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* Editorial Notes. *

WE are indebted to the courtesy of the Secretary, Mr. R. W. Doan, for a copy of the Programme of the next meeting of the Ontario Teachers' Association, to be held in Toronto in April next. We will publish it in next number.

THE latest school definition of a college which has come to hand is "A cemetery of learning." Barring the orthography, this is not a bad description of some "institutions of learning." To forestall unjust suspicion we must explain that the definition did not come from the School whose Principal was heard to remark that he had "a good corpse of teachers."

"OBSERVER'S" experience touching home lessons for children, is both instructive and suggestive. We had supposed that the practice of giving homework to the little ones, in addition to their five or six hours in school, belonged to a gloomy and vanished past. We should be glad to know how prevalent the practice is in city and country schools, and what intelligent teachers and inspectors think of it. Will not our readers give us a batch of postal card notes on the subject?

THE best of all busy work is, we have no doubt, that which involves the use of pen or pencil. Just as soon as children are cap-

able—and that point is reached earlier than many suppose—there is nothing they will like better than reproducing something in the shape of either drawing or writing. As soon as possible let the drawing be from objects and the writing an expression of the pupil's own thought, at first by giving in his own words something suitable that he has heard. Then let him gradually be thrown upon his own resources for subject-matter. We know nothing which educates like this, or which is more likely to engross the busy brain and hands.

WE are glad to see that many of our U. S. exchanges reprint, frequently, articles from our columns, but we have to complain that they so often, inadvertently no doubt, omit to give credit to THE EDUCATIONAL JOURNAL. Sometimes the republished articles are given with the name, or *nom de plume* of the contributor, but fail to indicate the source from which they are taken; sometimes neither name of contributor nor that of paper appears. Some time ago, we noticed in a Southern periodical one of our editorial articles given almost verbatim, as an original contribution by a correspondent. This could hardly have been either a coincidence or an accident on the part of the correspondent, though of course the periodical was not to blame. We know, by experience, how easy it is to forget to give due credit for a clipping, and would not have referred to the matter, had not slips of the kind been noticed so often of late in a few of our exchanges.

REFERRING, in a speech at Chester, on Technical Education, to the fact that Germany, France, and Switzerland, and other continental countries, had applied a system of technical education to their commercial enterprise which had brought about considerable results, and that England had, in consequence, found herself outstripped as regarded the manufacture of goods introduced into foreign markets, Sir William Hart Dyke said that it was of the most vital importance that children in the rural schools should be taught something of the elements of agricultural science, that the best way to meet foreign competition in farming markets was to produce better cheese, and evidently the

way to accomplish this was to instruct the young men in the principles of dairy farming, etc. This idea of making school education more practical and technical is rapidly spreading. It is, no doubt, sound enough at bottom, but great care will be needed to keep the movement based on true educational principles. It must never be allowed to degenerate into mere teaching of specific industrial processes. No doubt the result aimed at will be best reached along true educational lines.

PRINCIPAL EMBREE, of the Parkdale Collegiate Institute, in a letter to the *Globe*, makes an interesting contribution to the discussion of the defective "pass" course of Toronto University. Mr. Embree argues with much force in favor of the rigorous application of a fifty per cent. standard in the examinations of pass students. He also vigorously supports the proposal to substitute for the terms "pass" and "honor," which have come by usage to connote an invidious distinction between the two classes of students, the more correct and significant words "general" and "special." Mr. Embree well says: "I maintain that the pass student who reaches the 75 per cent. standard in the several subjects of his course works as hard as the honor student who reaches the same standard, and is as well fitted for most of the callings that each is likely to follow." Certainly if this is not true, the fact would only prove that the "pass" or general "course" is far from being what it should be. "If," as Mr. Embree says, "the honor man was obliged to take all the pass subjects in addition to the honor work of his special department, there would be some ground for the present distinction." But, as it is, in view of the early stage at which the "honor" man is permitted to branch off into his specialties, we should be prepared to go even farther than Mr. Embree, and say that both for purposes of culture, and as a preparation for success in most callings, the pass course, assuming it to be a well-arranged general course, is preferable. It is high time that the pass course of the University was put on such a basis as would take away the stigma of inferiority, which does not properly belong to it and should never have been placed upon it.

* Special Papers. *

AN INSTRUCTIVE EXPERIMENT IN COLLEGE GOVERNMENT.

BY JOHN BIGHAM.

IN the prevalent method of college government faculty and student are related as guardian and ward, the faculty standing to the student *in loco parentis*. Another system resembles absolute monarchy, the fiat of the educational czar being decisive. Both methods, the domestic and despotic, may indeed secure good discipline; but there is reason for the claim that they overlook facts and principles in student life which can be comprehended in a control equally efficient in maintaining order and more potent in training men for citizenship.

Amherst College has had such a method for the past eight years. It originated as one of the later outgrowths of the "new system" inaugurated by President Seelye, whose administration began in 1876. Early in his administration the college substituted for *in loco parentis* the plan of voluntary contract between itself and the student. Each agreed to fulfil certain conditions, a failure of either party resulting *ipso facto* in their separation. A phase of the contract plan was the discipline of the college. To aid in maintaining decorum, a method of representative control was presented, and in the spring of 1883, a college senate of ten men—four seniors, three juniors, two sophomores, and one freshman—was elected by the classes.

The theory of this governing body is that a true method of student control must grow out of the peculiar conditions of college life. The Amherst method considers the college as a union of trustees, faculty, and students for a common end. The students' relation to the trustees is remote; to the faculty it is closer but intellectual, formal, and periodic; while to fellow-students it is so intimate, intense, and personal, as to be all-powerful for good or for evil. The short-range influence of other students is the great moral force during the transition from the nurture of the preparatory school to the demands of professional or business life. The Amherst method believes that the undergraduates have far better opportunities than the professors for observing and judging student conduct. It would call forth their best powers. It would utilize the energies latent in student life which, being unknown to or neglected by other kinds of control, are either wasted or used for illegitimate ends. It would organize these forces into a subordinate representative body of students intrusted with definite and decisive jurisdiction. It would thus consider the students not as members of an unwieldy family or as subjects of a despot, but as citizens of a miniature state who are related to the faculty and to one another, not as repellant poles of the same magnet, but as parts of the same organism. Community of interest will therefore bind the college into a system between whose parts collision is impossible.

The hypothesis has been amply verified by the eight years' history of the college senate. At first its work was experimental

and its powers only partially defined; but these were gradually formulated until a simple constitution was adopted in the spring of 1885. On taking his seat each member signs the constitution, thereby "promising to act as a judge upon all matters" brought before him, and to endeavor in all his decisions "to seek always the good order and decorum of the college." The President of the college presides, but is not a member. He may vote on occasion, and by courtesy may present items of business. He has absolute veto over all its decisions, without which provision the senate might legislate over the faculty and trustees. Its decrees, if approved, are enforced by the authorities, so that offenders submit to the severe but sympathetic judgment of their peers. The senate meets regularly once a month, and oftener if necessary. The meetings are open unless otherwise ordered. In most of its work the weight of opinion rests, as it should, with the four senior senators.

There has been a steady enlargement of the senate's functions and influence since its first informal meeting as a "Board of Representatives," in June, 1883. Its powers are judicial and legislative, the authorities being the executive. Its main purpose is to control discipline as provided in the constitution, Article IV., Section 1:

"Whenever a member of the college shall appear to have broken the contract upon which he was received as a member of Amherst College, except in cases pertaining to attendance upon college exercises, determined by the regular rules of the faculty, the case shall be brought before the senate, who shall determine both as to whether the contract has been broken, and whether, if broken, it shall be renewed."

Such cases are presented by a senator or by the president. The evidence is examined, and if it is found that the contract is broken, it is so affirmed, and the student is separated from the college. About four years after adopting the representative system the senate's constitution was enlarged, so as to extend its jurisdiction "over such procedures of any body of students relating to order and decorum as affect the whole college," in addition to its former control "over whatever other business the president or faculty may submit to it." This enlargement of its powers over student life made the senate more useful and lightened the faculty's duties. It has also formal control of certain social occasions, such as class suppers, for which its permission is necessary. Similarly it supervises some of the undergraduate publications. The athletic interests have from the first demanded much attention. The growing prosperity of the college athletics and a desire for better financial management led the senate, in the autumn of 1888, to appoint certain of its members supervisors of the various athletic organizations, and in the spring of 1889 to choose suitable alumni to assist them. Early in 1890 these provisions were supplanted by the formation, at the suggestion of alumni, of an athletic board, the senate appointing two of the faculty and three alumni to co-operate with the heads of the athletic organizations. In these ways its ability and usefulness in directing

various phases of college life have been manifested. Some of its provisions are for temporary needs, others become permanent features of its work. It is a conservative body, close votes being the rule on important measures. The classes generally choose for senators men of either high scholarship or sound judgment.

Perhaps the best illustration of the senate's methods and efficiency is a case which occurred five years ago. The seniors wished to defray part of commencement expenses by a dramatic entertainment in winter term. Formerly such events required the president's permission, but a recent enlargement of the senate's powers put the matter under its jurisdiction. A petition was voted by the class. The senate received it through the senior senators, and voted to consider it. A motion to grant it was debated at some length and carried by a margin of one vote. The president deemed it wise to veto this decision—the first and the only veto in the senate's history. Some of the senior senators, however, felt that the case should be re-argued. The president was willing to allow this, so as to do full justice to them and to the class. At a special meeting about a week later, the senate voted to reconsider its previous action on the petition. The original motion to grant it was then debated thoroughly, and was lost by a margin of one vote. The president sustained this decision, and the petition was thus finally rejected. Later, the class's petition for dramatics in the spring term was duly presented, debated, and granted, and the action of the senate was approved by the president. The entertainment was accordingly given.

Occasionally matters of special interest have caused much excitement among the students and in the senate meetings. The attendance has been large, the debates earnest, and the votes close. Despite the intense feeling aroused, the senate's decisions have always been readily accepted by the college, even when opposed to the students' wishes. These crises have been at once the severest test and the best proof of the wisdom and efficiency of college autonomy. At such times the students have shown a jealous watchfulness over their prerogative of self-government, thus confirming its permanence and importance in college life.

Doubts as to the success of the representative system of control are met by its history. It is evident that considerable ability is shown by the students in other phases of their life. Successful management of the athletic, business, social, literary, and religious enterprises demands skill and care in handling men and funds. But will not the students shrink from the task of disciplining their fellows? Not at all. College men are exceedingly critical and fairminded, and the love of justice pervades the disciplinary and other work of the Amherst senate. Claiming just concessions from the faculty, they are pledged to justice in all their duties. The following is a good illustration:—A senior class had petitioned permission for an important event. One of the senior senators was the intimate friend, fraternity mate, and room-mate of the student leading the proposed enterprise; but he, with his three senior colleagues, voted

against the petition. This is not strange. As a senator the college man occupies the unique standpoint of a judge, and he likes it. His relation to his fellows is official, not personal. His freedom of judgment, backed by the authorities, gives him the combined burden and dignity of responsibility. It is true that the attitude of the senate toward the higher powers, especially in its early history, has not always been wholly trustful. It is equally true that the authorities have been at times wisely conservative in outlining and enlarging its functions. On the whole, they have been mutually helpful by giving to each other definite spheres of action.

The senate system has influenced the students toward a more wholesome manliness. Like every peculiar feature of any college, it has been a standing object of criticism. At the outset it was even ridiculed, especially in the proviso of the president's absolute veto. The claim used to be made that such a veto made the senate merely a tool for the authorities; but as shown above this is not its purpose. Only one veto has occurred in the past eight years, and that was accepted without demur. Adverse opinions have gradually and entirely yielded before the accumulating evidence of the senate's successful history. Probably no one, officer or student, would dispense with it. There are also signs of an influence upon other institutions, which have adopted modifications of this system of self-government. Its principles might indeed find application in institutions of other grades.

In the history of the Amherst College senate there seems a basis for the claim that college generations trained under such a system acquire an appreciation of the efficiency of a republican government and of the privileges of citizenship, the imparting of which is at once the aim and the duty of the American college.—*Educational Review.*

ARTICULATION.

THE actual teaching comes next. No words can exaggerate the importance of the first rule to be laid down.

The observance of it would revolutionize the whole world of tuition.

It is so simple that it can be observed.

