

Technical and Bibliographic Notes / Notes techniques et bibliographiques

Canadiana.org has attempted to obtain the best copy available for scanning. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of scanning are checked below.

- Coloured covers /
Couverture de couleur
- Covers damaged /
Couverture endommagée
- Covers restored and/or laminated /
Couverture restaurée et/ou pelliculée
- Cover title missing /
Le titre de couverture manque
- Coloured maps /
Cartes géographiques en couleur
- Coloured ink (i.e. other than blue or black) /
Encre de couleur (i.e. autre que bleue ou noire)
- Coloured plates and/or illustrations /
Planches et/ou illustrations en couleur
- Bound with other material /
Relié avec d'autres documents
- Only edition available /
Seule édition disponible
- Tight binding may cause shadows or distortion
along interior margin / La reliure serrée peut
causer de l'ombre ou de la distorsion le long de la
marge intérieure.

- Additional comments /
Commentaires supplémentaires:

Canadiana.org a numérisé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de numérisation sont indiqués ci-dessous.

- Coloured pages / Pages de couleur
- Pages damaged / Pages endommagées
- Pages restored and/or laminated /
Pages restaurées et/ou pelliculées
- Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées
- Pages detached / Pages détachées
- Showthrough / Transparence
- Quality of print varies /
Qualité inégale de l'impression

- Includes supplementary materials /
Comprend du matériel supplémentaire

- Blank leaves added during restorations may
appear within the text. Whenever possible, these
have been omitted from scanning / Il se peut que
certaines pages blanches ajoutées lors d'une
restauration apparaissent dans le texte, mais,
lorsque cela était possible, ces pages n'ont pas
été numérisées.

Continuous pagination.

The Educational Journal.

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

VOL. III.

TORONTO, JULY 1, 1889.

No. 6.

The Educational Journal.

Published Semi-monthly.

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

J. E. WELLS, M.A. *Editor.*
H. HOUGH, M.A. *Manager Educational Dept.*

Terms:—One dollar and fifty cents per annum. Clubs of three, \$4.25; clubs of five, \$6.75. Larger clubs, in associations, sent through association officials, \$1.25 each. Individual members, subscribing at a different time from that of the formation of the Club, may send their subscriptions to this office. Their orders will be taken at club rates.

New subscriptions may begin at any time. Payment, when by mail, should be made by post-office order or registered letter. Money sent in unregistered letters will be at the risk of the senders.

In case it may be necessary to make change, please send it in one cent stamps.

The date at the right of the name on the address-label shows to what date the subscription is paid. The change of this date to a later one is a receipt for remittance.

Renewals of all subscriptions should be made promptly.

Subscribers addressing the office on any business will, in all cases, please give the names of the post-offices to which their papers are being sent at the time of writing.

Rates of advertising will be sent on application. Business communications should be addressed to the publishers; those relating to matter for insertion in the paper, to the editor. These distinct matters should always be treated on separate sheets of paper.

PUBLISHED BY

THE GRIP PRINTING AND PUBLISHING CO.

TORONTO, CANADA.

T. G. WILSON, *General Manager.*

Table of Contents.

	PAGE
EDITORIAL NOTES.....	85
EDUCATIONAL THOUGHT.....	86
SPECIAL PAPER—	
Politeness in Our Schools.....	87
TEACHERS' MISCELLANY—	
Professional Recommendations.....	88
Brevity.....	88
EDUCATIONAL MEETINGS—	
West Bruce Teachers' Association.....	88
Annual Meeting of the Dufferin Teachers' Association.....	89
Norfolk Teachers' Institute.....	89
EXAMINATION PAPERS—	
University of Toronto Annual Examinations.....	90
EDITORIAL—	
Public vs. Separate Schools.....	92
The Deadly Cigarette.....	92
The Moral Aspects of Science Teaching.....	92
CONTRIBUTORS' DEPARTMENT—	
North-West Education.....	93
BOOK REVIEWS, NOTICES, ETC.....	93
MATHEMATICS—	
Correspondence.....	94
SCHOOL-ROOM METHODS—	
Reading with Junior Classes.....	95
How We Wrote Letters.....	95
In Drawing.....	95
FOR FRIDAY \ TERNOON—	
Six Little Brothers.....	96
The Old Hundred.....	96
PROVINCIAL TEACHERS' CONVENTION.....	96

Editorial Notes.

THE annual meeting of the West Bruce Teachers' Association seems to have been a particularly good one, if we may judge from the full report given in the *Kincardine Review*. The discussions were so vigorous, and contained so many good hints and suggestions, that we shall reproduce as many of them as we can in this number or the next, in our Practical Departments.

IN reply to a question asked in Question Drawer of last issue, we replied that we knew of no "Home Knowledge Association" in Toronto. We have since learned that there is a branch of this useful Association, at 114 Bay street, in this city. Full information in regard to it can no doubt be had by writing to that address.

THE two new books issued by the publishers of the JOURNAL are fast becoming favorites with the teachers. They are *Practical Problems* (700 in *Arithmetic*, and *One Hundred Lessons* (400 exercises) in *English Composition*. These are distinctively teachers' books, designed to assist by furnishing properly graded exercises in their respective subjects. Why a teacher should spend his time and waste his energies in devising problems and exercises in these subjects, when he can have books giving him all he requires for so small a figure, it would be difficult to explain. A teacher's time and efforts are too valuable for such waste. Send 25 cents to *Grip Printing & Publishing Co.*, 26 Front street west, Toronto, and get a copy of either of these books. Or, to be well furnished for exercises in these subjects, order them both.

