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* Editorial Notes. *

FROM the Report of the Minister of Education for 1889 it appears that in that year twenty-one per cent., or more than one-fifth of the rural school population of Ontario attended school less than one hundred days in the year. In towns the absentees numbered about fifteen per cent.; in cities about five per cent.

AN educational exchange referring to the coming great International Teachers' Convention, pertinently says: "There will be more of a "reciprocity" feeling on both sides after this meeting." The remark is suggestive of the great power making for peace, friendship and righteousness between the two nations which ought to be, and we trust will be the outcome of this and similar meetings. Why should not two peoples with so much in common, not only trade freely with each other, but live side by side in perpetual peace and mutual good will?

WILL the Inspectors, or the Secretaries, do us the favor to notify us two weeks or so in advance, of the times and places of meeting of the associations or institutes? We are especially desirous of having THE JOURNAL represented at every meeting, but are often unable to find out when and where they are to meet. This fact will explain why we had no representative and no sample copies at one or two recent Associations. We shall be grateful for this kindness.

IN reply to enquiries from various quarters we may explain that under the new arrangement between the Education Department and the University Senate, the High School Leaving Examinations are accepted *pro tanto* for Junior Matriculation. On any subjects in the University curriculum not included in the Leaving Examination, the student will still have to pass the University Supplementary Examination. The University curriculum remains as before.

AN exchange says:

New York city talks of pensioning her male teachers at the age of sixty, if they have taught in the city thirty years, and the women at fifty-five, if they have taught twenty-five years. The pension is to be half salary, and is to be paid the same as other salaries, during the natural life of the teacher. At sixty-five and sixty respectively the board may retire a teacher on pension without application. The lowest pension is to be \$500.

While we are scarcely prepared to express disapproval of such an arrangement, a much better one would be, in our opinion, to pay teachers such reasonable salaries as would enable them to make provision for old age during a reasonable term of service, without becoming pensioners upon the public funds.

MR. TAIT, one of the members of the Local Legislature for the city of Toronto, recently submitted a petition from ninety-one citizens of that city, asking for compulsory school regulations for the attendance of children between six and fourteen years of age; for the appointment of truant officers; for free school books, for the election of trustees on the day of the municipal elections, and for compelling Public School Boards to provide accommodation for all children of school age. The wonder is why only ninety-one signatures, when presumably it would have been easy to secure the names of twenty times that number. Probably it was thought that that number would be sufficient to bring the questions before the House.

PROFESSOR GEORGE E. HOWARD has in the *Atlantic Monthly* for March an article on "The State University in America." Professor Howard believes that the work of higher education in this country will in

the future be divided among three classes of institutions: the State University, a group of richly endowed private institutions, and a small body of denominational colleges. Of these he believes the State University to be, from a national point of view, the most important, thinking that eventually every new State and perhaps every State will have a University, which, as a rule will outrank every other school within the borders. Professor Howard should be in a better position to form an opinion than we, but we shall be a good deal surprised if other observers of equal penetration, looking from other points of view, are not able to discern a tendency in just the opposite direction. It would be strange if, in a Republic, the lines of educational development do not trend more and more towards voluntarism and the freedom of discussion and the fairness in regard to taxation which it alone can bring.

THE editor of the English department is making tremendous demands upon our space. In fact we are obliged to hold over some portions of his "copy" almost every time. Well, we do not complain. We like enthusiasm. Moreover, if we have an educational hobby it is an English hobby, for we believe that to teach our boys and girls to read, appreciate and enjoy the unequalled classics of our own vernacular, is to do the very best educational work that can be done from almost every point of view, intellectual, æsthetic, social, or moral. Our readers will not, we are sure, fail to appreciate all that is being done for them in this and other of our special departments. The reputation of our Mathematical department and its editor is of long standing, and too well established to need that we should even call attention to it. The voluminous correspondence of the department proves that it gets a very liberal share of attention. The papers of "Arnold Alcott" and "Rhoda Lee," in the Primary Department and those of "Bebe," for the Public School generally, cannot fail, we are sure, to be very helpful to those for whom they are specially intended. We are sure, too, that these editors will be glad to receive questions, suggestions, and criticisms, and will give them their best attention.

✱ Special Papers. ✱

* FORMATION OF GOOD HABITS.

MISS M. H. DAVIS.

IN TWO PARTS.—I

Good habits in children, are, I think, like flowers. In some they are indigenous to the soil, requiring scarcely any care; in others, like exotics, requiring careful cultivation and encouragement; while in a third class the soil is so unfavorable that no amount of painstaking produces anything but unsatisfactory results. In the last, the perception of the fitness of things seems to be wholly wanting. Why it is so might be an interesting question to scientists.

The first essentials, then, to the cultivation of good habits are favorable conditions and surroundings; though sometimes, I admit, they are found under most adverse circumstances. From this point of view arises the question: Is the parent or the teacher the real gardener? Undoubtedly the first claims the higher authority, but where the first fails, either through incapacity or want of moral principle, then it becomes the teacher's duty, as far as in him lies, to supply the lack, and prevent the weeds from choking either the sickly or the healthy plant.

Foremost of these essentials to the formation or cultivation of good habits is a comfortable school-room, well lighted, with closely fitting sashes that will not stun the ears on every windy day with their ceaseless rattling. The room should be heated with hot air or steam, if possible, for children cannot remain at rest, much less study, while being slowly roasted alongside a huge box stove placed in the middle of the room, any more than can their companions, who, in other parts of the room, are suffering with their feet at freezing point, the teacher being meanwhile distracted with "Please I'm too hot," from one quarter, while from another comes the request, "Please may I go to the stove," to say nothing of the incessant worry caused by the conflict between his love of order and discipline, and his feelings of compassion for the pupils, who in many cases, among the poorer classes, are neither comfortably clothed nor shod. It is indeed no unusual thing for some poor shivering little mortal, who has walked perhaps a mile to school on a keen frosty morning, to enter the school-room crying from the pain of tingling hands and feet, an event which is sure to bring the whole work of the school to a stand, while the teacher chafes the little sufferer's hands till the circulation is restored, and one or two willing workers among the larger pupils remove the boots, *often water-soaked*, from the half frozen feet. This case is by no means imaginary.

Next to a comfortable room, a comfortable desk, with slightly sloping back and of a proper height for the occupant, is indispensable if a child is to maintain a proper position without growing stooped or round shouldered while at work.

With all his physical wants attended to, the child is now in a position for work.

I may remark here that it is not by repressing all that is natural in a child but by guiding it into safe channels that we form the basis of its character and fit it for all the conditions of life as well as for its final destiny. Goldwin Smith, who is no mean authority on such matters, in a lecture delivered in one of the High Schools in this county many years ago, highly commended the advantage of having a *long youth* as school children before being thrust into the cares of life.

As my subject deals principally with the culture of good habits in the school-room and the best means of promoting them, I may combine some of those habits that appear to me to be naturally connected.

1st. Punctuality and order.

2nd. Industry and perseverance.

3rd. Obedience and cleanliness.

We are told that order is Heaven's first law; but I have placed punctuality first, as without it there can be no order in a school-room. As a stream cannot be pure unless the fountain itself be pure, so to ensure good habits in the children, we must begin with the teacher, who is, or ought to be, the visible and practical exponent of all the good qualities we expect the pupils to acquire. And let no one imagine that his duties to his pupils cease when the four o'clock bell rings, that the rough, noisy, coarse and even profane talk frequently indulged in by boys on their way from school should pass unnoticed, or that the equally coarse, unrefined slang and loud laughter by which some girls (few in number it is to be hoped), attract attention on the streets, is something with which a teacher has nothing to do, even though he may have been a listener to it all, for he may rest assured that his pupil's manners will be *justly or unjustly* considered a reflex of his own.

Children are by no means unfledged angels, as most of us, no doubt, have discovered long ago, and are largely, as we have been often told, "creatures of imitation," who very early learn to discriminate between precept and practice. Therefore if we expect them to imitate and profit by the example set them it will be by taking care that the example is all it ought to be, *and by ceaseless supervision*. To be successful, I think it is indispensable that a teacher should be a lover of children to a greater or lesser extent, one who is able to read their dispositions, feel for their difficulties and put himself in their place by sympathizing with their childish griefs and troubles, which are sometimes as overwhelming to the little ones as our greater trials are to us, and who is to them the embodiment of all knowledge (though I protest against the teacher who never admits that he makes a mistake), and who will not think his time wasted if he can but remove a stumbling block from the path of the dullest intellect under his care.

Many a teacher has lost all his labor and felt that all his efforts were wasted through having failed to realize that though a problem or theorem was very simple to him, it was *anything* but simple to the pupil.

I would pause here to pay a passing tribute of respect to the genius and merit of one of the noblest teachers that ever stood in a school-room. I refer to the late Mr.

McNevin, formerly Mathematical master in the Caledonia High School, the true friend of the painstaking student, who has often spent his much needed recess in explaining again and again a difficult problem to a dull pupil, and whom I have seen applaud with kind words and sparkling eyes the boy or girl who had detected some trivial error in a problem which he had himself placed on the board for them, regarding it as a proof that they had carefully gone over it, and had at heart tried to understand it.

With regard to Punctuality, I think the children are rarely so much to blame for the want of it as their parents. Where the child has loitered, his manner on entering the school-room usually declares the fact. Conscience which "doth make cowards of us all" generally sends the delinquent in with downcast head, hesitating step, and stealthy movement, as if anxious to evade notice; but if detained legally the offender generally assumes a confident air such as seems rather to court an enquiry, which, when made, is commonly met with the reply, "Please, mamma sent me to the store," or "Pa sent me after the cow," these errands being in the minds of the children perfectly satisfactory excuses, although they might just as well have been performed earlier or deferred till later in the day. But any discussion on the point only gives the child the impression that there is some indefinable feeling of antagonism between parent and teacher, in which, naturally, the parent has the first right to the child's attention and obedience.

Where the fault is the parents', I simply require a note to that effect. Where they cannot write, then a message sent by some older brother or sister, for unfortunately children will sometimes deviate from the truth. If the fault is that of the child, the offence will not be repeated more than once or twice if it be well understood that the offender invariably forfeits *just as many minutes* at the next recess, as nothing produces such serious thoughts as the deprivation of the usual play hour. The same treatment will always procure a prompt response to the bell, made still more effective by the dread of losing his place in his class.

I imagine that in graded schools, the maintenance of order is a much easier matter than in those that are not graded. In the first, the whole division is engaged on the same subject at the same time, and the teacher's eye is at once attracted by any disorder however slight. It is very different when there are four and even five classes in the same room, no two of which are employed in precisely the same work at the same time, and where the teacher's attention is necessarily claimed by the class reciting. The most annoying habit a teacher has to contend with, and the most difficult to prevent, is the habit of talking or whispering. Quietness is not the normal condition of a healthy child, especially between the ages of five and eight. Yet if it is to acquire knowledge, a certain amount of repression is a positive necessity. Where absolute stillness is enforced on children of the ages I have mentioned, I think *fear* must be the active agent in procuring it. If there is any other

way of compelling silence I would gladly be enlightened. I saw not long ago, a rather odd reason given for not employing lady teachers in certain city schools. It was "that they were too emotional and soft-hearted to enforce discipline, or punish where necessary." While I would condemn in the strongest manner, the hitting any child, large or small, about ears or head with hand, book or rod, yet I would not hesitate to use the strap for the suppression of falsehood, the use of bad language, wilful disobedience, or for the terrorism frequently exercised by larger pupils over little children, and would do it conscientiously, but as rarely as possible. I think children should be made to realize that there is a reserve force that can compel compliance with well-known and established rules. At the same time "cast-iron rules," as they are sometimes called, should be very few in number. One or two, I think, should be inflexible. Perfect courtesy to each other on the part of each pupil should be one. In schools like ours, where children of all grades meet on a common level, coarse and officious familiarity and rudeness on the one side, and supercilious contempt and impertinence on the other, should never be tolerated. It is in these particulars, the *home-training* or the *want of it*, makes itself felt. One thing only can prevent the growth of any bad habit, and that is unceasing watchfulness on the part of the teacher. Firmness judiciously mingled with kindness will accomplish all that can fairly be expected. A child should be accustomed to regularity in its work from its first entrance, and "Habit will then become second nature."