So simple, that few observe it.

So simple, that those who want talk, and will do anything, and undergo anything rather than think, and act, will scorn to observe it.

Many boys, who all their lives long know nothing because of early tangle, would know.

All would save half their time.

What then is this talisman, this Columbus's egg, this simple magic and magic simplicity, this Aladdin's lamp, which is to whisk everything into place, and create half a lifetime for all?—Articulation.—Nothing more than a rigid, absolute, unflinching exacting of articulate speech, and the pronouncing the final syllable of each word firmly, distinctly, and unmistakably.

The full force of this statement is not seen at once. It has been proved that accuracy is the first and main object of train-

ing, both the power of accurate observation, and the power of reproducing accurately what has been observed. It has been proved also that one of the main advantages of an unspoken language as an instrument of training consists in the number of inflected forms, the changes, that is, in the final syllables. The orderly multitude of small word-labels, all calling for intelligent observation, is that property of language which makes language in the first instance such a valuable drill-master, apart from any other consideration. Every one has seen an imperfect chromograph. Let us suppose for a moment a chromograph of a book in which every final syllable was left out, or blurred, and this too in a foreign language. What would be the value of that copy to a learner with its pages full of words cut in half? Precisely the same value, that inarticulately spoken lessons are to the miserable victim, who is permitted to drop, or blur his final syllables. Add to this that the human chromograph possesses the unenviable faculty of filling in all the blurred or dropped portions incorrectly at will, and so of keeping and cherishing not a merciful blank, but a most cruel torment of endless mistakes. And all this ruinous downward training is the necessary result of inarticulate speech, and the not sounding the final syllables. A habit is formed of confusion and indecision. Confusion and indecision breed constant disappointment, in a hard-working boy especially; inaccuracy in time settles down into a conviction that nothing is certain or fixed, or, at least, that he cannot by any possibility arrive at it. And this in later life leads to all those sloppy theories and careless confident judgments which fill the air; and finally ends in utter and general unbelief in any one being really master of his subject; with the fitting corollary, that if no one is master of his subject, any one is at liberty to express his own views on it; and the judgment of the skilled workman is of no more account than the babble of the after-dinner talker. Nothing is a more striking sign of the rotten state of education than the absolute non-existence of any respect for the judgment of the skilled workman in his own line, whatever that line may be. Only lawyers are exempt from this irony of being handled by the amateur! The evil of inarticulate speech has much to do with this, by destroying in the great majority the sense of precision.

But to return to the learner at his task. The pupil in language might be defined in his early stages as one whose business it is to stamp on his memory the last syllable of words. Therefore he is allowed never to pronounce one of them distinctly. The blurred chromograph sprawls over his whole mental tablet, with an ever increasing family of mistakes, till at last, in hopeless bewilderment, he dubs himself utterly stupid, gives up the struggle and leaves off trying to get on, accusing his poor calumniated mind, when all the time the only culprit is his tongue, and the teacher, who has not taught him how to use his tongue properly. If articulate speech is really taught, and the accurate attention necessary for articulate speech is the habit of the room, then the next step is natural and easy. Accuracy demands that the right thing

should be known, and, if known, said at once. Therefore—never allow a boy to correct himself. That is, inflict at once whatever penalty the mistake carries with it without fail; and then, and not till then, make the offender mend his ways. Or, at least, impose silence until your questions have exposed the blunder. There is a vast army of mistakes, which are no mistakes at all in the sense of being wrong mistaken for right. They are merely the loose snores of the unawakened mind; when the construer, or answerer, knows perfectly well, as well as his master does, the actual bit of knowledge to be produced, but has been permitted again, and again, to spit out what came uppermost, and—to correct it. He has not made an intelligent mistake, he has not even made an idle, unintelligent mistake, he has simply snored, emitted an unthought of sound out of a drowsy cavern of non-life. It is no mistake at all; as he proves the next moment, and very often will admit, by correcting it promptly and with ease. No correction ought ever to be allowed to avert blame, or penalty. This rule does not interfere with that most useful of all minor inflections, the pushing an idle, careless boy through the bit he is maltreating, forcing him to flounder on, to sprawl about, to take every word, and render each, as he takes them, however absurdly, in all the hideous deformity of words unknown, grammar defied, and sense nowhere; and then when he has finished, reading out the result. There is no worse fault in teacher or taught than not keeping close to the work, and working with certainty. Real mistakes are one thing. Sham mistakes are another. And the learners ought to have the distinction sharply and strongly cut across their minds. A boy ought to be made to see always that what he *can* do he *shall* do. Faults of ignorance are very real, and faults of idleness are very real, but at any given moment there may be great difficulty, nay, impossibility, of judging whether any blame or punishment is deserved by the guilty, but unfortunate creature, who has made them. But sham mistakes admit of no such doubt; they are unpardonable; and if every teacher agreed in never allowing this preventable crime; never allowing a correction; never allowing these senseless snores to pass; a great revolution would be effected. It is not the knowledge of the miserable Tense, or Case, that is the question, but the slackness of mind that is so deadly, the trained activity that is at stake. Sham mistakes should be exterminated promptly. They are mere vacuity, total absence of training and thought.—*Edward Thring.*

DRAWING EXERCISES.

1. DRAW a map of a base ball ground showing the different positions and bases.
2. Draw a map of a croquet lawn marking the correct positions for stakes and arches.
3. Draw a plan of a dining-room having a bay window, and showing the position of table, chairs and side-board.
4. Draw a large square representing a flower garden, and lay it out nicely with walks, flower beds, hedges, etc.—*Primary School.*

* English. *

Edited by Fred. H. Sykes, M.A., EDUCATIONAL JOURNAL, Toronto, to whom communications respecting this department should be addressed.

PICTURES OF MEMORY.

BY ALICE CARY.

I. INTRODUCTORY NOTE.

THIS poem is not included in the volumes of Miss Cary's works, published after her death by Houghton, Mifflin & Co., and edited by Mrs. Mary Clemmer, who had been, during her lifetime, the editor of her writings. It is, however, still published as a song, with an accompaniment by Hauptman, under the title of "The Little Forest Maiden." In the song, lines 5 to 16 of the poem are omitted; line 17 reads, instead of "I once had a little brother," "It is of a little maiden;" and in line 32, "arrows of sunset" is changed to "golden sunset," other alterations to correspond with these being made. The song was published during Miss Cary's lifetime, but I do not know whether the changes had her sanction. They seem to me, on the whole, to be judiciously made. The pictures suggested by lines 5 to 16, though sometimes beautiful, and always prettily expressed, are, when true to nature, somewhat out of keeping with the general picture of the "dim old forest;" and the relationship indicated by the word "brother" is rather commonplace for the highly romantic, not to say improbable, incidents of the poem. By changing "arrows of sunset" to "golden sunset" there is a gain in euphony at the expense of the loss of a very striking figure.

II. QUESTIONS.

1. Tell the story of the poem in your own words.
2. Describe, as clearly as you can, the pictures suggested to your imagination by the first and last sections.
3. What is there in the poet's pictures that makes you think she is drawing upon her imagination, not describing what she has seen?
4. Can you give any reasons why the author should select autumn rather than any other season as the time of the brother's death?
5. With what feelings does the supposed speaker regard her brother's death?
6. Divide the poem into sections, grouping the lines in accordance with the changes in the thought, and making the sub-divisions different from those of the text-book. State the subject of each section.
7. If this poem were divided into stanzas, how many lines would there be in each?

III. EXPLANATORY NOTES.

Line 2. *Memory's wall*.—Memory is compared to a picture gallery, on the walls of which hang beautiful paintings.

5. *Gnarled*.—With rough, knotty trunks and branches.

6. *Mistletoe*.—A parasitic plant, that is one that grows upon another, deriving sustenance from it. The mistletoe is generally found on trees of the apple family, and sometimes on poplars, but very rarely indeed on the oak. It is an evergreen, bearing leaves of a very light color and small semi-transparent white berries.

7. *Violets golden*.—The yellow violet grows abundantly in spring in rich woods. It is not, however, a very conspicuous flower.

9. *Milk white lilies*.—The only white lily I know that bears a milk white flower is the trillium, a very common plant in the woods in spring. Line 10, however, suggests the idea of a more graceful flower than the trillium. The word hedge, too, though it might mean simply a thicket of bushes, is generally applied to bushes used to form a fence or enclosure. Perhaps, therefore, the poet has in mind cultivated white lilies growing near the forest in a garden hedge of sweet-briar or of some other fragrant plant.

11. *Coquetting sunbeams*.—The writer poetically attributes to the lilies the intention of coyly attracting the caresses of the sunbeams.

12. *Stealing edge*.—The edges of the petals of the lilies glow in the golden sunlight. Cf. Mrs. Browning's poem, "To a Dead Rose":

"The sun that used to smite thee,
And mix his glory in thy gorgeous urn,
Till beam appeared to bloom, and flower to burn;
If shining now, with not a hue would light thee."

13. 14. *Not for rest*.—A somewhat common climbing plant bearing a bright red berry is the bittersweet. It is, however, generally found in low marshy ground, not in the "upland."

15. *Pinks*.—The poet probably has in mind the fire-pink, found sometimes in Southern Ontario, and common a few degrees south of us in the United States.

Couslips.—More commonly called primroses, are plants bearing clusters of pale lilac flowers with a yellow centre.

19. *Lap*.—Suggests an idea of tenderness and love in association with that of the resting place of a child.

33. *Arrows of sunset—bright*.—The rays of sunlight darting through the spaces between the trees, and illuminating the foliage of the upper branches.

36. *Gates of light*.—The glorious beauty of the sunset sky calls to the mind of the poet the thought of the golden gates of heaven, through which the soul of the dead child is to pass.

IV. SKETCH OF THE LIFE OF THE AUTHOR.

Alice Cary was born near Cincinnati, Ohio, in 1820. Her parents were people of a fair degree of culture; but in a newly settled country, as Ohio then was, they found few opportunities for securing educational advantages for their daughters, Alice and Phoebe. The latter, however, overcame by their patient energy the difficulties of their position. It is related, as an example of their perseverance, that when their niggardly and unsympathetic stepmother denied them the use of candles they constructed a rude lamp with a piece of rag and a saucer of lard by the light of which they pursued their studies. At eighteen years of age, Alice began to write poetry, and she was for many years afterwards a valued, though generally unpaid, contributor in prose and verse to newspapers and magazines. In 1852, she and her sister published a volume of poems. The success of their venture was such that they decided to move to New York and devote themselves wholly to literary pursuits. In their city career they were very prosperous, attaining a high position in the literary world. Alice Cary died in 1871, after a lingering and painful illness, which she bore with patience and resignation. In her sufferings she was tenderly cared for by her inseparable companion, her sister Phoebe. The latter, though apparently in robust health up to the time of her sister's death, only survived her five months. Alice and Phoebe Cary stand among the foremost of the female poets of America. Their prose works, too, are remarkable for their graceful style and for their realistic descriptions. A. W. B.

SHYLOCK vs. ANTONIO.*

(A BRIEF FOR PLAINTIFF ON APPEAL.)

BY CHARLES HENRY PHELPS.

(Continued).

So far, the young doctor's enunciation of the law has been dignified, and in accordance with that broad interpretation which is an essential part of the spirit of jurisprudence. The suggestion has been made, and it seems plausible, that the learned Bellario had furnished the youthful judge with the decisions rendered up to this point, but that the infinitesimal hair-splitting which immediately follows is the subtle inspiration of his young *protege*. It will presently be seen that there are facts which bear out this supposition. Let us take up and examine these very remarkable *dicta*:

"This bond doth give thee here no jot of blood; The words expressly are, a pound of flesh. Take then thy bond, take thou thy pound of flesh, But, in the cutting it, if thou dost shed One drop of Christian blood, thy lands and goods Are, by the laws of Venice, confiscated Unto the state of Venice."

This is the very consummation of sophistry. No one better than the judge knew the fallacy of these

*The "Trial Scene" of the "Merchant of Venice" forms this year a part of so many examinations that we think our readers will not be sorry to see this reproduction of Mr. Phelps's clever article. It appeared originally in the *Atlantic Monthly* for April, 1886.

petty subterfuges. But let us meet quibble with quibble. It is submitted that Shylock would have been justified in replying:

"When I have a right to anything, I have a right to whatever necessarily accompanies it. If I own a pond of water, are not the fish mine? If I buy meat at the market, shall the vendor come to me afterward with a bill for the blood? And if I am entitled to a pound of Antonio's flesh, and he is entitled to the blood, what right has his blood in my flesh? Let him get it out at once, or lose it! And if, in taking it, he detaches one shred of my pound of flesh, let his lands and goods be 'confiscated unto the state of Venice.'"

