effects is subordinated to the development of mental training.

*Stories from Plato, and other Classic Writers*, by M. E. Burts. Ginn & Company, Boston, U.S.A.

*Grimm's Fairy Tales*, edited by Sara E. Wiltse. Ginn & Company, Boston, U.S.A.

The above two volumes are the latest to hand in the admirable series of "Classics for Children," which have been for some time past in course of publication by this enterprising firm. In the first, not only Plato, but Hesiod, Homer, Aristophanes, Ovid, Catullus, Pliny, and other classic writers are represented. Though the stories are necessarily a good deal modified, the kernel of the myth is generally pretty well preserved, and with the help of the suggestions offered, they may be made to serve an excellent purpose, both as supplementary reading and as bases for interesting and helpful talks.

The Fairy Tales have been put through a purifying and eliminating process which leaves nothing objectionable, and probably detracts little, if at all, from the fascination which such tales possess for the child-imagination.

## Literary Notes.

THE value of *Littell's Living Age* as an educator cannot be easily over-estimated. It certainly is not too much to say for it that it has, during the fifty years of its existence, had a formative influence upon American thought, and upon the expression of that thought in American literature. And it increases in value as it grows older and as the number of foreign magazines increase. Recent issues contain some magnificent articles: notably one by Gladstone, in the issue of Sept. 8th, on "The Place of Heresy and Schism in the Modern Christian Church," and "The Poetry of Robert Bridges," by Edward Dowden, in the No. dated August 25. "Alsace and Lorraine," "Competitive Examinations in China," "History of English Policy," "Iceland To-day," and many others equally good, testify to the undiminished lustre of this excellent eclectic. No better opportunity was ever offered for subscribing to this magazine, for the publishers will send *absolutely free* the weekly issues for the remainder of this year to every new subscriber now remitting for the year 1895. Address, Littell & Co., Boston.

\* \*

THE September number of the *Political Science Quarterly* opens with an exposition of the historical relations of "New York City and New York State," with reference to the current discussion of home rule; Dr. Ernest Freund, of the University of Chicago, shows the tendencies of "American Administrative Law;" Prof. Mayo-Smith begins a scientific investigation of "The Assimilation of Nationalities in the United States;" Dr. S. Merlino, of Naples, exposes the real character of "Camorra, Mafia, and Brigandage;" Prof. J. W. Jenks, of Cornell University, discusses "Capitalistic Monopolies and their Relations to the State;" and Prof. Ch. V. Langlois, of Paris, states at length "The Question of Universities of France." The department of Reviews and Book Notes deals with some forty recent publications.

\* \*

THE September number of the *North American Review* opens with an article of unique interest by the new Lord Chief Justice of England, Lord Russell, of Killowen, who relates many interesting anecdotes of his distinguished predecessor, Lord Coleridge. Under the title of "The Results of Democratic Victory," Senator Henry Cabot Lodge, of Massachusetts, contributes a trenchant criticism of the achievements of the present administration from a Republican point of view; the Right Rev. J. L. Spalding, Bishop of Peoria, discusses "Catholicism and Apaism" in an able and temperate paper; and W. H. Mallock writes on "The Significance of Modern Poverty." Three timely and valuable articles dealing with the war in the Orient are bracketed together under the title of "China and Japan in Korea." They are written by three men specially qualified to deal with the question. In other papers Rear-Admiral Peirce Crosby, U. S. N., tells the story of "Our Little War with China;" Richard Mansfield writes "Concerning Acting;" Hiram S. Maxim, the well-known inventor of the flying machine which bears his name, deals with "The Development of Aerial Navigation;" and the Rev. Prof. W. G. Blaikie, LL.D., describes "The Peasantry of Scotland." The third, and last

instalment of Mark Twain's brilliant article, "In Defence of Harriet Shelley," also appears in this number. Other topics treated are: "The Conceited Sex," by William S. Walsh; "Restless French Canada," by George Stewart, Editor of the *Quebec Chronicle*; "The Good-Government Clubs," by Preble Tucker, Secretary of the Council of Confederated Good-Government Clubs; "The Reading of Poor Children," by Alvan F. Sanborn; and "Tendencies of the Turf," by C. H. Crandall.

## Correspondence.

## FROM BRITISH COLUMBIA.

To the Editor of the EDUCATIONAL JOURNAL:

SIR.—Some time ago there appeared an advertisement in the EDUCATIONAL JOURNAL to the effect that permanent positions with good salaries might easily be secured by Eastern teachers if they came to British Columbia.

Now, in justice to our fellow-teachers of the east, we, the undersigned, who have taught in this province for years, wish to contradict this advertisement, and to state the true condition of the teaching profession in British Columbia.