AN EXCELLENT "NOTION."

ONE of the best of the new educational "notions" is the "Parents' Meeting" connected with the Working Woman's School, in New York. This organization we understand to be a school of the broad industrial sort, as its title would indicate. Once a month the parents of the pupils are invited to meet the teachers of the school "to discuss methods of instruction, gain an insight into the plans of the workers, and help carry them out." The general purpose of the meeting is to bring the parents of these children and youth into vital communication with the management of the school, and thus reinforce this body by the experience and judgment of their home life. It is a marvel that this most sensible, even essential condition of good school keeping has not become one of the recognized features of common school administration. If the "New Education" means anything, its central idea is the adjustment of the methods of instruction and discipline in school to those that characterize a good family. The mother-idea is the germ of the Kindergarten and all superior primary school work; and the chief difference between the old and new educational dispensation is the natural and beautiful way in which the transition from the home to the school life is now accomplished. But, strange to say, even the well-to-do and intelligent parents of our American communities, as a rule, are in almost absolute ignorance of the way in which their children are handled by the

skilled teachers who work and are responsible for the new style of school training. How many even of the newspaper, clerical, parlor and political critics of the people's school, not to say the educational "reformers" of the day—would be able to give an intelligible account of one day's work in an ordinary graded public school? Hence the ease with which the community can be blown up to a white heat, or sent off "kiting" by any magnetic crank or brilliant theorist in education, and the most useful class of society, the superior teachers, be held under a constant fire of unjust, and often malignant criticism. Nobody seems to be to blame for this estrangement, which is one of the unfortunate results of the pre-occupation of our new life, and the mania for specialization which is shutting us all up, each in his separate cell. The way out is for the more thoughtful women of the country, under a simple organization, to put themselves in friendly unofficial communication with the teachers of the children, according to the excellent arrangement of the "Parents' Meeting" of the Working Woman's School referred to.—*Education*.

DAWDLING WITH OBJECTS.

AN exchange, whose editor regards his journal as the chief exponent of what he calls the "New Education," says: "Six months is not too long to work on the multiplication table and understand it." Read its answer to a correspondent who asks for a good method of teaching the table:—

1. You should give him some beans, and say, "Lay out two beans; lay out two more; two more," etc. (Bringing two series together) "How many beans are two beans and two beans?" (Bringing three series together) "How many beans are there in three two's?" etc., etc. 2. Let him move the beans and say, "Two two's are four," etc., etc. 3: Let him move them and say as in No. 2, and write the figure. This may require some days, possibly two weeks. But don't leave it until he can do the combining of the beans in a series of two. Don't hurry him; don't let it be a *lip combination*: let him do the combination, see how much it is, and say it and write it. Then and then only go into combining threes; and don't you think that boy is thick-headed, either. * * * Finally, kick out of your school the *lip-learning* of the multiplication table; it is a stultifying operation.

This kind of advice keeps unskilful teachers dawdling with objects long after they should have served their purpose. Think of a boy old enough to learn the table and not "thick-headed," shoving groups of beans for one hundred and twenty days, in order that he may learn and understand the multiplication table. If "learning by doing" means that we are to keep up this "everlasting grind" with objects, it is time to call a halt. To prevent "lip combination" must the average boy have groups of beans, shoe-pegs or tooth-picks before him at all times? We think not. Objects should be put aside the moment the pupil grasps the thought. To continue their use beyond this point under the plea that one must "learn by doing" is a sad waste of time, and such work—it cannot be called teaching—results in mental flabbiness. When a bright boy has twelve groups of threes and brings them together saying, two threes are six, three threes are nine, and so on, he soon clearly sees just how it is, and there can be no good

reason for keeping him at the same task for two weeks. Then it is time to put objects aside and have him write the table of threes, using figures. When he repeats 4 times 3 are 12, etc., he will see the groups as plainly as though the objects were before him. This is mental seeing and mental doing, a step in advance, requiring a little more effort, but resulting in increase of mental strength.

Have the boy make the table of threes on a bit of paper and put it in his pocket for reference. Tell him that there is no way of learning it without hard work; encourage him to repeat the three ten times while on his way home, sixteen times during the evening, twelve times before breakfast and eight times while on the way to school. Give him a plenty of examples where three is used, and in a day or two he will have that table at his tongue's end. Then let him form groups, say of fours, using objects as before until he has a mental picture of the operation, and can write the fours. Drill on this table as on the threes. Proceed in the same manner with the fives, sixes, etc., and in two to three weeks the boy or girl of average capacity will master the multiplication table and understand it. The pupil who has learned in this manner will multiply much more rapidly than one who has taken six months to learn by the slow bean-sliding process. In the one case, operations have been carried on in the mind, and results were reached instantaneously; in the other, the mind has waited the slow motion of the hand, and mental moping is the result.—*School Education*.

Educational Thought.

PRESIDENT THWING, of Adelbert college, recently asked whether a higher education tends to lessen Christian enthusiasm? This depends upon the men who manage the colleges. There is nothing in the facts of Latin, Greek, algebra, chemistry or history, either to lessen or increase enthusiasm of any kind. A fact is as hard as a rock, and about as unsympathetic, but, if into these dry facts there is put heart, life and magnetism, the result will be enthusiasm. The late Dr. Winchell used to cause his pupils to be carried away with enthusiasm over geology and its allied sciences. The same was true of Professor Agassiz, but the facts these men taught were in no way different from the facts other teachers have taught, although the results were different. The fact is, the educational results of teaching depend upon what the teacher is, far more than what he knows. A dry-as-dust teacher will perpetuate his race; and a wide-awake teacher will perpetuate his. The best work of school-room comes from the heart far more than from the head.—*N. Y. School Journal*.

AN exchange wisely remarks that a teacher should ever remember that among children—however it may be among adults—*respect* always precedes *attachment*. If he would gain the love of the children he must first be worthy of their respect. He should therefore act deliberately, and always conscientiously. He should be firm, but never petulant. It is very important at the outset that he should be truly courteous and affable.—*Western Reserve School Journal*.

* English *

Edited by F. H. Sykes, M.A., of the Parkdale Collegiate Institute, Toronto, to whom communications respecting the English Department should be sent.

ENTRANCE LITERATURE.

RESIGNATION,

BY LONGFELLOW.



HENRY WADSWORTH LONGFELLOW.

I. AUTOBIOGRAPHICAL SIGNIFICANCE OF "RESIGNATION."

RESIGNATION, while representing to us the chastened feelings of fathers and mothers in general on the loss of beloved children, acquires additional interest from its connection with the poet's own life. The poem is the impression of Longfellow's feelings on the death of his infant daughter Frances. In his journal he chronicles the incidents in her short life. "Oct. 30, 1847. Fanny was christened. . . . She looked charmingly and behaved well throughout. Sept. 4, 1848. Fanny very weak and miserable. Which way will the balance of life and death turn? 10th. A day of agony; the physicians have no longer any hope; I cannot yet abandon it. Motionless she lies; only a little moan now and then. 11th. Lower and lower. Through the silent, desolate rooms the clocks tick loud. At half-past four this afternoon she died. . . . Her breathing grew fainter, fainter, then ceased without a sigh, without a flutter,—perfectly painless. The sweetest expression was on her face. 12th. Our little child was buried to-day. From her nursery, down the front stairs; through my study and into the library, she was borne in the arms of her old nurse. And thence, after the prayer, through the long halls to her coffin and grave. For a long time I sat by her, alone, in the darkened library. The twilight fell softly on her placid face and the white flowers she held in her little hands. In the deep silence the bird sang from the hall a melancholy *requiem*. Nov. 12th. I feel very sad to-day. I miss very much my dear little Fanny. An unappeasable longing to see her comes over me at times, which I can hardly control.

II. EXPLANATIONS OF CERTAIN LINES OF THE POEM.

"Howso'er defended." However watchful the parent may be to guard against disease or accident.

"The heart of Rachel." Rachel is here taken as typical of a mother. That she may be so taken arises from the expressions in Jeremiah xxxi., 15, and Matthew ii. 18.

"Not from the ground arise." Death does not come because of the powers of the world.

"Celestial benedictions—dark disguise." The blessings that heaven bestows on us often come in the sad form of death—the silver lining to the dark cloud.

"We see but dimly . . . damps." The punctuation is faulty. Place a comma at "vapors" and

a semi-colon at "damps." We are so blinded by passions and prejudices (as we are physically, by mists, vapors, and damps) that we cannot see the true meaning of the calamities that befall us. Cp.

"Life, like a dome of many-coloured glass,
Stains the white radiance of eternity,
Until death tramples it to fragments."
—Shelley.

"Funereal tapers . . . lamps." The candles burning about the dead (custom of Roman Catholics), seem to our poor human vision the signs of a calamity. Could we see them with "larger, other eyes," they might seem the lights of heaven, guiding us to our celestial home.

"There is no death! . . . transition." Cp. Life, which, in its weakness or excess,
Is still a gleam of God's omnipotence,
Or death, which, seeming darkness, is no less
The self-same light, although averted hence.

LONGFELLOW, *Birds of Killingworth.*

"Life of mortal breath." The life that we, as mortals, live.

"The suburb of the life Elysian." Suburb—part lying near (a city). The life Elysian—life in Paradise. The term Elysian fields (Elysium) was commonly used by the Greek poets to denote Paradise.

"School." This description of heaven is justified only by the thought that the child as she grows up is to be trained in all good graces. Note that the poet feels the weakness of the comparison; for, in the following stanza, he strengthens it by reference to the "great cloister's stillness and seclusion." Our notion of 'school' is thus elevated into that of something massive, ancient, inspiring awe and veneration, as are the great cloisters (really covered walks in monasteries, etc.; here, the monastery or nunnery itself) of Europe.

"Thus do we walk with her." Accompanying in our thought her movements day by day, knowing each change that takes place in her stature and character.

"The bond which nature gave." The bond of parental affection and relationship.

"Beautiful with all the soul's expansion." The poet holds the view that the countenance reveals the purity and grace of the spirit. "The soul's expansion" is the development of the spiritual nature, which the poet says takes place in heaven.

"Assuage the feeling . . . stay." We cannot wholly check our grief, yet we can and will moderate its outbursts.

"By silence sanctifying." The poet has pointed out that the death of his daughter is the work of Heaven, and that the departed one is in a brighter and better world than ours; hence to mourn is to be rebellious towards God. Nevertheless the impulse of grief is too strong to be wholly repressed. He therefore will purify and sanctify this grief by bearing it with patience and in silence.

III. QUESTIONS.

Much of the foregoing might and should be elicited from the pupil by patient questioning and discussion. In the teachers talk with the class on the general substance of the poem, some such line of thought as the following might be pursued:

Does a lamb die in every flock? Does death enter every herd? Does death come because the shepherd does not guard his flock from accident, or take care to feed it? What happens similar in human life? What picture is called up by the word "fireside"? Who is missing? Has death come because the parents were not careful to guard their children from disease and harm? Do you know any "firesides" where there are vacant chairs? How common does the poet think death is? Does he take comfort from the thought of the frequency of death? (Do not think he does. Remember Tennyson's lines in *In Memoriam* :

One writes that 'Other friends remain,'
That loss is common to the race—
And common is the commonplace,
And vacant chaff well meant for grain.

That loss is common would not make
My own less bitter, rather more:
Too common! Never morning wore
To evening, but some heart did break).