But says the judge:

"Nor cut thou less, nor more,
But just a pound of flesh; if thou tak'st more,
Or less, than a just pound,—be it but so much
As makes it light, or heavy, in the substance,
Or the division of the twentieth part
Of one poor scruple,—nay, if the scale do turn
But in the estimation of a hair,
Thou diest, and all thy goods are confiscate."

"But," the plaintiff might have responded, "surely, if a man owes me three thousand ducats, I may lawfully release him for twenty-nine hundred. If the market-man owes me a pound of flesh, I may acquit him, if I choose, for three-quarters of a pound. I do not question your decision when you deny my right to more than the penalty, but you have all pleaded for mercy, and I am willing to forego a quarter of a pound of that which is mine. Moreover, you have an officer whose duty it is to execute decrees. If this judgment is to be executed so exactly, it is proper that he should do it. Let him cut off the pound of flesh, and if he spills any blood, or cheats in the weight, confiscate his goods and sue his bondsmen for any deficiency."

However, the Hebrew makes no such reply, but, crushed and overpowered, sees that there is evident intention to render judgment against him, and demands simply:

"Give me my principal, and let me go."

But, notwithstanding the young doctor has previously proffered Shylock thrice this amount, he now declares that nothing shall be awarded but the forfeiture; and while the words of this last but oft-repeated admission of plaintiff's right to judgment are still warm upon his lips, he proceeds with the following astounding declaration:

"Tarry, Jew;
The law hath yet another hold on you.
It is enacted in the laws of Venice—
If it be proved against an alien,
That by direct or indirect attempts
He seek the life of any citizen,
The party 'gainst the which he doth contrive,
Shall seize one-half his goods;"—

(This idea of confiscating Shylock's goods displays a remarkable ubiquity in the utterance of the court).

"the other half

Comes to the privy coffer of the state;
And the offender's life lies in the mercy
Of the Duke only, 'gainst all other voice.
In which predicament, I say, thou stand'st;
For it appears by manifest proceeding,
That, indirectly, and directly too,
Thou hast contriv'd against the very life
Of the defendant; and thou hast incurred
The danger formerly by me rehears'd."

Now, whatever may be thought of the proceedings up to this point,—whether or not Shylock was entitled to his pound of flesh or to a return of his money, or even whether he should not be dismissed without either,—certainly the one thing which he had *not* done was to "seek the life of any citizen." He had simply submitted the facts to the court, and asked for the authority and guidance of its decree. He said, in effect, "Here is the bond. I have made, and shall make, no attempt to execute it myself, as I wish to avoid even the appearance of proceeding without the sanction of the law. I come into court to submit the facts and to ask a judgment in due form determining exactly what my rights are. When the decree has established what is lawful, that will I do, and nothing else."

As we have already seen, this attitude of Shylock's was recognized several times in the early

part of the trial, and it was declared that his bond was lawful, that his procedure was proper, and that he was entitled to his decree. Indeed, the court had that very instant awarded him judgment; and when he declines to proceed under the restrictions imposed, the court proposes to forfeit his life and property, apparently for allowing such a decree to be rendered. The Duke, somewhat staggered at the length to which things are going, interposes, to pardon Shylock's life, and the baffled suitor, whose only crime has been that of appearing before the tribunal and asking for a determination of his rights, is at last suffered to go, with a loss of only half his property, upon the condition of renouncing his religion.

Of this illogical tangle of inconsistencies there seems to be no explanation, until the fact comes out that the so-called youthful doctor of Rome is really a young woman in disguise, and is, in fact, none other than the wife of Bassanio, the principal debtor on the bond, who has left her home in charge of Shylock's daughter in order to come to Venice to accomplish the downfall of Shylock himself. That Portia owed her scape-grace husband—in whom we wish her much joy—to this unfortunate investment of the plaintiff's; that the very coat on her husband's back was bought with Shylock's money, unless she had furnished him up since she married him; that she herself was at that moment sheltering Shylock's runaway daughter at Belmont, and affording a safe receptacle for Shylock's plundered property, do not seem to have occurred to her as good or sufficient reasons for making the judgment as little onerous as possible after extricating Antonio from the unpleasant predicament into which the insatiable desire of Bassanio to show a "swelling port" had thrust him. But the record reveals plainly that the plaintiff did not have that fair and impartial trial to which he was entitled, and it is confidently believed that, upon this appeal, that justice will be awarded to him which was denied to him upon the hearing in the court below.

All of which is respectfully submitted.

Contributors' Department.

PHYSICAL CULTURE.

BY A. C. MOUNTERR.

II.

THE OBJECTS AIMED AT IN THE EMERSON SYSTEM OF PHYSICAL CULTURE.

I AM aware that it is exceedingly difficult to make such a subject interesting "on paper." Yet I trust that the fact of its being of vital importance to all of us, will lead not a few teachers and others to investigate still further the claims of a system which I can only present in outline.

It is a system requiring no dumb-bells, clubs, weights or outside appliances of any kind. Man has all the appliances necessary for his physical development within himself. All the leading teachers of physical culture in America now recognize this truth, and have abandoned all gymnasium appliances, regarding them only as relics of crudeness in physical culture. The same principle holds good in the history of men in this very age. When he is in darkness, groping his way in quest of something either for his spiritual or physical development, he is almost certain to seek out "many inventions," thus rendering complicated and difficult to attain that which the God of Nature had made simple and within the reach of every one. But as soon as we enter into the light which is provided for all what a flood of common-sense flows in upon us! How the complications and difficulties which we had heaped up against ourselves are replaced by simpler and infinitely more rational methods!

Physical culture is still in its infancy in Canada, and if our educators desire to enter at once into the light that is now shining in certain quarters, they have that privilege; but if they prefer that a long period of darkness should first envelop them they can purchase all the appliances necessary for thoroughly equipped gymnasiums, at nominal figures, from many American institutions which have abandoned them. No, ladies and gentlemen, you do not need them. You are not machines, though you may have attempted to make yourselves

such by hitching yourselves to weights, clubs or dumb-bells and then going through a number of childish movements in a purely mechanical way, with no clearly-defined object in view. You are thinking as well as moving men and women. The God who made your physical organism provided you also with a mind and with inherent muscular and nerve forces which are all-sufficient to enable you to develop the highest possible physical condition. And as certain as the darkness of to-night will be followed by the glorious light of to-morrow's sun, so sure will the recognition of this truth soon dispel the darkness, which, I fear, now envelops many an earnest educator in Canada.

But some may ask, how can we develop muscle without recourse to outside appliances? Before answering, I would ask, are you sure it is "muscle" you need to develop? The farmer, mechanic, foundryman and smith have muscle. They need it for their work and their work gives it to them. And yet they are no longer-lived than clerks, teachers, lawyers or others of sedentary habits who have comparatively little muscle. A man is not necessarily strong because he has largely-developed muscle. The famous Dr. Winship developed such muscular power that he could lift two thousand seven hundred pounds. But he died of prostration. We are truly strong only when strong in the vital centres—in other words, health is strength.

In the study of the laws of human economy we find two sets of muscles and nerves; first, the muscles and nerves which waste the vital supply; second, the muscles and nerves which replenish the vital supply. If the exercise of the former is greater and more frequent than that of the latter there must be gradual physical degeneration. We see this forcibly illustrated in all pugilists and athletes who are invariably short-lived. They develop immense bunches of muscle, but for each of these there is a corresponding depression, representing so much vital waste. The student who devotes all his energies to the gaining of knowledge may develop marvellous clearness of intellect; but alas! it is all valueless to him, for he has been so sapping the fluids of life he finds himself a physical wreck before he has reached maturity. Shall we then cease active exercise of either, or both, the mind and body in order to prevent the possibility of vital waste? By no means. That blessed truth, "It is more blessed to give than to receive," has its fulfilment in our physical as well as in our moral nature. He who gives his physical energies in harmony with the natural laws of human economy receives more than he gives in vital replenishment.

One grand object aimed at in the Emerson System of physical culture is to sustain the due relation between the energy that supplies and the energy that wastes vitality. In this object we find simply an effort to obey one of Nature's most reasonable laws; and they who, through ignorance or otherwise, disregard this law and persist in exercising only those muscles which waste vitality, will, sooner or later, exhaust the original supply and physical wrecking is the inevitable result. On the other hand, they who recognize the law and the value of obedience to it, will find within themselves adequate replenishment for all waste of vitality which the most arduous labor entails. The moral of this letter may be briefly summed up thus: True strength is not muscular, or intellectual, but vital strength. I will further consider the objects aimed at in the Emerson System in my next.

For Friday Afternoon.

WHICH IS IT?

WHEN I was young, for Sunday's feast,
We used to have potatoes
And chicken fixings, beans and beets,
And with them, oft—tomatoes.

But yesterday a gourmand gray,
A pig from head to fat toes,
Informed me that of vegetables,
He much preferred—tomatoes.

For other folks I wouldn't care,
Although my words were not those
They proper deemed, but she I love—
She always says—tomatoes.

To fail in aught that she expects—
Intolerable the thought grows,
I trembling say: "Now, give me, please,
Tomato—tomat—tomatoes."

SMITHY SONG.

WHEN I am half a-dreaming,
And only half asleep—
When daylight's grayest gleaming
'Gins through the blinds to peep—
Oh then I hear the dinging
Of the smithy hammers ringing,
Ching ching, ching ching,
Ching ching, ching ching.

At eve, when I'm returning
From labors of the day,
Their forges yet are burning,
And still their hammers play;
And oft the smiths are singing
To that measured, merry ringing,
Ching ching, ching ching,
Ching ching, ching ching.

Often with to and fro
Of bodies rhythmic bending,
They toil in couples—sending
The sparks out, blow on blow;
One hammer always swinging
The while the other's ringing,
Ching ching, ching ching,
Ching ching, ching ching.

O merry anvils sounding
All day till set of sun!
It is by sturdy pounding
That noblest tasks are done—
By steady blows and swinging
That keep the world a-ringing,
Ching ching, ching ching,
Ching ching, ching ching.

The Century.

WHAT THE SCHOOL BELL SAYS.

BY JAMES BUCKHAM.

It is wonderful what unlike things
The school bell says to the boys, when it rings!
For instance, the laggard, who drags along
On his way to school, hears this sort of song:

Oh—suz—hum!
Why did I come?
Study till four—
Books are a bore!
O how I wish
I could run off and fish!
See! there's the brook,
Here's line and hook.
What's that you say?
Hurry up—eh?
Oh—hum—ho!
S'pose I must go,
Study till four.
Books are a bore!

Then the boy who loves to be faithful and true,
Who does what his parents think best he should do,
Comes bravely along with satchel and books,
The breeze in his whistle, the sun in his looks,
And these are the thoughts that well up like a song,
As he hears the old bell with its faithful ding-dong:

Cling, clang, cling—
I'm so glad I could sing!
Heaven so blue,
Duty to do!
Birds in the air,
Everything fair,
Even a boy
Finds study a joy!
When my work's done
I'm ready for fun.
Keener my play
For the tasks of the day.
Cling, clang, cling—
I'm so glad I could sing!

These are the songs which the two boys heard,
When the school bell was ringing, word for word.
Which do you think was the truer song?
Which do you hear, as you're trudging along?
Don't be a laggard!—far better, I say,
To work when you work, and play when you play.

—Journal of Education.

* Mathematics. *

All communications intended for this department should be sent before the 20th of each month to C. W. Clarkson, B.A., Seaforth, Ont.

EDUCATION DEPARTMENT, ONTARIO— ANNUAL EXAMINATIONS, 1891.

ALGEBRA AND EUCLID.

PRIMARY.

NOTE.—Candidates will take three questions in section A, two in B, all in C, and any two in D.

A.

1. (a) Show that $6x^2 + 13xy + 6y^2 + 12x + 18y$ is divisible by $2x + 3y$.