There is no profession in this province that is overcrowded so much as the teaching profession is at the present time. Our High Schools at the last July examination turned out a very large number of teachers, and of these many were unable to get schools and are out of employment yet, though they hold certificates of the highest grades to be had in the province.

Then, as regards salaries, there is not much difference in the majority of schools between the savings of the Eastern teacher and those of the Western teacher, when the cost of living in the east and in the west is taken into account.

This advertisement is misleading, not only in what it states, but also in what it does not state. It omits to mention that all persons must first pass an examination before being allowed to teach in British Columbia. This examination is held only in July, so that if an Eastern teacher resigned his position any time before that, he would have to wait the intervening time, and then he would have very little chance of getting a school.

We hope this advertisement has not caused any to come to this province as teachers.

If any of your readers contemplate such a step, we would remind them of the old saying about "a bird in the hand, etc.," and if they are not satisfied with the bird they have at present, they will do well to avoid taking risks on the British Columbia birds.

We are, sir, yours very truly,

R. H. CARSCADDEN, F. E. MORRISON.  
A. C. STEWART, J. A. BLACK.  
T. S. BAXTER, UNA M. STITT.

Vancouver, B. C., Aug. 17th, 1894.

## CATCH QUESTIONS.

If a goose weighs ten pounds and a half of its own weight, what is the weight of the goose? Who has not been tempted to reply on the instant fifteen pounds?—the correct answer being, of course, twenty pounds. It is astonishing what a very simple query will sometimes catch a wise man napping. Even the following have been known to succeed:

How many days would it take to cut up a piece of cloth fifty yards long, one yard being cut off every day?

A snail climbing up a pole twenty feet high ascends five feet every day and slips down four feet every night. How long will the snail take to reach the top of the post.

A wise man having a window one yard high and one yard wide, requiring more light, enlarged his window to twice its former size, yet the window was still only one yard high and one yard wide. How was this done?

This is a catch question in geometry, as the preceding were catch questions in arithmetic. The window was diamond shaped at first, and was afterwards made square.

As to the two former, perhaps it is scarcely necessary seriously to point out that the answer to the first is not fifty days, but forty-nine; and to the second not twenty days, but sixteen—since the snail who gains one foot each day for fifteen days climbs on the sixteenth day to the top of the pole and there remains.—*Christian Secretary*.

A "SMART" COUNTRY BOY.

The "smart" city boy has countless wonderful stories to tell to his country cousin when he goes to the farm for a part of the summer. The city may not be a good place to stay in the warm weather, but it is a good place to brag about. City Boy got caught, however when he had pumped Country Boy full of yarns about marvellous things in the metropolis.

"Well, I know," said Country Boy, with an angelic look on his freckled face, "but my uncle over to Cross Roads beats 'em all. He's got twenty hives of bees, and he's got a name for every bee."

City Boy jeered, but Country Boy stuck to his yarn stubbornly until City Boy, seeing a chance to get a big story to tell in the city, was convinced.

"Well," he said, "tell me some of the names. What does he call some of them?"

"Bees," said Country Boy, his face as expressionless as a freckled flour sack, "just bees. He calls 'em all bees."

"Papa," said little Katie, "do you know how high those clouds are?"

"No, child," answered her father, with an indulgent smile.

"Well," said Katie, regarding them with critical eye, "I do. They're cirrus clouds and they're about three miles and a half high. You didn't have very good schools when you was little, did you papa?"—*Chicago Tribune.*

THE great thing in this world is not so much where we are but in what direction we are moving.—*O. W. Holmes.*

MARRY THIS GIRL—SOMEBODY!

MR. EDITOR:—I stained a blue silk dress with lemon juice; what will restore the color? I am making lots of money selling the Climax Dish Washer. Have not made less than \$10 any day I worked. Every family wants a Dish Washer, and pay \$5 quickly when they see the dishes washed and dried perfectly in *one minute*. I generally sell at every house. It is easy selling what every family wants to buy. I sell as many washers as my brother, and he is an old salesman. I will clear \$3,000 this year. By addressing J. H. Nolen, 60 W. Third Ave., Columbus, Ohio, any one can get particulars about the Dish Washer, and can do as well as I am doing.

Talk about hard times; you can soon pay off a Mortgage, when making \$10 a day, if you will *only work*; and why won't people try, when they have such good opportunities

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[P. S. Act, sec. 103 (1).]

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# The Educational Journal

FOR 1894-95

**W**E are at the beginning of another school year. While the thousands of Teachers who have been diligent readers of the Journal during the year are laying their plans for doing a better year's work than ever before, the Publisher of the Journal itself is doing his best to make the paper, which it is surely no presumption to say is pre-eminently . . . . .



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### EDITORIAL DEPARTMENTS :

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