What feelings has the mother on the death of a child? What attitude towards this sad world does

the poet take? Why does he exhort us to stand thus? (Note the poem from this point on indicates the reasons for resignation). Show that death may not be the result of the action of the powers of this world. How could a calamity ever be a blessing in disguise? Give any instance to show that we poor mortals are not always able to judge the actions of Providence justly. What is death according to the Christian faith? How does the poet picture life, death and immortality, when he uses the terms 'suburb,' 'portal,' 'life Elysian?' If there is no real death, are we right to mourn? (This completes the first step towards resignation. Death is really life). But has any ill befallen the dead child in the Elysian fields? What is her state there compared with her state if she had remained on earth? Does she need to be 'defended' there? Who is her guide and counsellor? What kind of life does she lead? Should the parents grieve on her account? (This completes the second step. The child is happy in heaven). But does she cease to be a daughter because of her being in heaven? How do the parents still maintain their relationship to her? Does she, do you think, know that they think of her? How will she have changed when the parents join her in heaven? How will she receive them? If she is still to be their daughter and to love them, should the parents grieve? (This completes the third step. The child is ever their daughter). But alas? the parents know and feel all this, yet love, the longing mother's love, cries out for the lost babe, and the sad heart swells with its grief, sobbing like the ocean tide upon a lonely shore. Yet be calm, sad heart, before God's will and work; think of the child in Paradise, still your daughter. Bear in patient resignation thy grief.

IV. THE MEMORIZING.

The poem should be committed to memory, as indicated in other articles.

LESSONS IN RHETORIC.

BY J. E. WETHERELL, B.A.

FIGURES OF CONTRAST.

IT is a common device of language to place opposites in juxtaposition, in order to make a clear impression or to heighten effect. As all forms of similitudes are not figures, so there are some forms of contrast so simple and natural that they should not, perhaps, be designated as figurative. It is difficult, however, to draw the line between literal and figurative antitheses. It will be seen by a study of the following examples that there are many modes of antithesis; some more highly figurative and effective than others; some, illustrations of extreme contrast, and others only secondary contrasts, the contrasted terms not being opposites of each other; some, examples of the simple figure, and others gaining point and pungency by a union with other figures and devices:

- (1) This boy is clever, but his brother is dull.
- (2) The Roman had an aquiline nose, the Greek a straight nose.
- (3) I am your servant but not your slave.
- (4) The cup that cheers but not inebriates.
- (5) A small leak will sink a great ship.
- (6) Blessings are upon the head of the just, but violence covereth the mouth of the wicked.
- (7) Open rebuke is better than secret love.
- (8) Cæsar died a violent death, but his empire remained; Cromwell died a natural death, but his empire vanished.
- (9) It is every day in the power of a mischievous person to inflict innumerable annoyances. It is every day in the power of an amiable person to confer little services.
- (10) At the commencement of the trial there had been a strong and indeed unreasonable feeling against Hastings. At the close of the trial there was a feeling equally strong and equally unreasonable in his favor.
- (11) The Puritans hated bear-baiting, not because it gave pain to the bear, but because it gave pleasure to the spectators.
- (12) It is an unquestionable and a most instructive fact that the years during which the political power of the Anglican hierarchy was in the zenith were precisely the years during which national virtue was at the lowest point.
- (13) There were gentlemen and there were seamen in the navy of Charles the Second. But the

seamen were not gentlemen; and the gentlemen were not seamen.

(14) Unjust and absurd taxation to which men are accustomed is often borne far more willingly than the most reasonable impost which is new.

(15) In spite of evidence, many will still imagine to themselves the England of the Stuarts as a more pleasant country than the England in which we live. It may at first sight seem strange that society, while constantly moving forward with eager speed, should be constantly looking backward with tender regret.

(16) The wits and the Puritans were not on friendly terms. There was no sympathy between the two classes. They looked on the whole system of human life from different points and in different lights. The earnest of each was the jest of the other. The pleasures of each were the torments of the other. To the stern precisian even the innocent sport of the fancy seemed a crime. To light and festive natures the solemnity of the zealous brethren furnished copious matter of ridicule.

(17) Mannerism is pardonable, and is sometimes even agreeable, when the manner, though vicious, is natural. Few readers, for example, would be willing to part with the mannerism of Milton or of Burke. But a mannerism which does not sit easy on the mannerist, which has been adopted on principle, and which can be sustained only by constant effort, is always offensive. And such is the mannerism of Johnson.

(18) The troops were now to be disbanded. Fifty thousand men, accustomed to the profession of arms, were at once thrown on the world; and experience seemed to warrant the belief that this change would produce much misery and crime, that the discharged veterans would be seen begging in every street, or would be driven by hunger to pillage. But no such result followed. In a few months there remained not a trace indicating that the most formidable army in the world had just been absorbed into the mass of the community.

(19) On the use which might be made of one auspicious moment depended the future destiny of the nation. Our ancestors used that moment well. They forgot old injuries, waived petty scruples, adjourned to a more convenient season all dispute about the reforms which our institutions needed, and stood together, Cavaliers and Roundheads, Episcopalians and Presbyterians, in firm union, for the old laws of the land against military despotism. Had the statesmen of the convention taken a different course, had they held long debates on the principles of government, had they drawn up a new constitution and sent it to Charles, had conferences been opened, had couriers been passing and repassing during some weeks between Westminster and the Netherlands, with projects and counter-projects, the coalition on which the public safety depended would have been dissolved; the Presbyterians and Royalists would certainly have quarrelled: the military factions might possibly have been reconciled; and the misjudging friends of liberty might long have regretted, under a rule worse than that of the worst Stuart, the golden opportunity which had been suffered to escape.

The last three examples illustrate three favorite modes of antithesis employed by Macaulay. In (17) we find what is technically called "obverse statement," the statement that the mannerism of Johnson is offensive being ushered in by the obverse statement that mannerism is pardonable. In (18) a statement of what actually occurred is preceded by a statement of what might have been expected to occur. In (19) a narration of what actually happened is made impressive by a speculation on what might have happened had circumstances been different.

A brilliant mode of contrast is the epigrammatic antithesis. In the following examples, it will be noticed, we have, in addition to the figure of contrast, a device that constitutes the essential feature of an epigram—an unexpected turn in the language.

- (1) He is so good that he is good for nothing.
- (2) For this young girl he conceived an undying passion that lasted several weeks.
- (3) Silence is the most effective eloquence.
- (4) Cranmer could vindicate himself from the charge of being a heretic only by arguments which made him out to be a murderer.
- (5) We see more of the world by travel, more of human nature by staying at home.

(6) To keep the French out, the Dutch inundated their lands: they found no way of saving their country but by losing it.

(7) I do not live that I may eat, but I eat that I may live.

(8) If a poem is a speaking picture, a picture should be a silent poem.

(9) Lapland is too cold a country for sonnets.

(10) "Govern leniently, and send more money; practice strict justice and moderation towards neighboring powers, and send more money;" this is, in truth, the sum of almost all the instructions that Hastings ever received from home. Now these instructions, being interpreted, mean simply: "Be the father and the oppressor of the people; be just and unjust, moderate and rapacious."

In the figure called *oxymoron* we have an antithesis in contradictory terms:

- (1) Horribly beautiful!
- (2) O heavy lightness, serious vanity!

That form of epigram commonly called a *paradox* contains a shock of contradiction:

"Stone walls do not a prison make,
Nor iron bars a cage."

There are four figures more that may be considered here, as in each of them there is a sharp contrast between the literal statement and the form of language employed.

(1) "The elms toss high till they brush the sky."
This figure of exaggeration is styled *hyperbole*.

(2) The ladies in the gallery, not unwilling to display their sensibility, were in a state of uncontrollable emotion.

The figure in "not unwilling" is the opposite of hyperbole, the expression conveying less than the meaning intended. The technical name of the device is *litotes*.

(3) Her voice is silent forever.
This softened mode of speaking of a disagreeable thing is called *euphemism*.

(4) An excellent type of womanhood was Jezebel!
In *irony* the meaning is the very opposite to what is said.

All the examples in the foregoing exercises should be examined with a view to discover the special value of the figurative devices employed in each case.

Some of the examples quoted above from Macaulay will show the young student that, though contrasts are among the most effective weapons of the pointed style, there is danger of a writer's being betrayed into exaggeration and inaccuracy by a temptation to produce piquant effects.

NEW BOOKS IN ENGLISH, ETC.

From Colony to Commonwealth. By Nina Moore Tiffany. Pp. 180. Boston: Ginn & Co.

In "Pilgrims and Puritans," the story of the settlement of Massachusetts was told. The present volume takes up the history of the State at the beginning of the Revolution. The author describes the events leading to the independence of America in a style simple and interesting. Every opportunity is made use of to present the story in a clear and attractive form by means of portraits, engravings of scenes of the war, numerous maps and illustrations representing Boston and its environs at the time of the struggle.

Open Sesame. Poetry and Prose for School Days. Edited by Blanche Wilder Bellamy and Maud Wilder Goodwin. Vol II. arranged for boys and girls. Pp. 376. Boston: Ginn & Co.

We took occasion in a recent issue to point out some of the reasons for the memorizing of literature—a lost art in many Canadian schools. It is a matter of rejoicing that the art is well preserved in New England, for the publication of the present volume is proof enough of the presence of a vast number of teachers in that district who strive to have their pupils commit to memory. The volume is a collection of some three hundred pieces of prose and poetry of a character "to stimulate and feed the memory, making children learn to love and love to learn good literature." The divisions of the work, Loyalty and Heroism, Sentiment and Story, Song and Laughter, show its scope. It embraces passages from the orators and poets of America and England, with translations of a few foreign classics. The collection is

made with a knowledge of children as well as of books, so that in the hands of a teacher with a head and a heart it will certainly be a means of true culture to his pupils.

Good-Night Poetry. Compiled by Wendell Garrison. Pp. 143. Boston: Ginn & Co.

In this tastefully-bound and well-printed volume are contained numerous poems from English and American authors, proper, from their spiritual character, to aid in the moral culture of children. "Doubtless," says the compiler, "in hundreds of happy homes it has occurred to the parent to make a practice of closing the infant day at the bedside with some well-chosen reading as a prelude to peaceful slumbers. To such, and to all who would do likewise, I offer a volume which will answer this general object, or which can be made directly applicable to the day's conduct."

For Friday Afternoon.

A LITTLE BOY'S TROUBLE.

I THOUGHT when I'd learned my letters,
That all my troubles were done;
But I find myself much mistaken—
They only have just begun.
Learning to read was awful,
But nothing like learning to write;
I'd be sorry to have you tell it,
But my copy-book is a sight.

The ink gets over my fingers,
The pen cuts all sorts of shins;
And won't do at all as I bid it,
The letters won't stay on the lines,
But go up and down and all over
As though they were dancing a jig—
They are there in all shapes and sizes,
Medium, little, and big.

There'd be some comfort in learning
If one could get through; instead
Of that, there are books awaiting,
Quite enough to craze my head;
There's the multiplication table,
And grammar, and—oh, dear me!
There's no good place for stopping,
When one has begun I see.

My teacher says, little by little
To the mountain top we climb.
It isn't all done in a minute,
But only a step at a time;
She says that all the scholars,
All the wise and learned men,
Had each to begin as I do;
If that's so—where's my pen?

—Selected.

School-Room Methods.

METHODS IN HISTORY.

1. TEACH history, not the book.
2. Assign lessons by topics, not by pages.
3. Discard the text-book during the recitation.
4. Let each pupil give, in his own language, all the information he has been able to obtain upon a certain topic.
5. Do not interrupt a pupil while he is reciting.
6. When he has finished, let the class note any mistakes or omissions.
7. Do not allow the pupils to memorize the text-books.
8. Talk with the pupils, do not lecture.
9. Use the wall maps freely.
10. Have each pupil locate routes, settlements, etc., on a small outline map.
11. Show how the history of a country is influenced by its geography.
12. Require each pupil to keep a note-book.
13. Do not discourage the pupils with too many dates and names.
14. Study men, manners, principles, causes and results.—*Educational Gazette.*

* Mathematics. *

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

THE following timely article from the pen of PROFESSOR N. F. DUPUIS, Queen's College, Kingston, contains some curious and interesting information which will be appreciated by all the readers of THE JOURNAL.

THE ECCLESIASTIC CALENDAR.

I PROPOSE, in the following article, to give some account of what is known as the Ecclesiastic Calendar. The name originated from the circumstance that it was the Church of the middle ages that arranged the calendar in present use, by modifying and amending the Julian Calendar, in use previous to that time, so as to bring it into more accurate accord with the true motions and changes of the heavenly bodies. In the arrangement of the calendar a number or things have to be attended to. The season must be kept as accurately as possible to the same days of the same months for all time to come. This is the great civic feature of the calendar. The particular ecclesiastic feature is that the holidays and fast days of the Church must be so regulated as to keep them as far as is convenient to the same seasons of the year, while at the same time they must be so explicitly determined as to admit of no discussion on account of misunderstanding.