(b) If the product of a and b equal $x^4 - 2x^3y - 3x^2y^2 + 4xy^3 + 2y^4$, and if a equal $(x^2 - 2y^2)$, find b .

2. Factor

(a) $x^2 + 5ax + bx + 10ab - 2b^2$.

(b) $x^7 - 2x^5 + x^4 - a^3x^3 + 2xa^4 - a^4$.

3. Simplify

(a) $\frac{(a+b)^2 - 4ab}{a^2 - b^2}$.

(b) $\frac{x-y}{z^2 - (x-y)^2} + \frac{y-z}{x^2 - (y-z)^2} + \frac{z-x}{y^2 - (z-x)^2}$.

(c) $\frac{x^3}{(x-y)(x-z)} + \frac{y^3}{(y-x)(y-z)} + \frac{z^3}{(z-x)(z-y)}$.

4. State a rule for finding the least common multiple of two or more algebraic expressions. Apply your rule to the finding of the L.C.M. of $x^2 - 4a^2$, $x^3 + 2ax^2 + 4a^2x + 8a^3$, and $x^3 - 2ax^2 + 4a^2x - 8a^3$.

5. Solve the following equations:—

(a) $\frac{3x+1}{x+1} = \frac{3bx-2a+c}{b(x+1)-a}$

(b) $\frac{(x+n)(x+q)}{x+n+q} = \frac{(x+c)(x+a)}{x+c+a}$

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

B.

6. A cistern holding 820 gallons is filled in 20 minutes by 3 pipes which let in water at uniform rates, the first pipe admits ten gallons more than the third and the second 5 less than the third every minute. How much water flows through each pipe per minute?

7. A and B have the same income. A contracts a debt each year amounting to $\frac{1}{3}$ of his income; B lives on $\frac{1}{4}$ of his. At the end of 10 years B lends A enough to pay his debts and has \$160 to spare. Find the income of each.

8. A and B play for a stake of \$12. If A wins he will have thrice as much money as B. If he lose he will have twice as much. What amount of money does each possess at first?

9. A man buys m horses for $\$p$ and sells n of them at a profit of 5%. At what price must he sell the remainder that he may gain 10% on the whole?

10. A travels from C to D at the rate of 6 miles per hour, B starts from C two hours after A, and travelling 10 miles per hour reaches D four hours before A. Find the distance from C to D.

C.

11. If two angles of a triangle are equal the sides opposite these angles are equal. Euclid I, 6.

12. Draw a perpendicular to a given line from a given point not on the line. Euclid I, 12.

13. Show how to construct a triangle when the three sides are given. Euclid I, 22.

14. If two triangles have two sides of the one respectively equal to two sides of the other, but the angles contained by these sides unequal, then the triangle having the greater angle has the greater base. Euclid I, 24.

D.

15. How do any of the lines which you draw in the diagram to question 11 differ from the line as Euclid defines it, and why does not this difference lead us into errors?

16. State any other propositions in Book I which are related to one another in the same manner as I, 5 and I, 6; and explain the general difference in the modes of proof of propositions so related.

17. It is not proved, but taken for granted, in Euclid I, 12, that a circle cuts a straight line in only two points. If we assume that a circle cuts a straight line in three points, show what effect this has upon the drawing of the perpendicular in Euclid I, 12.

18. In constructing a triangle from three given lines what difficulty is encountered (a) when one of the lines is equal to the sum of the other two, (b) when one of the lines is equal to the difference between the other two?

19. Show that two intersecting straight lines make, in general, two different angles with one another, and that the lines bisecting these angles are perpendicular to one another.

PRIMARY ALGEBRA.

SOLUTIONS.

1. (a) $(3x+2y)(2x+3y) + 6(2x+3y) = \text{Expression}$.

(b)
$$\begin{array}{r|rr} 1 & 1-2-3 & +4+2 \\ +0 & 0+0 & +0 \\ +2 & +2 & -4-2 \\ \hline & 1-2-1 & 0+0 \end{array}$$

Quotient = $x^2 - 2xy - y^2$

2. (a) $(x^2 + bx - 2b^2) + 5a(x + 2b)$

Factors are $(x - b + 5a)(x + 2b)$

(b) $x^4(x^3 - 2x + 1) - a^4(x^3 - 2x + 1)$

Factors are $(x^4 - a^4)(x^3 - 2x + 1)$

3. (a) Expression = $(a-b)^2 \div (a^2 - b^2)$
= $(a-b) \div (a+b)$

(b) The denominators = $(x-y+z)(-x+y+z)$,
 $(x+y-z)(x-y+z)$, and
 $(-x+y+z)(x+y-z)$.

L.C.M. = $(x-y+z)(x+y-z)(-x+y+z)$.

Numerator of sum = $(x-y)(x+y-z)$
+ $(y-z)(-x+y+z)$
+ $(z-x)(x+y-z) = 0$

Hence sum of fractions = 0.

(c) Numerator of sum = $-x^3(y-z) - y^3(z-x) - z^3(x-y)$

Of this x is not a factor, but $x-y$ is a factor;
 $\therefore (x-y)(y-z)(z-x)$ is a factor, and the remaining factor must be $x+y+z$ to make up the 4 dimensions required. Putting $x=0$, $y=1$, $z=2$, we get the numerical factor = 1. Strike out the common factor $(x-y)(y-z)(z-x)$ from N and D of the final sum; sum of fractions = $x+y+z$.

4. RULE.—Divide each fraction by their H.C.D. and take the product of the quotients.

1st Exp. = $(x+2a)(x-2a)$

2nd Exp. = $(x+2a)^3$

3rd Exp. = $(x-2a)^3$. Hence L.C.M. of all—

$(x-2a)(x+2a)^2(x-2a)^2$

= $(x-2a)^3(x+2a)^2$ etc.

5. (a) $\frac{3x+1}{x+1} = \frac{3bx-2a+c}{bx-a+b}$

$3 - \frac{2}{x+1} = 3 + \frac{a-3b+c}{bx-a+b}$

$-2(bx-a+b) = x(a-3b+c) + a-3b+c$

$x = (a+b-c) \div (a-b+c)$

(b) For $n+q$ write k , and for $c+a$ write m , and we have

$\frac{x^2+kx+nq}{x+k} = \frac{x^2+mx+ac}{x+m}$

i.e., $\frac{nq}{x+k} = \frac{ac}{x+m}$ from which

$x = \frac{ack-nqm}{nq-ac}$

or $x = \frac{ac(n+q) - nq(c+a)}{nq-ac}$

(c) $x^2 + x(a+b) - x^2 = \frac{a^2c}{b} + \frac{ab(b+c)}{b} - \frac{ab^2}{b}$;

whence $x = \frac{ac(a+b)}{b(a+b)} = \frac{ac}{b}$.

6. If $x+10$, x , and $x-5$ be the quantities by each pipe respectively, we have $20(3x+5) = 820$; whence $x=12$, $x+10=22$, $x-5=7$.

7. Let $35x = \text{income of each}$; then A's yearly debt = $5x$, and B's annual saving = $7x$;

$\therefore 70x = 50x + 160$; $x = 8$,

and $35x = \$280$.

8. $A's + 12 = 3(B's - 12)$; $\therefore A's = 3B's - 48$.

Again, $A's - 12 = 2(B's + 12)$ $\therefore A's = 2B's + 36$

Therefore $3B's - 48 = 2B's + 36$

$\therefore B's = \$84$, and $A's = 168 + 36 = \$204$.

9. $5\% = \frac{1}{20}$. Cost per horse = $\$p \div m$.

Amount to be realized = $\frac{1}{10}p$.

Now n horses @ $\frac{21}{20}$ of $\frac{p}{m} = \frac{21pn}{20m}$

\therefore deficiency to be made up = $\frac{1}{20m} (22pm - 21pn)$

Price of each of $m-n$ horses

= $\frac{p(22m-21n)}{20m(m-n)}$ to realize 10% profit.

10. When B starts from C, A is 12 miles ahead; when B gets to D, A is 24 miles behind. Thus A goes 36 miles less than B during the time B travels. A loses 4 miles per hour on B; $36 \div 4 = 9$ hrs. = B's time. Distance = 90 mls. Otherwise

Let $x = B's$ time, $x+6 = A's$ time

$\therefore 10x = 6(x+6)$; $x = 9$, distance = 90.

11, 12, 13, 14. Book-work.

15. A *physical* line has breadth; a *mathematical* line has no breadth. But no part of the reasoning depends on the breadth of the line; we reason about the mathematical lines which the visible lines merely represent to the eye. Hence there is no error.

16. Propositions 13 and 14, propositions 24 and 25 are also *converse* propositions. A great many propositions that admit of *direct* proofs, have their *converse* propositions most easily proved by the *indirect* method.

17. In that case three lines might be drawn from the centre to the three points of section forming three different angles, each of which might be bisected by a straight line. Thus there would be three different perpendiculars from the same point to the given line, not coinciding. By means of prop. 16 this might be proved to be impossible.

18. (a) The circles described would touch without intersecting. The vertex would fall on the base and the triangle would vanish, or have area = 0.

(b) If the line $a = b - c$, then $a + c = b$. This case is therefore the same as the preceding one.

19. If AB cuts CD in any point X, prop. 15 shows that the pairs of opposite angles are equal, so that we get only two different angles. These two by prop. 13 are together = two right angles. When they are bisected, the sum of the half angles must be half of two right angles; hence the bisectors are perpendicular.

THE NUMBER NINE.

(From the *Almonte Gazette*.)

In the Arabic or decimal system of notation, 9 is the largest number represented by a single figure. Both the number and the symbol representing it have long been known to possess remarkable properties. Invert 9 and you have 6. Both divide by 3. Hence their sum, difference and product will divide by 3. Try it. The Greeks of old claimed that the Nine Muses sprang from three. If we choose a number like 3762 and remember that it may be written

$$\begin{aligned} 3762 &= 3000 + 700 + 60 + 2 \\ &= 3(1+999) + 7(1+99) + 6(1+9) + 2 \\ &= 3+7+6+2 + 3 \times 999 + 7 \times 99 + 6 \times 9. \end{aligned}$$

It is "as clear as mud" that 3762 will divide by 9 if $3+7+6+2$ will. Now $3+7+6+2 = 18 = \text{twice } 9$. Hence 3762 contains 9 an even number of times. Prove it. The proof of the pudding is in the eating, of division in the dividing. By an exactly similar process we may prove that *any whole number will divide by 9 if the sum of its digits is a multiple of 9*.

This remarkable property of numbers explains

why we obtain the digits, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 in reading down the tens column and in reading up the units column of the first 10 multiples of 9. It also explains why we obtain multiples of 9 if we write the figures 8, 7, 6, 5, 4, 3, 2, 1, 0 in cyclic order after the numbers 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 25, 25, etc. Though it appears quite simple, the theory of numbers is one of the most extensive, intricate and subtle branches of mathematical analysis. For example,

9 times 123,456,789 = 1,111,111,101, and 108
 9 times 987,654,321 = 8,888,888,889. 117
 Notice that the 9 digits are written in 126
 ascending order in the first multiplicand and 135
 in descending order in the second, whilst the 144
 first product contains 9 ones and a cypher 153
 and the second 9 eights and a nine. 162
 One-ninth of 111,111,111 = 12,345,679, and 171
 One-ninth of 888,888,888 = 98,765,432. 180
 The 8 is missing in the first quotient and 198
 the 1 in the second, but their sum = 9.
 One-ninth of 123,456,789 = 13,717,421 207
 One-ninth of 987,654,321 = 109,739,369. 216
 Sum of the quotients is 123,456,790, 225
 the 8 disappearing and the 0 reappearing. etc.
 One-ninth of 0,123,456,789 = 13,717,421, and
 One-ninth of 9,876,543,210 = 1,097,393,690.
 And sum of quotients = 1,111,111,111.
 Again, 111,111,111 times 111,111,111 = 12,345,678,987,654,321.

Both the multiplicand and the multiplier are indicated by 9 units. Hence each divides by 9 and their product by 9 times 9. In the product the digits run in ascending order from 1 to 9, thence in descending order back to 1.

But here let us stop, lest we weary the good-natured editor with our somewhat lengthy discourse on the mystic properties of this truly wonderful number.—A.H.D.R.

PROBLEMS, ETC.

- 22. The product of two numbers is 3072; their L.C.M. is 192; find the numbers. Ans.—48; 64.
- 23. The sum of two numbers is 45; their L.C.M. is 168; find the numbers. Ans.—24; 21.
- 24. British gold coin is worth about £3 17s. 10½d. per oz.; find the least number of ounces that may be coined into sovereigns without surplus or deficiency of metal. Ans.—160 ounces.
- 25. Find the radius of a sphere made out of three others whose radii are 3, 4 and 5 inches. Ans.—6 inches.
- 26. January 1, 1892, fell on Friday; when will this happen again during the present century?
- 27. The hands of a clock coincide every 66 minutes; how much does the clock gain or lose a day? Ans.—11' 54, $\frac{6}{11}$ ".
- 28. A fluid ounce of aconite is added to 9 fluid ounces of water; one ounce of the mixture is again diluted with the same kind of water in the same proportion; and the operation is performed the third time. It is now found that the water was not pure, but contained aconite to the extent of 1%. What fraction of an ounce represents the excess of aconite in the third dilution? Ans.— $\frac{999}{100000}$.
- 29. Bought 180 cattle and sold 84 head @ 5% profit, 56 head @ 7½% profit, and the remainder @ 10% profit. The gain on the whole transaction was \$24.20. Find the cost per head. Ans.—\$27.50.

30. If $\frac{bx+ay-cz}{a^2+b^2} = \frac{cy+bz-ax}{b^2+c^2} = \frac{az+cx-by}{c^2+a^2}$,

prove that $\frac{x+y+z}{a+b+c} = \frac{ax+by+cz}{ab+bc+ca}$.

SOLUTION.—

Each fraction = $\frac{a(bx+ay-cz)+b(cy+bz-ax)}{a(a^2+b^2)+b(b^2+c^2)}$

i.e. = $\frac{y(a^2+bc)+z(b^2-ca)}{a^3+b^3+ab^2+bc^2}$ (1)

and = $\frac{y(c^2-ab)+z(a^2+bc)}{c^3+a^3+c^2a+bc^2}$, by symmetry (2)

∴ $a(a+b)(a^2+b^2+c^2+abc)y = a(c+a)(a^2+b^2+c^2+abc)z$;

∴ $\frac{y}{c+a} = \frac{z}{a+b}$, and by symmetry = $\frac{x}{b+c}$

$$\frac{x+y+z}{2(a+b+c)} = \frac{ax+by+cz}{a(b+c)+b(c+a)+c(a+b)}$$

$$= \frac{ax+by+cz}{2(a+b+c)}$$

Hence the required result.

Examination Papers.

EDUCATION DEPARTMENT, ONTARIO.
 ANNUAL EXAMINATION, 1891.

HIGH SCHOOL ENTRANCE.

DRAWING.

Examiners: { ISAAC DAY.
 J. S. DEACON.

NOTE.—Only two questions are to be attempted.

- 1. Draw a side view (no perspective required) of a house; in the side place four windows and one door; roof not to be drawn; side of house a square; size of drawing three inches to a side; each window $\frac{3}{4}$ of an inch long, and $\frac{3}{8}$ of an inch wide; door $1\frac{1}{2}$ of an inch high and $\frac{1}{2}$ of an inch wide.
- 2. Draw a common pail (a) above the line of sight, (b) below the line of sight.
- 3. Draw a circle three inches in diameter; divide its circumference into eight equal parts; and connect by straight lines each point of division with the two nearest points of division. What is the name of the figure thus formed?
- 4. Draw a pair of scissors, half open, four inches in length.

TEMPERANCE AND HYGIENE.

Examiners: { J. S. DEACON.
 ISAAC DAY.

NOTE.—Any five questions may be taken. A maximum of five marks may be added for neatness.

- 1. State fully the service rendered by water in the process of digestion.
- 2. Give some of the quotations of your text-book from Solomon and Saint Augustine on the evil effects of wine-drinking.
- 3. Shew that, unlike our food or the natural drinks, alcohol, when used as a daily beverage, creates a thirst for larger quantities.
- 4. "Compared with milk, alcohol shows no trace of being a food in any particular."—(Text-book.) Make a full comparison to prove this statement.
- 5. Shew that the work of the heart is greatly increased by even a "moderate" use of alcoholic drinks.
- 6. Shew that alcohol is rightly named a stimulant, and contrast the weariness that follows its use with that arising from physical exercise.
- 7. Give several illustrations to show that the use of artificial drinks is unnecessary.

UNIFORM AND PROMOTION
 EXAMINATION.—STORMONT, DUNDAS AND
 GLENGARRY,

NOVEMBER 26 AND 27, 1891.

GEOGRAPHY.

CLASS II.

Any five questions may be answered.

- 1. Define strait, zone, oasis, desert, ocean, lake, river, seaport, channel, gulf.
- 2. Make a map of the counties of Stormont, Dundas and Glengarry, indicating the railways, rivers, boundaries, and position of one town and five villages.
- 3. Name in order the counties of Ontario bordering on lakes Erie and Huron with their county towns.
- 4. Make a diagram to show the position of the zones.
- 5. Name the countries of North America, and five rivers in it, with the names of the bodies of water into which they flow.
- 6. Where are Montreal, Toronto, Washington, Victoria, Winnipeg, Halifax, Hamilton, London, Ottawa and Kingston?
- 7. Name the bodies of water passed over, and

the cities and towns passed by, by a boat sailing from Toronto to Montreal.

Values—15 each.

GEOGRAPHY.

CLASS IV.

Any five questions to be answered.

- 1. Name the countries from which we obtain ginger, cinnamon, tea, cloves, pepper, allspice, raisins, mace, coffee, nutmeg, and (b) state which of them is the root, bark, leaf, flower-bud, fruit, seed-covering or seed of the plant supplying them.
- 2. What (a) bodies of water, (b) railway, (c) cities and (d) countries would be seen by a person on a tour round the world, from Liverpool via Aden, Vancouver and Montreal?
- 3. Show by a diagram (a) the position of the equator, tropics, polar circles, zones and (b) that the width of each of the Temperate zones is 43° nearly.
- 4. Give the latitude and longitude (a) of the poles, (b) of a place on the equator west of Africa, through which the First Meridian passes.
- 5. Make a map showing (a) the River St. Lawrence (b) the great lakes and rivers from which it receives its waters, (c) portions of the countries drained by it, (d) Sault Ste. Marie, Welland, Morrisburgh, Cornwall and Lachine canals.
- 6. Show on the above map the positions of Chicago, Detroit, Port Arthur, Owen Sound, Buffalo, Ogdensburgh, Port Hope, Hamilton, Toronto, Kingston, Prescott, Ottawa, Montreal, Three Rivers, Quebec.
- 7. Define longitude, meridian, latitude, parallels of latitude, ecliptic, Zenith, Nadir, equator, horizon, plane of the earth's orbit.
- 8. What (a) would likely be the cargo of a ship that left Montreal for Liverpool? (b) Of one which arrived from the West Indies?
- 9. Where are the following found in Canada? Amber, gold, silver, nickel, copper, iron, gypsum, mica, asbestos, salt.
- 10. Illustrate by a diagram the changes of the seasons.
- 11. What two places are connected by the tunnel which passes under the St. Clair river?
 Values—15 each.

LITERATURE—CLASS III.

OPEN Readers at page 73.

- 1. What are rapids? What rapids are here referred to? Tell where two other rapids are.
- 2. Explain the meaning of "evening chimes," of "our voices keep tune," of "our oars keep time."
- 3. What is meant by "parting hymn"? Why sing it at St. Anne's?
- 4. "Soon as the woods on the shore look dim." What time of day is meant? Why do you think so?
- 5. "Why should we yet our sail unfurl?" Answer this question.
- 6. Give in other words. "There is not a breath the blue wave to curl."
- 7. Is it correct in this case to say the blue wave? Why?
- 8. Explain what is meant by "weary oar," and "trembling moon."
- 9. Why does he ask for "cool heavens"? What would "favoring airs" be?
- 10. Was the party going up or down stream? Give your reasons.
 Open Readers at page 130.
- 11. What is the meaning of charmed, voluntarily, disturbing, returned?
- 12. "They laughed at me so much for my folly." What was his folly?
- 13. Explain the meaning of "the impression continuing in my mind," of "ambitious of favors of the great."
- 14. What is a miser? What is meant by "the esteem of his fellow citizens"?
- 15. Give some examples that you have seen of persons "paying too much for the whistle."
 Values eight each; any thirteen questions may be answered.

The Educational Journal.

Published Semi-monthly.

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

J. E. WELLS, M.A. Editor.

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TORONTO, FEBRUARY 15, 1892.

THE NEW REGULATIONS.

TEACHERS and others interested will do well to note particularly certain changes in the kind and extent of work prescribed for various classes of candidates, under the new regulations, as indicated in these columns a month ago. Two or three of these demand special attention.

(1) The examination in Literature for Entrance into the High Schools, will henceforth be based partly on the prescribed selections from the Fourth Reader, and partly on the remaining lessons in that Reader. The reason for this change is obvious and we think, good. The aim is evidently to minimize the inducement to "cramming." The change is in the right direction, if only the examination proves to be of the right character, otherwise there may be cause for complaint. A still better change would be to prescribe suitable texts to be read as wholes, as in the Primary, instead of a group of fragments, as hitherto. That advance will, no doubt, eventually come.

(2) It may be noted as a mark of progress that the standard of attainment for Specialist's Certificates has been raised, and the amount of work considerably increased.

Those concerned will do well to observe that, although the increased amount of work will not be demanded until 1893, the higher percentage will be required next July. We are of the number of those who disapprove of encouraging specialization, at the expense, as it too often is, of extent and breadth of general culture. We are by no means sure that the demand for specialists as teachers of special subjects is not in danger of being carried to an injurious extreme. But certainly if we are to have specialists certificated as such, the requirements should insure thoroughness. The only doubt, to our thinking, is whether it might not have been better to make the additions from general subjects, rather than from the specialties. But let that pass for the present. We call attention to the facts as announced, that those interested may govern themselves accordingly.

(3) A third change, which intelligent teachers will, we think, cordially approve, is that made in the test prescribed in English composition at the Entrance Examination. The candidate, it is now announced, will be expected simply to write a letter and a narrative, or description, each being of about thirty lines in length. This means, of course, that all other kinds of questions, such as have been hitherto asked, will be discontinued, and the candidate's proficiency judged entirely from his written effort. The effect upon the modes of teaching will be good, as the stress will be laid upon connected and continuous writing. This is, we are persuaded, the only natural and effective method. We commend the change most heartily.

Other changes of importance may be noticed in subsequent numbers.

THE LATE PRINCIPAL HUSTON.

IN the death of Principal Huston, of Woodstock College, the teaching profession in Ontario has suffered great loss. Mr. Huston was, no doubt, personally known to many of our readers. For such no words of appreciation or eulogy from us are needed. He was one of those rare spirits whose sympathies were broad enough to take in a very wide circle of friends. He was pre-eminently one whom to truly know was to admire and to love. In the position he for a time so well filled as Editor of the English Department of this JOURNAL, he won, we feel sure, the friendship of very many to whom he may not have been otherwise known. His heart was given to his work, as indeed it was always given to whatever duty he undertook; but he was specially interested in anything which tended to improve the methods of study and teaching of English in our schools, and when

the opportunity was offered him to do something for the promotion of that end, he gladly seized it. We believe that our readers will heartily agree with us that he did excellent service in that capacity.

Of Mr. Huston's work as English Master in the Jarvis Street Collegiate in this city, and as Principal of the Woodstock College, many of his pupils will long cherish grateful memories. We have just now on our desk a note from one of his former pupils in the Jarvis street school—now, herself an experienced and successful teacher—bearing testimony in the strongest terms to the power of his influence—an influence which will bear fruit in all the future life of the grateful recipient. In Woodstock, we have every reason to believe, Mr. Huston gave himself, with all the energies of mind and heart to the work set before him. That work, as he conceived it, was something very much broader and deeper than the mere education of the intellect. No one more clearly and practically recognized the fact that the teacher who does not constantly aim to mould, inspire, and elevate the whole nature of his pupils falls sadly short of deserving the name of educator. Mr. Huston was a real educator, in that he sought constantly the highest enlargement and well-being, intellectual, moral, and spiritual, of the young placed in his care. His "boys" were the objects of his loving solicitude in their classes and on their playground, by day and by night.