As these holidays have primarily an intimate connection with the lunar month, and hence with the motions of the moon, a certain machinery had to be invented to record from time to time the approximate place of this ever-varying luminary. The parts of this machinery are the Golden Number, the Dominical Letter and the Epact.

The Golden Number.—Meton was a Greek mathematician and astronomer who flourished about 430 B.C. He made the discovery, we are not sure as to how he made it, that the interval elapsing between any particular new moon and the 236th new moon, counting from that one, is almost exactly nineteen years. Of course it is understood by almost every person that the moon's motion in the heavens is very irregular, and that the time between two consecutive new moons is not a fixed quantity but varies with the season of the year, with the particular position of the moon's orbit at any time, etc. In order to overcome the difficulties of this irregularity, astronomers have created an imaginary moon which moves with absolute regularity, so that, although agreeing with the real moon only a few times in the year, it will perform, say one hundred thousand revolutions of the heavens in the same time as the true moon. This we call the *mean moon*, and the time between two consecutive mean new moons we call a *mean lunation*.

Then, Meton discovered that 235 mean lunations occupy almost exactly nineteen years. This period of nineteen years is called the *Metonic Cycle*.

From our present astronomical knowledge we may easily deduce the foregoing relation. A mean lunation occupies 29.53059 days, and a mean year consists of 365.24225 days; so that 235 lunations exceed nineteen years by 0.0759 days, or about 1h. 49m.

Thus it follows that in each Metonic Cycle the changes of the moon will, in the mean, recur in the same order in the same year of each cycle, falling upon the same days of the same months and differing by only a few hours in the time of the day. So that as far as the moon is concerned the almanac for 1872 is practically correct for the present year, 1891. The fact that 1872 was a leap year and 1891 is not, interferes with the arrangement to the extent of a few hours; but as this interference is a periodic one which nearly corrects itself every four years, the approximate accuracy of the statement remains unchanged.

The *Golden Number* for any year is the number of the year in that cycle. In fixing these numbers in the Ecclesiastic Calendar it was intended to have the cycle begin with the Christian era, but by some mistake it was made to begin one year earlier. The number for the year was printed in

early almanacs in gilt letters, and hence the origin of the name.

To find the golden number for any year we add one to the year and divide the sum by nineteen. The remainder is the golden number; but if nothing remains, nineteen is taken as the golden number.

The golden number for the present year is eleven.

Dominical Letter or Sunday Letter.—The Dominical or Sunday letter is often conveniently replaced by a corresponding number which may be called the dominical number. This number is the date of January upon which the first Sunday of the year falls. The Dominical letters are the first seven letters of the alphabet, each connected with a day of the week and with the corresponding number, as in the following scheme:—

A.....1.....	Sunday
B.....2.....	Saturday.
C.....3.....	Friday.
D.....4.....	Thursday.
E.....5.....	Wednesday.
F.....6.....	Tuesday.
G.....7.....	Monday.

If the dominical or Sunday letter is D, the corresponding number is four and the year began on Thursday, and the first Sunday was January 4th.

In this manner the Sunday letter indicates the date of the first Sunday in the year, and as a consequence the day of the week upon which the year begins.

Now, in leap-year an extra day is intercalated at the end of February. This has the same effect upon the remaining months as if the year had begun one day later and had not been a leap-year. Then a leap-year has two dominical letters, one answering for January and February, and the other for the remaining months of the year.

If a person knows the Sunday letter for any particular year and remembers the following little rhyme, he can easily determine the day of the week corresponding to any given day of that year:—

The first of October you'll find if you try,
The second of April as well as July,
The third of September and likewise December,
The fourth day of June, and no other, remember,
The fifth of the leap-month, of March, and November,

The sixth day of August and seventh of May,
Agree with the first in the name of the day.

But every leap-year, from March to the last,
It agrees with the second instead of the first.

Thus the Sunday letter for the present year is D, and the year began on Thursday, and is not a leap-year; and the second of April and July will be Thursday; the third of December, and consequently the twenty-fourth, is Thursday, and Christmas is on Friday.

The Sunday letters for 1896 are E for January and February, and D for the remainder of the year. And as Christmas falls in the latter of these parts, its Sunday letter is D, and its day is again Friday.

The following method enables us to find the Sunday letter for any particular year:

Denote the dominical number by s .
Then $s = 7 - \text{Rem. } \frac{1}{4}(y + \text{Int. } \frac{1}{4}y + 20)$.

In this formula y denotes the year, and $\text{Int. } \frac{1}{4}y$ means that we are to divide the year by 4 and take only the integral quotient, rejecting the remainder. Rem. means that after performing the operations indicated by $\frac{1}{4}$ of the brackets, we are to take the remainder only.

Thus to find the Sunday letter, or number, for 1887:

$$s = 7 - \text{Rem. } \frac{1}{4}(1887 + 474 + 20) = 3 \text{ or C.}$$

Hence C is the dominical letter, and the first Sunday is January 3rd, or the year begins on Friday.

In the case of leap-year this formula gives the Sunday letter for the second part of the year; that for the first two months is the letter preceding this in alphabetical order.

Thus, for 1896, this gives D as the Sunday letter. The other letter is E, and the whole gives the arrangement ED for 1896.

It has already been stated that the mean length of the solar year is 365.24225 days. In order to

deal with this incommensurable year we may begin with taking a year of 365 days. Then 400 true years consist of 146,097 days very nearly, while 400 years, of 365 days each, give only 146,000 days. We have thus a deficiency of ninety-seven days in 400 years. In order to correct this, Sosigenes, an astronomer of Alexandria, whom Julius Cæsar had brought to Rome for the purpose, added a day to the end of every fourth year. This was the origin of leap-year, and the year so corrected as to consist, on the average, of 365.25 days, was called the Julian year. This correction, however, adds on 100 days in 400 years, and thus gives an excess of three days in that period. For some time this error would not be noticeable, but in 1582 the error, which had then amounted to ten days, was corrected by Pope Gregory and his council by ordering that the day following the fourth of October of that year should be called the fifteenth instead of the fifth. The calendar was then further rectified by Clavius, who recommended to the Pope and his council that, in order to correct this error of three days in 400 years, only those full centuries which are divisible by 400 should be made leap-years. Thus 1600 was leap-year, 1700 and 1800 were not, and 1900 will not be leap-year, but 2000 will be. Unless some change takes place in the absolute length of the year, from astronomical causes, the calendar as now constituted, and known as the Gregorian Calendar, will not introduce an error of more than one day in 5,000 years. The correction made by Pope Gregory was not adopted in England until 1752, when the error had amounted to eleven days, and then by Act of Parliament the day following the second of September of that year was called the 14th of September. Thus there is not in English chronicles any date between September 2nd and September 14, 1752.

We have here the explanation of what is meant by O. S. or Old Style, and N. S. or New Style, the New Style dating its beginning from September 14, 1752.

In Russia O. S. is still in use, and the Russian calendar now differs from ours by twelve days.

The circumstance that 1900 is not a leap-year requires that in finding the Sunday letter for any year in the twentieth century the constant to be added be nineteen instead of twenty. As 2000 is a leap-year, the same constant will be employed until 2100, after which the constant will change to eighteen, etc.

The main purpose of the Ecclesiastic Calendar was to fix the date of Easter, and through it the dates of all the moveable feasts and holidays of the Church; and although the study of this calendar has lost its principal interest through the waning of the influence of the Church over public affairs, and especially in Protestant countries, yet it is of great historical interest on account of the influence which the Church did exert over public acts of all kinds during the early and middle centuries of the Christian era. Nearly everything that has gone to make history during the first 1,500 years of the Christian era was largely connected with or determined by the Church; the accounts of important matters were written in the records of the Church; the dates of great events were more or less mixed up with Church holidays, and thence with the dates of Easter, which thus becomes the court of final appeal.

Easter is said to have been defined by the Council of Nice (A.D. 325) as the Sunday which falls next after the first full moon following the 21st of March, or the Vernal Equinox. This is probably, however, only statement, as there is no sufficient proof of it.

The definition of Easter which is now used, and which has been used for many centuries, is that it is the first Sunday after the fourteenth day of the calendar moon which happens upon or next after the 21st day of March. This calendar moon we shall now find it necessary to explain.

We have already mentioned the *mean moon* of astronomers, and said that it makes a revolution from new moon to new moon again in 29.53059 days. If we divide a year of 365.24225 days by this we obtain twelve lunations with 10.8829 days upon the next lunation. That is, the increase in the moon's age for one common year is 10.88 days. This quantity is altogether too complex to be readily dealt with in a calendar, and some way must be devised of keeping fairly to this while employing whole numbers only. Clavius, who invented the

way out of the difficulty, certainly deserves to be complimented for his ingenuity. He dropped the mean moon of the astronomer and put in its place a calendar moon, which moves to suit his purpose without ever getting inconveniently astray.

The age of this calendar moon on the first day of the year is the *Epact*, from a Greek word meaning *carried over*.

Clavius makes his moon to get eleven days older each year instead of 10.88, and when the accumulated number passes thirty he discards thirty instead of 29.53.

Moreover, he adds an additional day to the moon's age once in every nineteen years, that is, at the close of each Metonic Cycle. By this means he keeps the Epact dependent upon the golden number, so that in any one century the years which have the same golden number have the same Epact.

The result of all this we can easily calculate. Let us make the calculation for the 100 years of a common century. These consist of 36,524 days; and this number divided by 29.53059 gives 1,236 lunations with a remainder of 24.2 days. So that if the moon's age were four at the beginning of the century it would be 28.2 at the close, or at the beginning of the following century.

Now, taking the calendar moon, we add to its age 210 days in nineteen years, or 1,105 days in 100 years. Casting out of this all the thirties possible leaves a remainder of twenty-five days. So that if the calendar moon were four days old at the beginning of the century it would be twenty-nine days old at the close. Thus the calendar moon has gained only four-fifths of a day in 100 years. The circumstances that every fourth full century is a leap-year, and that the Metonic Cycle is not exact, conspire together to so reduce the discrepancy that, upon the whole, the calendar moon gains one day upon the mean moon in about 300 years; and when this takes place the calendar moon is set one day back.

The Epact may be found as follows:

From eleven times the golden number subtract ten, and divide the remainder by thirty. The remainder from this division, decreased by one, is the Epact. Or,—

$$\text{Epact} = \text{Rem.} \left(\frac{11N - 10}{30} \right) - 1.$$

These three elements, the Golden Number, the Sunday letter, or number, and the Epact, enable us to find the date of Easter in any year.

For this purpose we combine these elements as here indicated:

$$\text{Let } P = \text{Rem.} \left(\frac{54 - E}{30} \right), \text{ and } Q = \text{Rem.} \left(\frac{P + 3}{7} \right)$$

Also let $d = P + (S - Q)$, where $S - Q$ must be positive or must be made so by adding 7 to S .

$$\text{Then } e = (21 + d) - 31.$$

If $21 + d$ is greater than 31, we can subtract 31, and e is the date of Easter in April. But if $21 + d$ is less than 31 we do not subtract 31, and e is the date of Easter in March.

As an illustration we will find the date of Easter in the year 1897.

We find the golden number, N , to be 17; and thence we find the Sunday letter to be C , or the corresponding number, $S = 3$, and the Epact to be 26.

$$\text{Then } P = 54 - 26 = 28; Q = \text{Rem. } \frac{1}{7}(31) = 3; d = 28 + (3 - 3) = 28.$$

$$\text{Then } e = 21 + 28 - 31 = \text{April 18th.}$$

To find Easter for 1931:

$$N = 13, E = 12, S = 4 = D, P = 12, Q = 1, D = 15, \text{ and } e = \text{Easter} = 5\text{th April.}$$

In the same year Christmas will be on Friday.

To find Easter for 1878:

$$N = 3, E = 22, S = 1, P = 2, Q = 5, D = 5, \text{ and } e = \text{Easter} = 26\text{th March.}$$

The following table gives the Epact corresponding to each golden number throughout one cycle:

N	1	2	3	4	5	6	7	8	9	10	11	12
E	29	11	22	3	14	25	6	17	28	9	20	1
N	13	14	15	16	17	18	19					
E	12	23	4	15	26	7	18.					