With abilities of a high order, though without special brilliancy, Mr. Huston was able, while yet a young man, to occupy with distinguished success an important and difficult position, and exert a power for good such as few attain, even in a lifetime. This was no doubt owing in part to a happy combination of personal qualities, and in part to a passion for work which, there is reason to believe, sometimes led him to overtask his strength. But behind and above all native qualities, and all faithful cultivation, the secret of his noble life is doubtless to be found in the fact that he had set the one perfect man before him as his ideal, that he sought to live and labor ever as in his great Taskmaster's eye. Herein lay the source of his strength and inspiration, and this it is which made him an example worthy of imitation by all teachers

EDITORIAL NOTES.

THE next meeting of the National Educational Association of the United States will be held at Saratoga Springs, N.Y., July 12th to 15th inclusive. It is announced by the Executive that facilities are almost unlimited for the comfortable accommodation at hotels and boarding houses, of a very

large number, at reasonable rates. A large hall for the meetings of the general Association, with a seating capacity of over five thousand, and suitable halls for the department meetings have been secured.

THE following from the *N. Y. School Journal*, our readers will heartily endorse:

The telegraph tells us that Chas. H. Spurgeon is dead. For how many years he has stood for the right! He has been a teacher in a large and broad sense to a vast number; stating the truth; putting it into a form for practical application; urging people to rise to a higher platform of action; to be ruled by the spirit and not by the sense; to seek after wisdom; to draw inspiration from the Bible; to do good, and to live to do good. All these are features of the true teacher; all these are the ends to be sought in every school-room in the land. The teacher cannot but feel that one has fallen in the ranks and all the rest must exert themselves to make the loss good.

* Literary Notes. *

"OUR Little Men and Women, for Youngest Readers at Home and in School," will contain in addition to bright short stories, natural history papers, "pieces to speak," jingles and beautiful pictures, etc., in every number, the following serials: "A Boy and a Girl," by Elizabeth Cumings. "The Doings of the Studio Dolls," by E. S. Tucker; pretty, funny, quaint. These dolls live in a "painter-lady's" studio. The fun will set little men and women laughing everywhere. "Joker and His Relations," by Mary C. Crowley—the tale of a monkey, the adventures he had, and the relations he met. "All About Things," by Annie L. Hannah—what you want to know about "Raisins," "Paper," etc. "Talks by Queer Folks," by Mary E. Bamford—animals' accounts of themselves from their own point of view. \$1.00 a year. D. Lothrop Co., Pubs., Boston:

The Expository Times for February contains numerous "Notes of Recent Exposition," "Two Old Testament Scholars," by Professor Davidson, LL.D.; "My Most Useful Books," by Principal Harding, M.A.; "Requests and Replies," by half-a-dozen of the ablest theologians of the day; "The Sower," by Rev. W. Kean, B.D.; "Another instalment of the Narratives of Genesis," by Professor Herbert E. Ryle, M.A.; "Discussions and Notes on 'The Unpardonable Sin,'" by five able writers; and a dozen or more other contributions on questions of living interest, many of them by prominent preachers and writers. It is a valuable number of a most valuable magazine, which every one who is interested in the study of the religious questions of the day—and who is not—should have, if he can afford it. Toronto: The Presbyterian News Co.

THE most timely article in the February *Century* is the one written by Mr. C. C. Buel, assistant editor of the magazine, which records the results of a personal investigation by him, in behalf of the readers of *The*

Century, into the history, methods, and designs of a just now notorious institution. The title of the paper is "The Degradation of a State; or, the Charitable Career of the Louisiana Lottery." Amongst other articles deserving prominent mention are, a most notable paper by Edward Atkinson, on "The Australian Registry of Land Titles," which will doubtless help forward a needed reform which seems to have made a start in this country, and "Recent Discoveries Concerning the Gulf Stream," by J. E. Pillsbury, a very fresh, curious, and valuable contribution to an old subject. Dr. Wheatley's concluding paper on "The Jews in New York," is strikingly illustrated by a group of five artists, and contains information on this very timely and interesting subject never before gathered together. The Kipling-Balestier Serial, a short story by the latter, numerous poems by well-known writers, Topics of the Time, make up the number.

PROFESSOR LANCIANI'S paper on "The Pageant at Rome in the year 17 B. C.," has the foremost place in the *Atlantic Monthly* for February. It is devoted to an account of the public games held in Rome seventeen years before Christ, and instituted under the patronage of Augustus, the Senate, and the College of Quindecimviri. Writing of Rome reminds us of Mr. Crawford's second instalment of "Don Orsino," which gives incidentally an idea of the mania for speculation and building lately rife in Rome, and contains a vivid description of the Pope assisting at a service at St. Peter's. Another subject, still Italian, is "A Venetian Printer-Publisher in the Sixteenth Century." Venice is also the scene of a charming little sketch called "The Descendant of the Doges," by Harriet Lewis Bradley. Isabel F. Hapgood, who showed us "Count Tolstoi at Home," in a recent number of the *Atlantic*, has an article on "A Journey on the Volga," a graphic sketch of Russian life. Henrietta Channing Dana discusses "What French Girls Study," and gives a very sympathetic picture of the life of a French school, and the kind of training which French girls receive in it. Professor N. S. Shaler, of Harvard University, a Kentuckian by birth, writes with knowledge on "The Border State Men of the Civil War." Professor E. P. Evans writes about "The Nearness of Animals to Men," and Mr. Albert H. Tolman devotes an able paper to "Studies in Macbeth." A discussion of "The League as a Political Instrument," and reviews of a dozen or more volumes of recent fiction, under the title of "The Short Story," complete a number well composed, and thoroughly worth reading. Houghton Mifflin & Co., Boston.

AT the very front door of the February *St. Nicholas* comes J. H. Dolph's clever dog and cat picture, showing a plump puppy, evidently fed to repletion, graciously consenting to the disposal of his dinner by his friends the kittens. Then there is the picture of Sir Jeffrey Hudson, the dwarf of eighteen inches stature, who figures so prominently in the history of the times of Henrietta Maria of England, and whose adventures and exploits are told in the first of a series of articles on "Historic Dwarfs,"

by Mary Shears Roberts. Next we see a scientific-looking diagram which proves to be "A Record of Master Harry's Ups and Downs," his variations in cheerfulness during an absence of his mother from home. This is followed by Mr. Taber's spirited drawing, showing a company of Dutch soldiers charging over the ice on skates, the historic basis for which we eagerly read in "The Battle on Skates." Mr. J. O. Davidson next tells us with pen and pencil something about "Electric Lights at Sea." Malcolm Douglas finds something to say in rollicking mood concerning "The Little Man in the Orchestra." Oliver Herford, single-handed, sets at rest any question as to the invention of the umbrella. "A Strike in the Nursery" follows. The children are drawn as in revolt, with banners, declaring their ultimatum. Of stouter fibre are the serials and continued articles, quite numerous and weighty enough to redeem the number from frivolity. How the children of a quarter of a century ago would have reveled in such a magazine! No doubt they enjoy it to-day, but their palates must be somewhat cloyed, for like the princes and princesses of the fairy-tales, children are now fed on sweetmeats daily.

Scribner's Magazine for February contains eight illustrated articles representing the work of Robert Blum, W. L. Metcalfe, Irving R. Wiles, J. H. Twachtman, W. L. Taylor, and other skilful artists. In the group of Australian articles there is a vivid and picturesque description of pastoral life on the great sheep ranches which are peculiar to that country, fully illustrated from drawings by Birge Harrison, who has but recently returned from a long sojourn in that region. The notable group on Practical Charities is represented in this issue by "A Model Working-Girls' Club," the Polytechnic Young Woman's Institute, of London, described by Dr. Albert Shaw, a close student of social and economic questions. The perilous work to which the Revenue-Cutter Service of the United States is assigned during the winter months in relieving vessels in distress, is described by Lieutenant Percy W. Thompson, of the cutter *Dexter*, and some of the most notable rescues are pictured by Samuel A. Wood. Dr. Benjamin Sharp, who was one of the party of naturalists which accompanied Lieutenant Peary to Greenland, tells about the isolated race discovered in 1813, in North Greenland, by Sir John Ross and named the Arctic Highlanders. Mr. Coffin's second article on "American Illustration of to-day," discusses a notable group of artists. Another art paper is the unpublished reminiscences of Henry Greenough, which concern "Washington Allston as a Painter." The fiction includes short stories by Octave Thanet, Edwin C. Martin, Bliss Perry, and the sixth instalment of "The Wreck." An amusing paper on an old Dutch Cookery Book of 1752, by the wife of Commander Chadwick, U.S.N., an essay on "The Illusions of Memory," by Professor William H. Burnham, poems by Rose Hawthorne Lathrop, Archibald Lampman, and Eliza Woodworth, with the Point of View, complete a number which appeals to a wide circle of readers interested in many things.

✻ Hints and Helps. ✻

IRON-CLAD PROGRAMMES.

BY R. D. K.

It is an excellent thing to have a programme and have it written upon the blackboard and to follow it; still it is not to be iron-clad.

There will be mornings by and by when the teacher will pass a miracle of winter beauty on her way to school, if she will "look up and not down." Every twig of the leafless trees will be sheathed in a snowy ice covering by the night fairies, and the morning sun will revel in revealing the rainbow hues imprisoned in the transparent frost work. It will all be so short-lived—this marvel of beauty—that it will seem wrong to go inside the school-room. But school bells are merciless and nine o'clock brings the little folks all together, and the door is shut.

The programme says "Opening exercises, 9—9.15," and the next thing perhaps is the "sponge-wetting" and the "slate cleaning." What shall be done? Go on as usual? Never! That programme may be the best thing seven mornings out of eight; but *this is the eighth morning*. No devotional exercises ever dreamed of can do for those children what *may* be done for them, if the teacher knows *what to do* and what to say about that dissolving beauty outside.

The artistic, ethical lesson of the sparkling crystals lovingly encircling the sleeping life within, may not be presented through nature's handiwork again during the entire season. Slates and sponges can wait.

Iron-clad rules concerning tardiness often work a wrong that never can be righted. "Why are you late this morning?" "I had to go to the drug store; my little brother is sick." The rigid regulation for tardiness (if the case is truthful) has no place here. A sympathetic touch on the head of the late comer as she passes to her seat will show to the observant school, that a sense of fairness lies behind the strictest rule.

Was there no time in the imperative demand of programme routine to speak of Whittier's birthday this week? It is something to be always remembered by these children that they lived in the sunset of Whittier's life? Shall they not get a glimpse of the quiet, golden tints before it is too late?

While the work of the schools must be systematically carried forward, the children who make up these schools are not created for the sole purpose of carrying out a programme: they are there to be trained to be men and women and not to be dwarfed, narrowed, and bent to fit an iron-bound routine.—*School Journal*.

A MANUAL OF PUNCTUATION AND SOME MATTERS OF TYPOGRAPHY

DESIGNED FOR PUPILS, TEACHERS, AND WRITERS.

BY JAMES P. TAYLOR, LINDSAY.

CHAPTER II.—THE SEMICOLON.

RULE I.

The semicolon is used to separate the clauses of a sentence, when the clauses themselves are subdivided by commas.

EXAMPLES.

1. In conduction, the bodies are in contact; in radiation, they are some distance apart.
2. If they entered a house, he sat in the parlor; if they peeped into the kitchen, he was there.

3. Off I had heard of Lucy Gray;
And, when I crossed the wild,
I chanced to see at break of day
The solitary child.

4. Napoleon, when he heard of this capitulation, was dismayed; no incident, since the battle of Trafalgar, had affected him so much; his ministers, alarmed at his depression, thought he had become suddenly indisposed.

RULE II.

The semicolon is used to separate short complete sentences, when the connexion between them is too close for periods.

EXAMPLES.

1. Another packet arrived; she too was detained; and, before we sailed, a fourth was expected.
2. Use no hurtful deceit; think innocently and justly; and, if you speak, speak accordingly.
3. The boy has turned to the right; the man takes the left; and the faster they both run, the farther they are asunder.
4. The wind and rain are over; calm is the noon of day; the clouds are divided in heaven; over the green hills flies the inconstant sun.

RULE III.

When a clause that expresses a reason or an explanation is appended to a perfect clause, the two clauses are separated by a semicolon.

EXAMPLES.

1. But even this is more ingenious than just; for muttons, beeves, and porkers are good old words for the living quadrupeds.
2. And accordingly an able man may, by patient reasoning, attain any amount of mathematical truths; because these are all implied in the definitions.
3. Make no expense but to do good to others or yourself; that is, waste nothing.
4. But, taken as separate truths, viewed in the light of fragments and brilliant aphorisms, the majority of the passages have a mode of truth; not of truth central and coherent, but of truth angular and splintered.

RULE IV.

The semicolon is used between expressions in a series that have a common dependence on an expression at the beginning, or the close, of a sentence.

EXAMPLES.

1. He said that he had been in the North-West; that he had selected a homestead there; and that he should go back in the autumn.
2. They returned with information, that the approach of that vast host was one of the most beautiful and terrible sights which could be seen; that the whole country seemed covered with men-at-arms, on horse and foot; that the number of standards, banners, and pennons [,] made so gallant a show, that the bravest and most numerous host in Christendom might be alarmed to see King Edward moving against them.
3. No day yet in the sky, but there was day in the resounding stones of the streets; in the wagons, carts, and coaches; in the workers going to various occupations; in the opening of early shops; in the traffic at markets; in the stir of the river side.
4. When we read of realms smitten with the scourge of famine or pestilence, or strewn with the bloody ashes of war; of grass growing in the streets of great cities; of ships rotting at the wharves; of fathers burying their sons; of strong men begging their bread; of fields untilled; and silent workshops, and despairing countenances.—we hear a voice of rebuke to our own clamorous sorrows and peevish complaints.

(a) But, if the clauses are short, commas are used; as, May England never be ashamed to show to the world that she can love, that she can admire, that she can worship the greatest of her poets!

RULE V.

The semicolon is used also before *as, viz., namely, to wit, that is, i.e., and e.g.*, when examples are given, or subjects enumerated.

EXAMPLES.

1. The possessive pronoun never takes the apostrophe; as, ours, yours, hers, theirs.
 2. Names of places should always begin with capitals; e.g., Buffalo, Rochester, Hamilton, Montreal.
 3. Some men distinguish the period of the world into four ages; viz., the golden age, the silver age, the brazen age and the iron age.
 4. Maria Edgeworth's Works, 10 vols. Vol. I. Castle Rackrent; An Essay on Irish Bulls; An Essay on the Noble Science of Self-Justification; Forrester; The Prussian Vase; The Good Aunt. Vol. II. Angelina; The Good French Governess; etc.
- (a) When *as, namely, i.e., etc.*, are used parenthetically, they are preceded only by a comma; as, In making these discriminations, another object has been kept in view, viz., that of showing the *difference of usage*, in respect to certain words, between the United States and England.

THE COLON.

RULE I.

The colon is sometimes used to separate two short sentences which are too closely connected to be set off into periods, but too weakly connected to be divided by a semicolon.

EXAMPLES.

1. Be on your guard against flattery: it is an insidious poison.
2. He walked deliberately into the room: no one dared oppose him.

RULE II.

The colon may be used to separate clauses that are subdivided by semicolons.

EXAMPLES.

1. For now we see through a glass darkly; but then face to face: now I know in part; but then shall I know even as also I am known.
2. Vainly we offer each ample oblation;
Vainly with gifts would his favor secure:
Richer by far is the heart's adoration;
Dearer to God are the prayers of the poor.

RULE III.

The colon is put before a long quotation, and sometimes before a specification of particulars which are not formally introduced, and especially so if the particulars are pointed by semicolons.

EXAMPLES.

1. But, after a long pause, he said: "Although I am no advocate of this man's cause," etc.
 2. In the first place, it sets aside and denies two other conceivable answers: that language is a race characteristic, and, as such, inherited from one's ancestry, along with color, physical constitution, traits of character, and the like; and that it is independently produced by each individual, in the natural course of his bodily and mental growth.
- (a) When the quotation begins a new paragraph, a dash follows the colon.

RULE IV.

The colon is used on title pages, between the place of publication and the publisher's name.

EXAMPLES.

1. Toronto: Hunter, Rose & Co.
2. New York: Appleton & Co.
3. London: Macmillan & Co.

School-Room Methods.

READING AND ELEMENTARY LITERATURE.*

BY C. H. MOORE, M. PH., SAN JOSE, CAL.

How many of the class have read "The Barefoot Boy?" Very well, and how many of you found it interesting? And why was it interesting to you, Charlie? "Because I have lived in the country and used to go barefoot myself." Mary? "Because the piece says so much about things we have all seen." Very well. Charlie, you and Mary may each copy the picture of the Barefoot Boy on the board from your books. The rest of the class may read silently the first stanza.

Now let us analyze its thought. George, who is the "little man?" Yes, why does the poet call the barefoot boy a little man? "Because he will soon be a man." Helen. "Because he acts like a man." Good. Emma, what is meant by the "cheek of tan?" "Yes, it is made brown by the sun." James, what does the poet mean by the "sunshine on thy face?" You think he "means the sunlight?" Helen. "I think he means smiles." Nellie. "I think he means to look glad and happy." Fred, explain what is meant by "thy torn brim's jaunty grace." Yes, "his hat brim was torn," but what is meant by "jaunty grace?" "His hat was ragged." Yes, you said so before; but what is meant by "grace?" "To be good." Sometimes. Nellie. "I think it means to be natural and easy." Now, what is meant by "jaunty?" Emma. "I think it means rude." George. "I think it means ragged." James, you may look it up in the dictionary. Nellie. "I think it must mean flapping up and down." Yes, that is pretty near it. James may read the meaning. "Airy, showy, fluttering."

*Given before a Teachers' Institute with a class of children in Fourth Reader.

Yes, it means flapping, fluttering, familiar And "thy torn brim's jaunty grace" means the free, easy, and fluttering manner of his hat. Helen, what is meant by, "I was once a barefoot boy?" "Whittier was once a barefoot boy." What is Whittier now? "An old man." Yes; how long ago was he a barefoot boy? James, do you know of any one else who was a barefoot boy at the same time? Yes, "Lincoln." Fred. "I think Charles Sumner was." Emma. "The poet Holmes." George, does the poet express any love and sympathy for the barefoot boy? Yes, he says, "from my heart I give thee joy."

Now you may all read silently the second stanza. Charlie, what does the poet mean by "laughing day?" "bright, sunshiny day." Helen. "Cheerful day." Mary, what is meant by "health that mocks the doctor's rules?" "I think it means to make fun of the doctor's rules." Why? "Because the boy was not sick." Has the barefoot boy any need of the doctors' medicine and rules? "No, he has too good health." James, what does the simple life of the barefoot boy teach us? Yes, "how to be strong and healthy." Helen, what does the barefoot boy learn of the bee? Yes, "where and how to gather honey." Nellie what about the flowers and birds? "He learns where they grow and live." How does the tortoise bear his shell? "It bears it on its back and it has one on its under side." Fred tell us how the woodchuck digs his cell. "He digs it with his bill." Are you quite sure? "Yes, I saw him in the tree." Yes, but that is not a woodchuck, it is a woodpecker you saw. Mary. "He digs it in the ground with his claws." Yes, by what other name is the animal called? "It is called the ground hog."

To-morrow each of you may bring me the story of the first two stanzas of "The Barefoot Boy," and for our lesson we will practice reading the poem aloud in the class.

The objects of such lessons are:

1. To secure a comprehension of the thought.
2. To stimulate further thinking in children
3. To cultivate the powers of conversation and both written and oral expression of the thought.
4. To acquire the habit of reading critically and masterly.—School Journal.

GEOGRAPHY.

BBB.

A LADY is visiting Mrs. Brown. Johnny enters the room, and seeing his friend, comes forward to shake hands with her. She asks him to sit down beside her and they chat for a little time about his dog Jerry, his colt Oliver, and the fine sleighing. By and by she asks, "Where do you go to school, Johnny?" What would he answer?

TENA—"I go to No. 4."

What is No. 4?

GEORGE—"The school section."

Who will venture to tell us what a section is?

(Several hands half up and then down. Only one hand up.)

FRANK—"All the people that send their children to that school."

The answer is his own, and is commended, but passes without adverse criticism, lest fright should put other answers to flight.

What section is north of ours? East? North-West? No. 11 is what direction from us? etc.

With some help the children learn that there are schools numbered from 1 to 16.

These sixteen sections, form what?

IDA—"They make the township of Somewhere."

I wonder why one section is 4, another 8 and the one just next to it 1. Isn't that strange? Well, yes, they agree that it is odd, but they never thought of it before. More questions have to be asked to answer that one.

Think of a picture of Somewhere as it was forty years ago. What do you see?

SAM—"It is all over trees, and hush, and Indians, and—"

That is all we need just at present. Where has gone all the bush?

MAUD—"The men chopped down the trees, and the fire burnt a lot of it."

The men, what men! Where did they come from?

JOHN—"The people like what's here now; they came from the Old Country."

(The teacher jots down "The Old Country," in her note book for another day.)

Then the children tell why the men chopped the

trees, viz., to get material for house and stable building, and in order to clear the land for crops.

When the people were rightly settled they would wish the children to learn to read and write, so they built—

FRED—"A schoolhouse."

And called it—

FRANK—"No. 1."

And the people who built the next one, called theirs—

MAUD—"No. 2."

The class have caught the idea of the numbering and several members of the class are eager to explain. That settled, the class are sent back to Somewhere, forty years ago. They can tell much about it and they delight to do so.

The trees were chopped; the fire swept over the land; the deer, the beavers, the bears, and all the wild animals, went away to seek the deep woods, and the Indians followed them.

Johnny shows us on the blackboard map the Indian Reserves, ("preserves," George called them.) (The Indians will be a subject for another day's talk.)

More settlers came in; roads were built. Just here, Robert informs the class that Somewhere was a cedar swamp, and James defines a swamp as "a place all water, and marsh, and soft places, with trees growing in it."

Information regarding the roads pours in. The stumps were burned, small logs laid down side by side, ditches dug on each side of the way, and the earth thrown on the road. Where there were no logs the wagons sank often to the hubs, and the oxen stood helpless.

Through all the lesson there is much merriment for all know so much that it is quite irksome to consider the arrangement of the matter, so some of the answers are capital jokes.

Why didn't the people use democrats and covered buggies?

MAUD—"Because there weren't any here."

FRANK—"They would have been broken going over the logs."

Where did the settlers get their clothes and flour? Nobody knows. Then a suggestion brings up the lake with its boats in summer, and its splendid ice-road in winter. The boats brought the goods to X—, many miles away from the settlement, and the men and women back from the shore trudged the weary way through the bush with sacks on their backs, for the articles that were to keep their families from freezing or starving. The children think their grandfathers and grandmothers must have had to work very, very hard. When they read "Grandpa" in the Second Reader probably some of them will remember this.

All is changed. What is there now instead of bush?

TENA—"Fields, houses and barns."

GEORGE—"Villages and fences."

IDA—"The railway."

The fire rendered good service though it did not leave us as many trees as we should like to have.

What sort of trees grew in our forests? Rapidly at first and then slowly one name from each is written on the blackboard, cedar, hemlock, pine, maple, elm, ash, ironwood, cherry and birch.

Of what are the fences built? The pupils each contribute till all know about the cedar rails, the process of splitting, and have added to their collection of words the odd one zigzag. No material for more rails exists, and the new fences are built with posts, boards, and pickets or wire.

What is grown in the fields? Why will not corn ripen here?

(The answer to that question suggests a talk on climate.)

What fruits do our orchards and gardens yield? Name the vegetables.

The occupation of the people is called farming, some one says. Then the word agriculture is introduced.

And so the lesson proceeds, if the twenty minutes have not already flown.

Subjects for talks will always be suggesting themselves. If noted down at the time the thought of one occurs, we shall find one suitable when the children are heavy. For example:

I. The railway—ties, rails, cattle-guards, crossings, embankments, lorries or jiggers, stations, passenger cars, baggage cars, cattle cars, gravel trains, engine, section men, section boss, etc.

II. The product for which the county is noted, be it copper, stone, salt, petroleum or fruit.

III. The occupation of the village people.

IV. Imports.

V. Exports.

VI. Our lake. Very many counties can boast of that and the children may well be proud of their lake.

VII. The fort or the lighthouse that is a centre of interest to the visitor.

The conversations usually suggest seat-work. These lessons do not follow each other day after day. There are land and water definitions to be illustrated and learned. Names of townships, rivers, towns, villages, boundaries, etc., to be familiarized. The globe and the map of the world cannot be neglected.