N. F. DUPUIS.

SOLUTIONS.

72. By W. PRENDERGAST, B.A., Seaforth Coll. Inst.

Let $x =$ edge of cube; then $x - 3 =$ edge of hollow cube.

$$\therefore x^3 - (x - 3)^3 = \text{vol. of board} = 49\frac{3}{4} \times 144 \times 1\frac{1}{2} \text{ cub. in.}$$

$$\therefore x^2 - 3x - 1188 = 0 = (x - 36)(x + 33).$$

Ans. $x = 36$ inches.

73. By the same.

Let $x =$ height, outside measurement, then $2x =$ width, and $4x =$ length. Thus $x - 5, 2x - 5, 4x - 5,$ are the inner measurements, and we have the equation

$$8x^3 - (x - 5)(2x - 5)(4x - 5) = \text{vol of wood} = 144 \times 22\frac{1}{2} \times 2\frac{1}{2}$$

Whence $2x^2 - 5x - 228 = 0 = (x - 12)(x + 9\frac{1}{2}); x = 12$
 \therefore contents of box $= 7 \times 19 \times 43^4 = 5719$ cub. in. of sand.

The following are generalised solutions of the same questions, by ALEX. H. D. ROSS, M.A., Almonte High School.

If $a, b, c,$ be the outside edges of a rectangular parallelepiped and x the thickness of the material, then will

(A) $abc - (a - 2x)(b - 2x)(c - 2x)$ express the volume of the material in it. For Problem No. 73 this gives

$$4c \cdot 2c \cdot c - (4c - 2 \cdot 2\frac{1}{2})(2c - 2 \cdot 2\frac{1}{2})(c - 2 \cdot 2\frac{1}{2}) = 12 \cdot 22\frac{1}{2} \cdot 12 \cdot 2\frac{1}{2}$$

$$8c^3 - (4c - 5)(2c - 5)(c - 5) = 1^2 \cdot 16\frac{1}{2} \cdot 1^2 \cdot \frac{5}{2} = 8105$$

$$70c^2 - 175c + 125 = 8105$$

$$2c^2 - 5c - 228 = 0$$

$$C = \frac{5 \pm \sqrt{25 + 1824}}{4} = +12 \text{ or } -9\frac{1}{2}.$$

Hence the box is 1 foot high, 2 feet wide and 4 feet long, and will contain

$$(48 - 5)(24 - 5)(12 - 5) = 5719 \text{ cub. inches.}$$

For Problem No. 72 we have

$$a^3 - (a - 3)^3 = 38\frac{1}{2} \cdot 144 \cdot \frac{3}{2} = 10719$$

$$9a^2 - 27a + 27 = 10719$$

$$a^2 - 3a - 1188 = 0$$

$$a = \frac{3 \pm \sqrt{9 + 4752}}{2} = +36 \text{ or } -33.$$

Hence the box occupies one cubic yard of space.

Formula (A) is very useful for solving many problems in mensuration. It is very easy to get a class to understand it by using an empty chalk box with a cover to develop the form.

PROBLEMS FOR SOLUTION.

80. By ORIOR. What must be the diameter of an auger-hole which removes one-half the wooden sphere through whose centre it passes? Given diameter of sphere = 1 ft.

81. By THE SAME. How far will a pony travel in unwinding 40 rounds of rope from a tethering-post $2\frac{1}{2}$ feet in diameter, if he start from the post?

82. By C. The sides of a field measure $21\frac{3}{4}, 16, 23$ and $27\frac{1}{2}$ rods. How can the area be found from these data?

83. By YARMOUTH, N.S. A tradesman professes to retail his goods @ 10% profit, but adulterates them by adding $\frac{1}{4}$ of their weight of an inferior article which cost him only $\frac{2}{3}$ of the price of the better. How much per cent. profit does he really make?

84. In what proportion must he mix the two kinds so as to gain 20%?

85. A man embarks his property in four successive ventures. In the first he clears 10% and in each of the others he loses the same per cent. There remains to him only 2.4% of his original outlay; what was his loss per cent. in each of the three years?

86. By H. C. Equal weights of gold and silver are in value as 20:1, and equal volumes as 1284:35. A certain volume is composed of equal weights of gold and silver. How many times more valuable would the same volume of gold be?

87. Hamblin Smith's Arith., Can. Ed., p. 190, No. 2. The first item on the Dr. side falls due after the first payment. Please solve and explain.

88. In Public School Arithmetic, p. 83, a rule is given for plastering rooms, in which it states that you must deduct one-half the area of the doors and windows from the area of the walls and ceiling.

1. Is that true?

2. Why do you not deduct the whole area?—H. K. L.

✻ Hints and Helps. ✻

THOSE TROUBLESOME PUPILS.

BY BEBE.

"I AM very anxious to have a quiet orderly school, and it seems as if no effort on my part is crowned with the desired results," so writes "Warda" in the *Popular Educator*.

"Wilful shoving of feet, impertinent replies, whispering and disobedience in general," is her formidable list of offences.

Far from easy appears the task before her. Few of us but can understand her feelings as she penned those lines—yearning anxiety and bitter disappointment. There are many Wardas.

What is wrong?

Those pupils have probably many redeeming qualities but for the present they are hidden by the cloud, *Disobedience*. The school requires stirring up, there is a deadness about it. It is quite certain that the trustees never visit it, neither do the people of the section. The building is guiltless of paint, and the fence lost its pickets years ago. The pupils cherish no feelings of pride regarding their school, (how can they?) or they would soon bestir themselves to act properly.

She must be a Hercules, indeed, who rouses up in a short few months section, trustees and pupils; the pupils are the least part of the undertaking.

But the teacher must not delay a week in the matter of obedience. Of course great firmness is demanded, more perhaps than the young teacher wishes to display, lest it interfere with her exquisite theory "ruling by love." Osman Latif said of Emin Pasha, "He has been very just, and good to them all, but the more he allows them to do as they please the further their hearts are from him," and just so it will be with the yielding teacher.

The leaders are usually the older pupils, boys of fourteen and fifteen, who are blind to the babyishness of dragging their feet on the floor, when asked to perform a simple office, or when rebuked for an offence. The teacher must endeavor to awaken in them a spirit of manliness. Surely there are examples sufficient. What boy can listen indifferently to an account of Wolfe's men standing waiting the order, "Fire?" The pupils can be led to see the power of obedience in a crisis; can't they understand that the strength for that great strain was gained by constant obeying?

Stanley speaks of Stairs, "the officer *par excellence*," as "the one who always obeyed and who meant to obey." What greater tribute could he have paid him?

Politeness in the teacher may somewhat check impertinence in the pupil but there are some natures, for a long time, impervious to "Please" and "Thank you." They belong to the pupils who are determined to regard the teacher as their enemy, or, to those whose veneration is very small. These require to be handled with silken gloves, with an iron hand beneath.

The rural teacher finds a difficulty in governing five and fifteen. She desires that the former should have greater liberties; perhaps, because school is new and he requires to be drawn out, but the latter will not understand that there can be any difference and acts accordingly.

When the school becomes thoroughly obedient the trouble passes away, the larger pupil has a sense of dignity that will not permit him to waste his own and his teacher's time.

Respecting whispering, teachers differ greatly, some are for suppressing it, others for permitting it. The greater part of the whispering will have about as much connection with the school work in hand as the following:

"Charlie, what were you saying?"

"I was just askin' George how many calves had they?" Therefore it would seem advisable to create a sentiment against whispering.

The pupils must be given credit for their efforts to obey. It will become easier for them by degrees. The teacher must not be easily cast down though pupils fail; for disobedience so rampant will not be banished till it is dug up root and all, and there are cases in which the growth is too strong to permit of that.

A STRAIGHT line is the shortest in morals as well as in geometry.—*Rohel*.

The Educational Journal.

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

J. E. WELLS, M.A.

Editor.

* Editorials. *

REVISED EDUCATION ACT.

WE have just obtained a copy of the Bill which has been introduced by the Minister of Education, entitled "An Act Consolidating and Revising the Public School Act." This amended School Act has not yet been before the Legislature for discussion and is, of course, liable to changes and amendments before it becomes law. On a necessarily hasty examination, we have noted the following as a few of the more important points in regard to which the proposed Act changes, amends, or adds to the provisions of the existing School Law.

1. Trustees are to be empowered, at their discretion, to supply the pupils attending public schools with text-books, stationery, and other school supplies, at the expense of the corporation. The question of free text-books and other school supplies has been under discussion in the city of Toronto for some time past, and a strong public sentiment has been created in its favor. The arguments in support of the change, as the logical sequel and complement of our free-school system, are many and cogent. They have from time to time been presented in our columns and need not be repeated. The method is no longer an experiment in many parts of the United States. It has been tried and approved. In three States—Massachusetts, Maine, and New Hampshire—text-books are free throughout the State. In at least seven other States either the town, district, or county may decide by vote to make books free. In other States still, this power is probably in the town. Wherever the system is introduced it grows rapidly in favor. In Michigan, a law providing for submission of the question to the several school districts having passed the legislature in 1889, at the following spring election not fewer than 520 districts voted in favor of free text-books. We hope a somewhat similar movement may follow the proposed enactment in the municipalities of Ontario.

2. Under the Section, "Duties of Teachers," a new clause is introduced making it one of their duties "to notify the Trustees, and in case of their neglect, to notify the Local Board of Health when the closets or outhouses belonging to the school are dangerous to the health of the school. This

adds legally, though not morally, to the responsibilities of the teacher, but it will be welcomed by many as giving them the means of guarding against the serious dangers too often arising from the negligence or parsimony of trustees in regard to such matters.

3. The establishment of "an Annual Leaving examination in the Public Schools, on such subjects and according to such regulations as may be prescribed by the Education Department," is a new departure which may or may not be a means of good to teachers and pupils. On general principles we demur at anything which tends to increase rather than lessen the pressure of examinations. Properly conducted this may, however, be one of the exceptions, and prove useful as a goal and a stimulus to keep pupils in their places to the end of the course; a certificate of having completed the course will no doubt be given, and will be an object worth striving for. But why not follow out the plan already adopted to bridge the chasm between High Schools and Universities, by letting the Public School Leaving Examination take the place of High School Entrance?

4. We have searched in vain for a section making it obligatory upon trustees to enforce the clauses of the existing Act relating to compulsory attendance.

Instead of substituting a "must" for the "may" of the old Act, which gives the power to enforce the attendance of all children between the ages of seven and thirteen for not less than one hundred days in the year, the proposed Act, so far as we have been able to discover, eliminates the whole section relating to compulsory education. It is fair to assume that the necessary legislation—and the statistics in the Minister's report show that it is very necessary—is to take some other shape. It cannot be that the Department will neglect to take some vigorous action to secure the results for which free schools, supported by the taxes of the citizens are supposed to exist. The system seriously fails when tens of thousands of children are permitted to grow up in utter illiteracy.

OUR MODEL SCHOOLS.

THE report of the Minister of Education for 1890, now before us, is, like its predecessors, a carefully arranged and fairly complete repository of information on all matters connected with public education in Ontario, from Kindergarten to University. The mass of facts presented is so large and so suggestive that we scarcely know where to begin or what to select for study and comment within our time and space limits. While, however, we shall not wholly neglect

the important information afforded in the statistics which make up the greater part of the report, our attention is in this instance especially drawn to the elaborate and able "Special Report on Normal Schools, including Schools of Observation and Practice," by Dr. McLellan, Inspector of Normal Schools, which occupies the last twenty-six pages of the volume. This Special Report is at the same time a detailed criticism of the various departments of the Normal and Model Schools as at present organized and operated, and a condensed treatise on educational principles and methods, considered specially in their relation to the professional training of teachers. Were it not that Dr. McLellan, in the capacity of Director of Teachers' Institutes, has good opportunities to discuss these principles and methods in presence of the teachers in the Public Schools, we should be strongly disposed to urge that this report should be printed as a separate pamphlet and a copy of it put into the hands of every teacher in the Province.

We propose in two or three short articles to touch upon certain matters dealt with in the Report which seem to us of special interest, by way mainly of bringing them afresh to the attention of our readers. Dr. McLellan first takes up "The Model School," and to one or two facts brought out in that connection we for the present confine our attention.

The first fact will be a surprise, we think, to many of our readers. It is that in the Model Schools of Ontario boys and girls are still taught in separate classes. Dr. McLellan says, with just, though perhaps unintentional severity, that this arrangement is due to "an ancient and now nearly obsolete notion,"—"a notion which has no place in Ontario Schools, and which even the Universities have been compelled to abandon." How it comes that any of the educational institutions of this progressive Province can remain to this date under the sway of a "fourteenth century" idea, involving as it does defective classification, a great waste of teaching power, and serious loss in other respects, is not explained. One of the most inconsistent and anomalous features of the arrangement is that, while these schools are organized and kept up mainly with a view to making them schools of observation and practice for teachers receiving professional training, such teachers are thereby deprived of the opportunity of seeing boys and girls taught together, while in almost every case they will be required to teach them together all their lives, or so long as they remain in the profession. Dr. McLellan points out the absurdity of the thing, "without suggesting

that a change is imperative," but most readers who reflect on the matter will wonder why, under such circumstances, a change should not be deemed imperative.

While on this subject of co-education we should perhaps guard against misapprehension, and a possible charge of contradiction, by someone who might remember the views we have advanced on other occasions, by calling attention to an important distinction. There is a kind of co-education which prevails to some extent in some parts of the United States, and which has been tried in one or two Canadian Institutions, which is, in our opinion, open to many and serious objections. We refer to the bringing together of non-resident students of both sexes in schools and colleges, in which they are required to board in the same or adjacent buildings, and to live together, to some extent, as if members of the same family. Seeing that these young people are not members of the same family, and that the true brotherly and sisterly feeling is neither possible nor desirable, it is easy to understand the very grave questions of discipline and of effect upon character and deportment to which such an arrangement must give rise. Many who have had experience in such schools are strongly opposed to co-education in that form. But we have, we think, yet to meet the competent teacher who, after a fair trial does not heartily approve of having the two sexes brought together in the same classes. We do not think that Dr. McLellan goes too far when he says it is "the all but universal testimony of modern educators that boys and girls taught together exercise on one another a mutually refining and stimulating influence."

With regard to the course of study in the Model Schools, Dr. McLellan asks the very pertinent question whether, instead of having two fifth divisions doing almost the same work—i. e. fourth-class public school work—it might not be well to have a sixth division doing at least fifth-class public school work. We are not sufficiently familiar either with the work of these classes or with the ages and attainments of the average model School pupils in these classes to warrant us in giving an opinion on this particular question. But if it be the fact, as we infer from this and other remarks, that boys and girls of fifteen to eighteen years of age, after passing through the fourth class in regular course, are, if they continue in the school, required to continue for another year doing almost the same work as in the year last preceding, the arrangement, unless imposed by arbitrary authority, surely reflects very gravely upon the teaching done in the school. An

important educational principle is involved. It cannot be that teachers of the superior class that are or should be selected for such a school can voluntarily sacrifice their pupils to the *fetich* of so-called "thoroughness," which is known to be sometimes set up and worshipped in the old-time schools. There is certainly great "danger of dwelling too long in familiar fields." Very often the very best stimulus that can be applied to half-hearted and partially unsuccessful pupils, and indeed even in cases still more discouraging, is a change of scene and subject. As Dr. McLellan observes,—and we commend the wise maxim to the attention of those who may have grown discouraged in their efforts to secure thorough work by taking dull pupils again and again over the same ground—"New matter means quickened interest and therefore a better mastery of the old matter through assimilation with the new."

Other topics suggested must be kept for future numbers.

✻ Question Drawer. ✻

1. Is a person having a Professional First qualified to teach only in a High School, or may he teach in a Public School as well?

2. Does a First C count the same as First Year at the University, and can a B.A. with honors be taken in another three years at the University?

3. How much does a First A shorten the University term of four years?

4. What is the least sum it will cost for fees to attend the University of Toronto for one year?—SUBSCRIBER.

[1. He is qualified to teach in a Public School, or as assistant in a High School. 2. The First C is accepted by the University as far as it includes the subjects of Junior Matriculation, but the student will have to pass examination in subjects not included. 3. If needful supplementary examinations are passed as indicated above, it enables the student to enter on Second Year of course; in other words, shortens the course by one year. 4. You had better write to the Registrars for the calendars of the different Universities and compare notes.]

[ANSWER to Query 2 (F.W.B.) p. 229.—The "Syllabus of Work on Zoology" can be obtained from the publishers of that book, Messrs. Copp, Clark & Co.—Secretary W. BURNS, St. Catharines, C.I.]

WHO is the Mayor of London, England? How long has he been Mayor? Of what religion is he? and has there been a Catholic Mayor within the last twenty years? Also, give a statement of Hanlan's career as an oarsman, giving his best time, the men he has beaten, etc.—B.C.H.B.

[The present Lord Mayor is Joseph Savory. The Lord Mayor is elected annually at Michaelmas, and installed about November 9th. We do not know what his religion is, nor whether there have been any Catholic Lord Mayors within twenty years. We think it quite probable that there have been, as there is nothing to prevent. As THE JOURNAL does not propose to open a Sporting Department, we must draw the line at Hanlan.]

[In reply to L. W. M. and others we may repeat that the list of Entrance Literature Lessons appeared for months in the advertisement of the Education Department in our columns. It was also printed once or twice in other parts of the paper. We have not space to repeat it, but will send a back number containing it to any subscriber who cannot find it on his files. Anyone can obtain a circular containing it on application direct to the Education Department.]

1. Please name all the cities of Canada. 2. Who appoints the members of the Provincial Legislative Councils? 3. What is the difference between a town and a city? 4. Describe the governing body at Regina. TEACHER.

[1. Halifax, Charlottetown, St. John, Quebec, Montreal, Fredericton, Three Rivers, Sherbrooke, St. Hyacinth, Hull, Ottawa, Kingston, Belleville, Toronto, Hamilton, St. Catharines, Brantford, Guelph, Stratford, St. Thomas, London, Winnipeg, Brandon, Regina, Victoria, Vancouver, New Westminster. 2. In Nova Scotia, New Brunswick, and Quebec councillors are appointed by the Lieutenant-Governor, in the Queen's name. They are, of course, really chosen by the government of the day. In P. E. Island they are elected. In British Columbia six are appointed by the Lieutenant-Governor, the rest elected. Every district not exceeding 1,000 square miles, which contains not less than 1,000 inhabitants of adult age, may return one member to the Council. For North West territories see (4) below. 3. The difference is in the mode of civic government granted by act of incorporation. The city has larger powers of self-government and a more complete civic organization. Cities are, of course, supposed to have larger populations than towns, though this is not always the case in fact. The Municipal Acts of Provinces and States usually fix a minimum limit of population which entitles towns to become incorporated as cities. The limit for Ontario is 10,000, though we are not sure that it has been in all cases strictly observed. 4. The North West is just now in a state of transition, and has not yet full representative government. It has a lieutenant-governor and a Legislative Council. The majority of the latter are elected, but a certain number are appointed by the Ottawa Government. The Lieutenant-Governor appoints an advisory council, whose members do not necessarily, as in the Provinces, have the confidence of a majority of the House. A struggle is now going on with reference to the right of the representative Councillors to have control of the annual subsidy granted by the Dominion Parliament.]

Please name some good books of "Kindergarten songs," and choruses suitable for fifth class pupils. YOUNG READER.

[The best publication of kindergarten songs, games and choruses are probably, *Kindergarten Songs and Games*, by Clara Beeson Hubbard; *Miss Hailman's Kindergarten Songs*, *Songs for the Little Ones*, by Misses Walker and Jinks, and *Kindergarten Chimes*. Any of these may be obtained from Selby & Co., Church St., Toronto, at reasonable prices. Miss Hubbard's collection is the one most largely used, although the others, also, have wide circulation.]

1. Is the Normal School term going to be lengthened? If so, when. 2. Whom should I address in making application to attend the Normal? 3. Whom should I address for a curriculum of the work for a first C?

[1. We do not know. No announcement has, so far as we are aware, been made. 2. Write to the Principal, Dr. Kirkland, for blank form of application. 3. The Education Department.]

Is the Entrance Literature—all the lessons for next July—to be explained in the same way as "Lady Clare," in the number for March 2? E.W.

[The number for March 16 and the present one suggest the answer. We expect to have explanatory notes by competent writers upon all those that have not been already annotated in our columns.]

Examination Papers.

WEST MIDDLESEX PROMOTION
EXAMINATION, DECEMBER 22 and 23, 1890.
FROM I. TO II. CLASS.

SPELLING.

1. ILLS have no weight, and tears no bitterness.
2. You will find flat seeds in a pumpkin.
3. They climb into my turret o'er the arms of my chair.
4. The common purslane is almost in every garden.
5. I see in the lamplight, grave Alice descending the stair.
6. You can think of apples, peaches, currants and pears.
7. Remember stamens and pistils made that apple grow.
8. I put on a heavy coat of reindeer skin.
9. I listened to the gurgling of the rill.
10. Gay little dandelion lights up the meads.
11. Meanwhile, the tortoise plodded on.
12. 'Twas an argument Johnny was holding with his conscience.
13. Whene'er a duty waits for thee, with some judgment view it.
14. I don't believe a fly will be sent.
15. He's a harmless comical scarecrow.
16. Andy never moved a hair's breadth.
17. She had eyes like hazel, and golden hair.
18. Defer not till to-morrow to be wise.
19. Last autumn he shot a squirrel and a chip-monk.
20. My sledge was gliding over the snow.

FROM II. TO III. AND III. TO IV. CLASSES.

DRAWING.

II. TO III.

Values—5 + 5, 2 x 6, 12, 16, 16, 17, 17.

1. Define circle, oblong, radius, concentric circles, diagonal. Illustrate each by a drawing.
2. Draw a square about two inches to the side. Bisect each side. Draw the diameters and diagonals. In each semi-diagonal take a point at the same distance from the centre of the square as the ends of the semi-diameters are. Join the points to the ends of the diameters with heavy lines. What figure have you formed?
3. Open Drawing Books at page 13 and draw the door.
4. Open Drawing Books at page 29 and draw the cup. Make your drawing about twice the height of that in the book.

III. TO IV.

1. Draw the side and the end view of a wood-box, also a vertical section showing the thickness of the boards in the sides and bottom.
 2. Open Drawing Books and copy the drawing on the right hand side of page 26. Make the drawing larger.
 3. Open Drawing Books at page 28 and draw the bridge. Make the drawing larger.
- Rulers must not be used in the drawing.

ARITHMETIC.

Values—18, 20, 20 + 2, 18, 22, 20, 20, 20, 20, 20

1. Divide the product of 851986 and 73096 by the difference between 106003 and 35637. (Correct work or no marks.)
2. The length of the polar diameter of the earth is 41708954 feet. Express this in miles, rods, etc., etc.
3. Strathroy, November 18, 1890—Robert Walker buys of Thomas Campbell on account, 22 pounds sugar at 13c.; 17 pounds butter at 23c.; 18 pounds cheese at 19c.; 14 pounds tea at 55c.; 15 pounds dried apples at 8c.; 7 pounds currants at 8c.; 17 pounds biscuits at 13c. Make out the bill on December 22, 1890, and receipt it.
4. A garden 180 feet long by 150 feet wide is surrounded by a tight board fence 6 feet high.

What will it cost to paint it on one side at 12 cents per square yard?