INCIDENTALS.

I. Girls, when you are drying the dishes to-night look on the backs of the plates and tell us to-morrow where your dishes were made.

II. Where were your brooms made?

III. Look into your clock and find where it came from.

IV. While you are warming your feet, just find out where the stove was made.

V. Your boots, where did they come from?

VI. Boys, look about the barn, examine pitchforks, rakes, mowers, binders, cutting boxes and find where they were manufactured.

VII. Coal oil, salt—what county sends them to you?

These or similar questions may be given to the seniors, one at a time; the second class will be anxious to observe too.

* Correspondence. *

HOME LESSONS.

To the Editor of THE EDUCATIONAL JOURNAL.

SIR,—I hope you will continue to expose the folly and cruelty of parents who insist on the children being loaded up with home work. Let me enforce your too brief and mild homily in the last number of THE EDUCATIONAL JOURNAL by a statement of my own experience. With a view to testing some methods not ordinarily pursued, I asked and obtained leave to give a lesson daily in a ladies' school, to a preparatory class of girls, averaging eleven, and knowing little of English or Arithmetic. I give them practice in composition and I require them to practice the analysis of sentences. So far as the sentence goes these processes are the converse each of the other, and I can see already that their joint effect will be to make the pupils phenomenally expert English scholars for their age. But several of the mothers have complained to the proprietors of the school because their girls do not get home work, and because they are not "getting on" with their subjects. Their idea of getting on is getting over the ground in a text-book. I may be able to convince them that there is a better way, but meanwhile I must run the risk of having my class broken up and the girls sent where they will be spoiled with home work.

My present feeling is one of intense indignation and disgust, not at the poor, deluded mothers—what can they know about the matter?—but at the public school system of this city, which is responsible for the mother's delusion. One member of my class has come to it from one of the city schools. She has been learning "grammar," but such grammar and such learning! It saddens me to think of the fearful infliction that Public School pupils here and elsewhere have to undergo, my view of the matter being strengthened by my own recollections of grammar in schools. The folly and cruelty of the mothers will remain until the two inspectors and four supervising principals of this city succeed in rationalizing the treatment of English and other subjects in the Public Schools.

OBSERVER.

TORONTO, February 3, 1892.

It is never too late to give up our prejudices.—*Thoreau.*

WHERE a book raises your spirit, and inspires you with noble and courageous feelings, seek no other rule to judge the event by; it is good and made by a good workman.—*John de la Bruyere.*

Primary Department.

METHODS IN MULTIPLICATION.

ARNOLD ALCOTT.

In reply to a request from a subscriber in the north-western part of Ontario, that methods in multiplication and division should be outlined in THE JOURNAL, in a manner similar to that in which I explained the way to present Addition and Subtraction to primary pupils, the following articles are given.

I trust that I shall be able to give on paper, a sufficiently lucid explanation of my various devices for developing not only the rules, but also *rapidity*; and I hope that our readers will not hesitate to ask for papers on special subjects, but will accept the oft-repeated invitation of the Primary Department, for a definite request from any one interested in this branch of the work.

MULTIPLICATION.

First—No rote learning of the multiplication table is even thought of. The pedagogical maxim "learn to do by doing," is supreme here. Have the children make and learn their multiplication from addition. Multiplication and addition are mutual compliments, and should be taught, in my opinion, simultaneously. The tables are learned by applying them in examples, not by the sing-song method of,—well, I was going to say twenty-five years ago, but, ah me! the writer learned these tables by rote, and it is not nearly so long ago as that.

In my papers on Addition last year, I think I stated that the plan which I followed, was to teach, first the tens, then the doubles, and then the sum of nine and eight; nine and seven; and so on, until the forty-five combinations in all their forms, were taught.

Now let me show, just how and when I think multiplication may be very dexterously introduced.

When teaching the doubles, I may introduce the table of two lines by means of the following device:—

1 2 3	4 5 6	7 8 9
1 2 3	4 5 6	7 8 9

Pupils know one and one makes two; now introduce multiplication, by asking how many one's make two; how many two's make four; and so on. This is, of course, quite plain to the pupils, as they see at a glance, just how many two's, how many three's, etc., there are. I have used this device representing the walls of the houses in numbers (which, by the way, I complete with tops, chimneys, etc., to attract attention, but which cannot well be represented in print) and to separate the digits for drill into three sets, thus proceeding from the simple to the complex. This method is continued for all the tables to nine times inclusive thus,

1 2 3	4 5 6	7 8 9
1 2 3	4 5 6	7 8 9
1 2 3	4 5 6	7 8 9
1 2 3	4 5 6	7 8 9
1 2 3	4 5 6	7 8 9

By the way, this is an excellent time to show that multiplication is addition very

much shortened. Illustrate by having these numbers put down nine times. Now, another device which closely connects addition and multiplication, and which shows the utter folly of teaching the one or the other in an isolated manner. I have a column thus,

2
2
—
2
2
2
2
—

This is for addition. Now, I may introduce multiplication by drawing a line below the second two, as above. Thus pupils see that two twos make four, and soon, they grasp the six twos at a glance and do not go through the time-wasting mental process of saying four, six, eight, ten, etc. In a similar manner, as all my readers have observed, the other tables may be taught. This is a splendid plan for encouraging rapidity of eye and of thought.

But my space limit says that I must stop, although I am very anxious to give some important points at this stage. However, as THE JOURNAL has no room to spare, I must close, as our newspaper story-writers do, by saying,

(To be continued)

WHY WE TELL STORIES.

RHODA LEE.

"WHAT kind of stories does your teacher tell you Bob," I asked, this morning, as our lately-initiated school-boy was squeezing his arms through the straps of his bag, in the most approved fashion. "Splendid ones, you just ought to hear them," he replied. "Ever hear a story about a boy called Abraham something?" A suggestion of "Lincoln" assisted his memory, and he proceeded to tell us how the illustrious youth had "achieved greatness"—ciphering by the light of the open fire, on an old wooden shovel, which when covered, he planed off with his father's knife, and reading everything on which he could lay hands. "And teacher said he was one of the smartest men ever lived, and it was all because he kept at things, and never gave up. Must have been pretty hard work," he added, with a ring in his childish voice, that told me the story would not be without its effect.

This incident suggested to me a truth all primary teachers need to realize, namely, the great value of good stories. I have seen people smile at some good old fairy story or fable, and offer remarks on the "entertainment," "amusement," etc., such "nonsense" afforded. Remarks such as these, must have been made entirely without thought, or they would never have found utterance.

The reasons why the telling of stories to children in Primary grades is urged are:—
1. It introduces them to literature. 2. They have an ethical value. 3. They furnish a training in reproduction, which is a preparation for all advanced study requiring that power.

With these three thoughts in view, you will agree with me in thinking the time

given to judicious story-telling, far from being wasted, or merely affording amusement. You will also admit, that in this light there ought to be greater care shown in the choice of stories.

It is quite possible to introduce children to literature in this way. In telling a story from Charles Kingsley or Hans Anderson, I would stop to tell the children something of the writer. Edward Everett Hale, Jean Ingelow, Mrs. Thaxter and Julia Dewey have given us stories embodying beautiful thoughts, which with Grimm and Æsop make our book-shelf all that could be desired.

The ethical value of good stories is, of course, indisputable. A moral truth appraised in the attractive role of a story, will find its way to a child's heart, when formal precepts are unheeded and preaching is antagonized. Direct homilies and reasoning succeed but seldom with the "grown-up" members of society. Is it a matter for wonder that they frequently fail with the little folks?

Frœbel says,

Often may a symbol teach

What the reason may not reach.

And the Great Teacher of the human race has shown us a wonderful example of true teaching. He truly taught that "seeing they might see, and hearing they might hear."

Reproduction of stories is a work that should begin with the earliest days at school. At first it can only be done orally and with the assistance of the teacher, but later the work may be written and read by the child without the help of questioning. This is a foundation for after-work, for much of school-work consists in making another's thought one's own. Anything that will increase the power is worth cultivating.

Reverting for a moment to the second reason for story-telling, does not a moment's reflection bring up instances where a story, allegorical or otherwise, did better work than half an hour's moralizing? Think of it, a strong temptation, a first offence, a sensitive, easily discouraged child. And compare the two ways of presenting a recurrence of the act. Of course what would succeed with one child may fail with another. At all events, let us not undervalue "Story-time."

Book Notices, etc.

Swedish Educational Gymnastics. By Hartviz Nissen. F. A. Davis, Publisher, Philadelphia and London.

The exercises in this book, set forth in excellent order, made plain with copious illustrations and most attractively presented by the publisher, set forth very clearly the admirable Swedish system of gymnastics. The system can be easily understood by any one with ordinary intelligence. A study of it cannot fail to be helpful to teachers, even though they may from necessity or choice use other systems.

Among books received is "The History of David Grieve," by Mrs. Humphrey Ward, author of "Robert Elsmere." It is published by the Copp, Clark Co., Toronto, and was issued simultaneously with the editions by the London and New York publishers. The fame that was for a time achieved by "Robert Elsmere" has whetted the appetite of novel readers, for another sample of work by the same author. The book will be more fully noticed in a subsequent number.

HIGGINS (who has been coaxed into telling) — "Well, my dear, I propose, firstly, to give you an exquisite little gold-handled knife."
 MRS. HIGGINS — "A knife! Why, Algy, dear, edge tools cut friendship."
 HIGGINS — "Well, you know, my love, there's no friendship between us now. We're married." — *Oil City Blizzard.*

"AH, only those who cannot sleep know half of sleep's delights! Mine eyes, so weary, have not come together these three nights."
 "How's that?" asked one whose sympathy was plainly to be seen.
 "Because, dear friend, do you not see My nose was there between?"
 — *Brooklyn Life.*

HE — "Will you marry me? Your answer, quick!"
 SHE (as he makes a motion to take something out of his vest-pocket) — "Oh, don't, don't, Fred! I will marry you, but don't, don't!"
 HE — "Don't what? I was simply reaching for the engagement-ring."
 SHE (relieved) — "Oh, I thought—I was afraid it was a dynamite bomb!" — *Boston News.*

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ALIENIST — "I see nothing in the patient to denote insanity."
 INQUIRER — "You're sure of that, are you, doctor? I'm particular about this thing, you know, because she is my wife."
 ALIENIST — "Ah, is that so? That's important, though even that may indicate only temporary aberration." — *Boston Transcript.*

MRS. WANGLE — "I have just returned from a visit to that poor family that our dear, good minister is so much interested in."
 WANGLE — "I should think your dear, good minister would call on them himself."
 MRS. WANGLE — "How can he, the poor man? He is over in Europe." — *Brooklyn Life.*

AN average man of fifty has spent six thousand days, or nearly twenty years, in sleep. To a club man who sits up with poker that seems an enormous amount of time to waste in bed. — *Picayune.*

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 A Day.**

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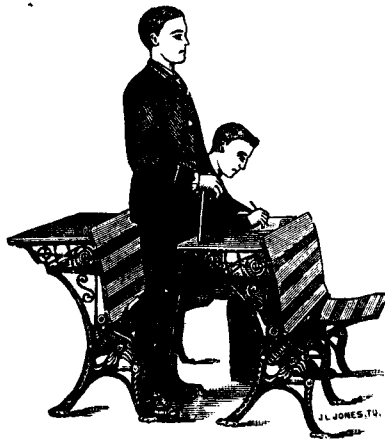
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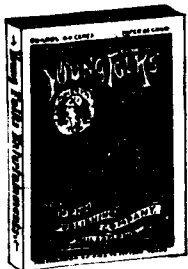
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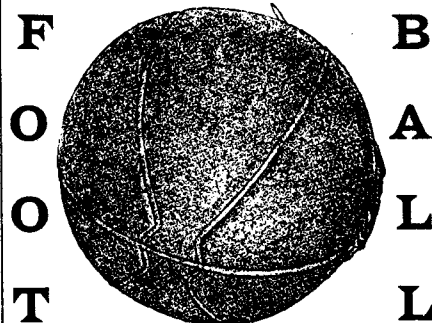
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