5. How many portions of time, each equal to 1 day, 14 hours, 57 minutes, 33 seconds, are contained in 365 days, 5 hours, 48 minutes, 45 seconds?
6. Find the H.C.F. of 1581227 and 16758766.
7. A can hoe a row of corn in 10 minutes, B in 12 minutes, C in 15 minutes, and D in 18 minutes. If they all start together, how many hours will it be till all finish a row at the same moment? How many rows will each have then hoed?
8. A milk dealer buys 30 ten-gallon cans of milk each day at \$1.75 a can. He keeps three delivery wagons at \$2.00 each day and sells the milk at 8 cents a quart. Find his gain in 7 days.
9. An army of 18,000 men has provisions for 24 days. How long will these provisions last if the army is reinforced by 9,000 men?
10. Complete the following report of a circulating library:

	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Total
Poetry.....	7762	6856	5384	3225	879	804	
History.....	5412	283	479	432	497	413	
Religion.....	884	696	437	284	334	299	
Fiction.....	273	289	237	483	226	237	
Total.....							

(Correct work or no credit.)

GEOGRAPHY.

Values—7, 2 x 4, 8 + 11 + 1 x 8, 2 x 5, 2 x 6, 11.

1. Define channel, cataract, horizon, equator, circle of illumination, the trend of the coast line, meridians of longitude.
2. Name six trees, six fruits, six grains, six animals that are common to the Temperate Zone.
3. Draw an outline map of Ontario. Mark on it each boundary river and lake, also Sarnia, Sault Ste. Marie, North Bay, Welland Canal, Kingston, Walpole Island, Owen Sound, Sudbury.
4. Where are the following minerals found in Canada in the greatest abundance: coal, gypsum, phosphate of lime, nickel, copper.
5. Locate (giving the county, water and railroad in each case) and mention anything each is noted for, the following Guelph, Brantford, Windsor, Perth, Port Arthur, Berlin.
6. Name the (a) Provinces, (b) Districts, (c) Territories of Canada. Name a river in each district.

HISTORY.

Values—15, 15, 15.

1. What led to the passage of the Quebec Act? Give two of its provisions. What effect had it on the French Canadians?
2. Explain Responsible Government, and state how it was recognized in the provisions of the Act of Union (1841.)
3. Describe our school system under the following headings:
 - (a) State what is entrusted to the Education Department, and for what the Minister of Education is responsible.
 - (b) Explain: School Section, School Board, Separate Schools.

SPELLING.

1. These feathered workmen serve no apprenticeship, but are apt scholars.
2. They build immense canopies without assistance.
3. By this the storm grew loud apace, the water-wraith was shrieking.
4. The primrose is the mild offspring of a sullen sire.
5. He was too ambitious and sacrificed his repose for politics.
6. Blow, bugle! let us hear the purple glens re-lying.
7. The mariners knew the perilous rock.
8. The schoolmaster was surprised to find the scissors and needles.
9. Ancient Egypt was famous for embalming, pyramids and obelisks.

10. Numbers of mummies have been placed in museums.

11. Duty bids us to assuage a mother's grief.
12. It sprang and galloped for the hills with one sonorous neigh.
13. The ruby-throat drank with eager gusto the refreshing draught.
14. Somebody's darling, with blue-veined brow, slumbers here.
15. The assailants were seen emerging from the city loaded with the black progeny.
16. He went straight to the honey and fed the dying simpletons.
17. "Ay, ay, sir!" returned the cockswain with undisturbed composure.
18. He sees the peas and pumpkins growing and the corn in tassel.
19. He hears the parson preach and his daughter's voice in the choir.
20. The crocodile, after a feigned retreat, repeated this manœuvre.

Five marks for each correct number.

FROM I. TO II., II. TO III. AND III. TO IV. CLASSES.

WRITING.

I. TO II.

Copy:

I hear in the chamber above
The patter of little feet,
The sound of a door that is opened,
And voices soft and sweet.

II. TO III.

Copy:

From my study I see in the lamplight,
Descending the broad hall stair,
Grave Alice, and laughing Allegra,
And Edith with golden hair.

III. TO IV.

Copy:

Gussie, Hennie, Minnie, Mattie,
Dollie, Gratie, Sadie, Hattie,
Tiny, Beebie, Birdie, Cattie,
And a dozen more
Full as senseless and erratic.

* * * * *
Grand Matilda, now but Tillie,
Millicent, instead of Millie,
Sweet Cecelia, lost in Celie.

(a) Write your own address.

(b) Form the nine digits neatly.

GRAMMAR.

Values—4, 6, 9, 10, 8, 9, 6, 8, 3 + 5 + 5, 10, 16, 4 + 4 + 6, 10, 24 + 3.

1. Write abbreviation for: Mistress, namely, that is, postscript.
2. Define complete predicate, predicate adjective, copula.
3. Compose sentences showing that an adverb may modify an adjective, a verb and an adverb.
4. Show that the following may be used as different parts of speech: harness, garden, steel, June, man.
5. Point out the phrases in the following sentences and change them into adjectives or adverbs, as the case may require: She began in a very solemn manner. The boy was by nature kind and brave. A road for waggons led up to the fields towards the north.
6. Define the three kinds of sentences and compose one of each kind.
7. Form derivative nouns from belief, sense, friend, and form sentences containing each derivative noun.
8. Compose sentences containing as objects these pronouns: each, either, any, none.
9. Define a pronominal adjective, name the five kinds, and compose sentences illustrating each.
10. Combine into complex and compound sentences the following simple sentences:
A fox stole into a vineyard. The fruit was ripe. It was trained on high in a most tempting manner. He made many a spring after the luscious prize. He failed in all his attempts. He retreated. He muttered, "Well, what does it matter? The grapes are sour."

11. Correct where necessary the following :

(a) The preacher began very solemn and the people looked so seriously.

(b) By working hard, James made nearly thirty dollars a month.

(c) Don't forget to fetch them books with you when you come.

(d) I don't hardly think he has went this way.

12. (a) State the clauses, (b) Give their relation, (c) Analyse each in the following: *Our faithful friend says that you are bound to go when he returns to his work.*

13. Parse the italicized words.

14. (a) Write a letter to Robert Stoner, Arkona, telling him how you intend to spend the Christmas holidays. (b) Outline an ordinary sized envelope and address it properly.

Teachers' Meetings.

WEST MIDDLESEX TEACHERS' ASSOCIATION.

THE annual meeting of the West Middlesex Teacher's Association was held in the Front Street Methodist Church on Thursday and Friday, February, 12th and 13th.

The President, Mr. W. A. Campbell, expressed his sense of the honor conferred on him and touched on various matters connected with the work of the Association.

After routine business, Reading and Literature, with a second class from the Strathroy schools, was handled in an excellent manner by their teacher, Miss E. Sherman. The lesson taken up was one in the Reader, and by skilful and varied questioning the teacher drew synonyms for the most important words. These synonyms were used by the pupils in sentences in different connections. The reading of the children was remarkably good, being very clear and expressive, as a result of the teacher's plan of bringing out the most important words, and giving concise ideas of the meaning of words, as well as skill in questioning.

The President and several teachers commented very favorably on Miss Sherman's teaching and method.

The next subject on the programme was "Sharing," which was introduced by Mr. J. V. McDonald. He would use objects with his pupils grouped about a table on which the objects lie. Here he would give many simple problems, the sharing to be performed by pupils themselves. He would proceed from simple to the more difficult problems.

1st, those requiring equal division.

2nd, those giving one a number more than another.

3rd, where one gets less than another.

4th, those in which an equal number of unequal shares are given.

In all of these he would use first the objects to illustrate and the black-board for recording the solution.

These problems would be followed by others more difficult in character, many of which were solved by Mr. McDonald to illustrate his method of procedure. He would give many problems on the same principles, but with different readings. He would have pupils formulate problems which read differently from the one given. Pupils should put solutions on blackboard and be criticised by classmates. Teachers should not be satisfied with the pupils saying that they understand the solution, but should question them to see that they do understand.

The discussion was deferred until the afternoon, and after roll-call, to which eighty-seven teachers answered, the Association adjourned.

AFTERNOON SESSION.

The chair was resumed by the President, and, after roll-call, came a forcible address upon "Canadian History and How We Are Governed," by Mr. H. Shoff. He spoke of his own love for history and delight in reading it, but confessed to great difficulty in teaching the subject to his satisfaction, especially with the text book now authorized. He would discard the authorized text book save for reference. The teacher will have to take the government of Canada in its different stages, making it simple and plain, and seeing that his class understand the different forms. Anecdotes of persons in

Parliament would make the study interesting. Use the map of the Dominion and Province of Ontario. In teaching the Judicial System, it will be easily seen that the courts are necessary to try offenders and classes of courts given.

In opening the discussion the President expressed his sympathy as a fellow sufferer with the speaker in his acknowledged difficulty.

Mr. McLean emphatically expressed his disapprobation of the authorized text book, and said that he now starts with government by trustees, and leads out to municipal council and further to Provincial and Dominion Parliaments.

Mr. Campbell, in addition to taking the plan outlined by the previous speaker, had taught practically by forming the various councils and parliaments in his school—mimic law-making.

Mr. Shoff had tried this plan but his pupils failed to secure the marks requisite on an examination.

Mr. Shotwell told how he secured great interest in English history and thought that the proper place for Canadian history is antecedent to English.

The subject was further discussed by Messrs. Dunsmore, McVicar, Inspector Johnson and the President, the general opinion being that Canadian history should be taught and may be well taught if done carefully and simply. Marks should not be the object, but to have the children get some conception of the growth of our constitution, so that they can intelligently discuss the political questions that will come before them.

Next came an interesting paper by Miss Rose on the Lesson entitled "The Burial of Moses." This was followed by another by Mr. H. McColl, the Postmaster, on "Thoroughness."

A successful public entertainment was given in the evening, consisting of musical selections followed by an instructive lecture by Rev. W. G. Jordan, on "A Tour in Russia," readings, etc.

FRIDAY MORNING'S SESSION.

The Committee on selection of officers presented their report as follows:—President, Mr. Roderick McLean; Vice-President, Miss McInroy; Secretary-Treasurer, Mr. J. Shotwell; Auditors, Mr. J. MacVicar and Mr. C. Horton. Executive Committee to consist of the President, Vice-President, Secretary, Inspector and Mr. Dunsmore. The report was adopted.

The Committee on selection of examiners presented their report, which was adopted.

Mr. Shotwell drew the attention of those present to some difficulties connected with the Promotion Examinations and proposed plans for obviating them.

Mr. Campbell proposed that instead of having a special paper in writing, the marks be adjudged from some other answer paper to be selected by the examiner.

An animated discussion ensued, and a motion by Messrs. McLean and Edwards, to the effect that some marks be awarded on each paper for neatness, was carried.

The Question-Drawer was opened and answers to a number of questions given by Messrs. Shoff and Dunsmore.

A paper upon Longfellow's "Children's Home," was read by Miss McInroy.

The President then called upon Mr. J. A. Sparling, B.A., to address the members upon Entrance Arithmetic. After an instructive discussion of the two factors, the reasoning and the mechanical operation which enter into the solution of problems, Mr. Sparling summed up his points as follows:

(a) In lower classes aim at rapidity and accuracy in the mechanical operations.

(b) In the higher classes aim at training the pupil to *think and reason logically*.

(1) (a) Give few rules. (b) Tell the pupil as little as possible.

No problem should be given to a pupil which cannot be solved by the pupil himself without assistance, except in the way of guidance and encouragement.

(2) In the higher class let there be a strict supervision of the pupil's work. That is (a) accuracy, (b) thought, (c) method.

A discussion followed in which a number of teachers took part.

The roll was called, to which ninety-seven teachers answered and the Association adjourned.

AFTERNOON SESSION.

After roll-call the President called upon J. K. Campbell, who gave an able address upon "How to Teach Agriculture."

Mr. J. E. Wetherell, B.A., Principal of the Collegiate Institute, then was introduced, who addressed the teachers upon the literature of "Tennyson" "Ring Out, Wild Bells."

At the conclusion of this address a motion to have two meetings of the Institute each year was carried. Accordingly there will be an Institute meeting in September.

In the absence of Mr. Shrapnell, the last Entrance Geography Paper was reviewed by Mr. Dunsmore. After votes of thanks etc., the meeting adjourned.

Book Notices, etc.

Outlines of Physiological Psychology. A Text-Book of Mental Science for Academies and Colleges. By George Trumbull Ladd, Professor of Philosophy in Yale University. Illustrated. 500 Pages. With Index. Crown 8vo, \$2.00. Introductory Price, net, \$1.34.

From the point of view of the educator it may well be doubted whether the ideal text-book on Psychology has yet appeared. It may be that the subject, in its very nature, precludes the hope that such a book may yet be prepared—a book, that is to say, approaching the subject from the purely experimental side, and dealing with it according to purely inductive methods, though it is not easy to see why, if the subject of Psychology has in it the elements of a pure science, its study should not be capable of being pursued in school and college in accordance with purely scientific methods. Be that as it may, the revolution in the mode of dealing with Psychology in the college lecture room is now complete. Instead of setting out from a subjective nowhere and making his way laboriously through a tangled metaphysical maze to the intended outcome in a series of dimly apprehended propositions about the mental and moral faculties, and their various functions and processes, the modern psychologist now almost invariably approaches his subject from the physiological side. The student must acquaint himself with the nervous system, the structure of the spinal chord and the brain with which it connects, the organs of sense and motion, etc., and thence proceed to the qualities of sensations, the processes by which perception is gained. Only by such a highway does he reach the table-land on which Emotion, Consciousness, Memory and Will perform their parts, and become fitted to discuss such subtle problems as those of the nature of mind, its connection with body, etc. Nor do we deny that from this point of view, and with the aims of the authors and readers of such books, this method is incomparably the best. The aim of author, professor and student alike is not simply to make a purely inductive study of the mental phenomena, but to attain within the shortest possible time-limits a clear and comprehensive view of the facts of Psychology, so far as at present known and reduced to a scientific system. For this purpose we know no better book—we doubt if there is a better—than this now before us. This volume is not an abridgement or revision of Professor Ladd's larger book—which is still to be preferred for mature students—but, like it, surveys the entire field, though with less details and references that might embarrass beginners. It gives briefer discussions of the nervous mechanism and of the nature of the mind as related to the body; while the treatment of relations existing between excited organs and mental phenomena offers much new material, especially on "Consciousness, Memory and Will." For lucidity of statement and comprehensiveness of treatment within moderate limits, Professor Ladd's "Outlines," is, we believe, unsurpassed.

The Morning Hour. A Daily Song Service, with Responsive Selections for Schools. By Irving Emerson, O. G. Brown and George E. Gay. Boston: Ginn & Company.

The purpose of this little book is to make the morning hour in the school room as pleasing and helpful as possible. It is designed for use in High schools and academies, and is admirably adapted to its purpose. The hymns and responsive selections, and the music appropriate to them, are all well chosen, and will not fail to secure an extensive use.

Primary Department.

BUSY WORK.

RHODA LEE.

THE employment of pupils at their seats, or, as it is more commonly termed, *busy work*, is a subject in which the earnest teacher of primary classes is always interested. Necessity compels us to be on the alert for new ways and means of interesting the little ones and employing their hands, and we gratefully accept whatever new ideas reach us in connection with this department of the primary work. During the last few weeks I have gathered a few practical hints for Busy Work, and these, though they may lack freshness to some, may, I hope, prove helpful to others. Many successful teachers have attributed a great measure of their success to the fact that they have managed to keep their classes interestedly busy.

Before reminding you of what busy work is, let me state briefly what it is *not*. It is not play; nor is it merely a device for preserving a similitude of silence in the classroom. It is, or should aim to be, developing, interesting work closely connected, when possible, with the work of the various classes. Even in the best regulated classes, if the same slate exercises be given day after day, they will be performed in a listless, indifferent manner. But introduce some new feature and observe the increased activity and the growing interest. There are then no idle hands to fall into mischief, and there is no necessity for impatient glances in the direction of the seats, for, although there may be a suggestion of noise, you feel assured that it is a busy hum from a hive of workers.

Suppose, in the phonic lesson, you have been introducing a new letter, I think it wise to give as employment to the class, then taking their seats, some work that will tend to impress this new element. It must, of course, so far differ from the lesson as to prevent any feeling of monotonous repetition. You might ask the children to write, or find in their readers as many words as possible containing the new letter. When a list of ten words has been made, ask them to start at the first and write a little sentence or "story" as they call it, containing each word. To make the exercise more difficult and suitable for a higher class, require two or more words containing the new sound or combination in each sentence. As supplementary to this exercise you may allow pictures to be drawn of the objects named. Some inventive geniuses will take great interest in this sort of work.

But, as a source of never-failing delight and, I may add, development, let me recommend the *shoe-pegs*. A few pegs or short tooth-picks or anything of the kind placed on each slate will greatly interest the very little ones and afford plentiful scope for ingenuity and originality. Houses, tables, chairs, wheels, flags, streets, mathematically defined trees, leaves, etc. will fill the slates. To impress the value of a number you may also use the pegs with good effect. Let the pupils place pegs to make light, for instance, in as many ways as possible. This

will provide employment for a considerable length of time.

Another number exercise I heard of not long ago was to ask the scholars to write all the numbers below one thousand containing *unit*, or any other number decided upon.

The half-inch blocks which it is necessary to have scratched on the slates for the drawing lesson will furnish extra employment for the "quick" pupils, those who invariably finish their work before the others. These are generally the ones who most need steady employment, therefore it is well to provide for the contingency.

One additional exercise in which children of town or city schools will take great interest:—

Write names of

1—All the streets running east and west.

2— " " " north and south.

3—All the objects in the school-room.

4—Things seen on the way to school.

5—Things in a grocery store, a fruit dealer's, etc.

Just a word in closing regarding the inspection of the slates. Do not consider the time devoted in examining slates lost or wasted. It is well spent, even though it may shorten the lessons. But, when done systematically, it can be done quickly. It is the only way to prevent careless or inaccurate work. We cannot expect the majority of children to take pleasure or pride in doing neat, accurate work when notice is seldom, if ever, taken of it. We need to remind ourselves of the truth that children are, in reality, miniature men and women, that they have their ambitions very like our own, with a love of approbation highly developed. We need to keep in touch with the children, to sympathize more thoroughly with them. We require the "child-heart" with the womanly mind to understand and meet the difficulties of the primary rooms, and with the love and patience that ought to come from such a combination, we shall surely succeed in keeping the discouragements in the background, and hoping for their disappearance in days to come.

OBEDIENCE AND SUBMISSION.

ARNOLD ALCOTT.

IN the growth from lower to higher levels, one of the lessons which mankind has to learn is that of obedience. To be able to discriminate between obedience and submission should be one of the virtues of those in authority. Intelligent obedience to right, not blind submission, is the idea on which we believe we should try to work. Obedience should be won, not forced. In submission and repression, it seems to us, there is not an atom of true obedience; but an inward resistance, which will break out at the first opportunity. Repression does not do much good anyway, and we are sure that it is productive of harm—and that sometimes of an exceedingly disastrous nature.

Herbert Spencer's idea of the discipline of consequences should be the guiding star of action. The consequence of a child's wrong-doing should be its punishment. This is according to nature and will teach it obedience. We should help the little ones

to climb, rather than attempt to push them up the hill.

Reproach and punishment fall in moral effect far below an honest appreciation of the efforts (and the very least of these), of the children to do right.

Do not find fault with the little vices of the children, but help them to plant virtues in their places.

Do not repress this misdirected energy, but focalize it in the opposite direction, and so fill the life with good, that there will be no room left for the evil.

Consequently we shall not, as in the old-time schools, have lists of the talkers, the bad writers and spellers and so on, on the blackboard; but keep before the pupils the ideal of the good, and so stimulate their efforts in a noble endeavor to attain to the highest of which they are capable.

Someone has said that the RIGHT should not be an exceptional thing; but that it should be a *diet*, not a medicine. It is the thousand and one little acts in the line of right, that make the current and the momentum of that life which in later years will decide the destiny of the man when temptation is presented.

Beside giving honest appreciation for true endeavor, let me urge you *not to rebuke publicly*, if you would have the children develop in sensitiveness to your approval and disapproval. Admonish privately.

Again, *do not judge hastily*. If you cannot discover the motive of an act, remember that we have it from Plutarch that "it is often well to pretend not to have observed some actions of children." And lastly, never do for a child what he can do for himself.

Let me close by asking you to have at this season talks on seeds, on the awaking of the flowers, the trees, the moths, etc., and to teach little Easter gems, such as the following:—

"The little flowers come from the ground,
At Easter time, at Easter time,
They raise their heads and look around
At happy Easter time.
And every little flower doth say,
'Be glad and full of joy to-day,
For all that sleep shall wake again
And spend a long, glad Easter day.'"

"Then waken, sleeping butterflies,
At Easter time, at Easter time,
And spread your golden wings and rise,
At happy Easter time.
And these bright creatures seem to say,
'Be glad and full of joy to-day,
For all that sleep shall wake again,
And spend a long, glad Easter day.'"

ORAL instruction, except as an auxiliary to the text-book—except as an incitement to pupil's interest and a guide to his self-activity and independent investigation in the preparation of his next lesson—is a great waste of the teacher's energy and an injury to the pupil. The pupil acquires a habit of expecting to be amused rather than a habit of work and a relish for independent investigation. The most important investigation that man ever learns to conduct is the habit of learning by industrious reading what his fellow-men have seen and thought. Secondary to this is the originality that adds something to the stock of ideas and experiences of the race. The pupil who has not learned yet what the human race have found to be reasonable, is not likely to add anything positive to the sum total of human knowledge, although he will certainly be likely to increase the negative knowledge by adding a new example of folly and failure.—*Hon. W. T. Harris.*

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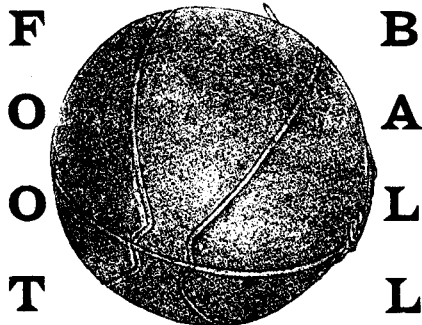
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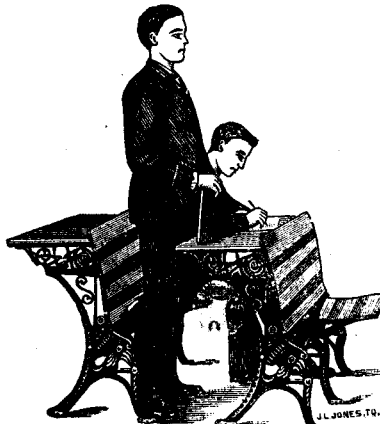
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April and May.

April:

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Toronto University Examinations in Medicine begin.

27. Toronto University Examinations in Law begin.

30. Art Schools Examinations begin.

May:

1. ARBOR DAY. Examinations for First Class Certificates, Grades A and B, at the University of Toronto begin.

Notice by candidates for the Entrance Examinations to Inspectors, due.

By-laws to alter school boundaries—last day for passing. [P.S. Act, sec. 81 (3).]

Legislative grant apportioned by Department. [P.S. Act, sec. 136.]

3. Inspectors to report to Department number of papers required for the Entrance Examinations.

7. Return by Township Clerk of School Accounts to County Clerk, due. [P. S. Act, sec. 127.]

24. QUEEN'S BIRTHDAY (*Sunday*). Notice by candidates for the Departmental Primary and Junior, and Senior Leaving Examinations to Inspectors, due.

25. Notice of the same by Inspectors to Department, due.

ANNUAL EXAMINATIONS, 1891.

April:

1. Notice from candidates for First Class Certificates, Grades A and B, to Department, due.

23. Art School Examinations begin.

May:

1. Examinations for First Class Certificates, Grades, A and B, at the University of Toronto begin.

Notice by candidates for the High School Entrance Examinations, to Inspectors, due.

3. Inspectors to report to Department, number of papers required for the same.

24. Notice by candidates for the High School Primary, Leaving and University Matriculation Examinations (pass and honor,) to Inspectors, due.

25. Notice of the same by Inspectors, to Department, due.

June:

8. Examinations at Normal Schools begin.

26. Kindergarten Examinations begin.

July:

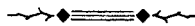
2. High School Entrance Examinations begin.

7. The High School Primary, Junior Leaving and University pass Matriculation Examinations begin.

14. The High School Senior Leaving and University honor Matriculations begin.

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