THE vigorous discussion, in the West Bruce Teachers' Association, of the inductive method in teaching, shows how thoroughly alive many of our teachers are to the advanced educational thought and methods of the day. The views so well presented by Messrs. Yule, Powell and others, are worthy the careful attention of all who are ambitious of becoming educators, instead of mere drillers and taskmasters for children. As might be expected, some were found still to champion the old ideas and methods, such as: the memorizing of facts is the great end of history teaching; that grammar can be best taught on the old plan of committing definitions and rules before applying them, etc. But the light is spreading and we are sure that further reflection, experiment and comparison will soon

convince all those whose minds are really open to conviction that the method which makes constant demands upon the intelligence and reasoning powers of the child is the only real education.

DR. JOHNSON is credited with having said, "I would rather have the rod to be the general terror to children, to make them learn, than tell a child, 'If you do this or that, you will be more esteemed than your brothers or sisters,'" and to have argued the point as follows: "The rod produces an effect which terminates in itself. A child is afraid of being whipped, and gets his task, and there's an end on't; whereas by exciting emulation and comparisons of superiority you lay the foundation of lasting mischief—you make brothers and sisters hate each other." The gruff old philosopher may have been right or wrong in his preference of one bad motive force to another. It does not seem to have occurred to him, or in fact to many in his time, that there might be a more excellent way than either, one free from the moral objections of both methods. Is it a modern discovery that a thirst for knowledge is innate in a healthy mind, and that the child who is properly treated in early years will take to study as naturally and eagerly as to tempting fruit or athletic games? Have all our readers made the discovery for themselves?

IN the next issue of THE JOURNAL the publishers will submit the particulars of contemplated improvements in the paper. These improvements will embrace a complete new typographical outfit—commonly called "a new dress." This will certainly enhance the value of the paper in the eyes of its readers, who are all ladies and gentlemen of taste in such matters. Another addition to the attractions of THE JOURNAL will be what may be called a Primary Department, bestowing exclusive attention upon questions of special interest to teachers in the lower forms. This Department will be conducted by a lady teacher, and will prove a most important and valuable feature of next year's operations. Our readers need not fear any falling off in the vigor and interest with which the publishers have always sought to invest the paper. We trust that those who take it, and like it, will not fail to introduce it to their friends in the profession who may not now receive it. THE JOURNAL is admitted on all hands to be doing a good work for the profession, and to be a valuable help to its members. The 21st June number of *School Work and Play* was the last to be issued before the first Friday in September, as the paper is published only during the ten school months. It will reappear after the holidays, with all its pleasing features; and it is to be hoped that very few of the school children of Canada may miss enrolment among its readers. Their teachers, we are sure, will strive to bring this about.

HERE is a golden thought for teachers from an old number of the *Ohio Educational Monthly*:

"To bring ourselves near to the hearts of children, we must go to them by entering into *their world*. They cannot come to us by entering into ours. They have no experience of it and cannot understand it. But we have had experience of theirs, and can enter into it if we choose; and in that way we bring ourselves very near to them. But the sympathy which we thus express with children, in order to be effectual, must be sincere and genuine, and not pretended."

IN compliance with special requests we give a large amount of space in this issue to the First C. or Honor Matriculation Examination papers. The complete set would require more space than we could afford in one issue, in justice to the whole body of our readers. We have, therefore, omitted the classics and modern languages, and given the English, Mathematics, History, Chemistry, etc., complete.

OUR Special Paper in this number, "Politeness in Our Schools," is published at the request of the teachers of South Grey, and will, we feel sure, be read with interest by all our readers, and with profit by some. Inspector Campbell, in a note accompanying the MS., observes that the writer of the paper has put into practice with marked success the doctrines laid down in it. This high compliment, was, of course, not intended for publication, but as such a testimony adds greatly to the weight of the views advanced, we trust we shall be pardoned for quoting it.

AS we have often said, it seems to us that the matured thought and practical wisdom of the teachers should form a large factor in moulding the Public school system. Educational legislation should be shaped rather by the members of the profession than for them. Their opinions should, to say the least, have very great weight in determining the choice of text-books, the courses of study and the methods of teaching in Public and High schools. We were glad to note that in his speech at the closing exercises of the Normal School the Minister of Education practically endorsed this view, in so far at least as High school and University teachers are concerned. Within their own sphere the suggestions of the experience and practical wisdom of Public school teachers are equally worthy of attention.

"THE function of the teacher is that of eternal moral force, always in operation to excite, maintain and direct the mental action of the pupils—to encourage and sympathize with their efforts, never to supersede them." This maxim of Jacotot contains the fundamental principles of all good teaching. The fluent talker is not necessarily the stimulating teacher, often the opposite. To give information, to lecture, however clearly and ably, is not the first or chief work of the teacher. It cannot be too often or

too strongly insisted upon that the true measure of teaching-power is the amount of thinking, of real brain work done by the student. It is quite as easy to help the child too much as too little. Possibly more harm is done in the former way than in the latter. Only as, and in so far as, the learner is making discoveries for himself, his mind doing its own independent work, is the process of education going on.

WE have received of late a good many inquiries for copies of the examination questions set at past Departmental examinations, and have been obliged to reply that we know of no means by which copies of these papers can be obtained. It is, no doubt, necessary that every precaution should be taken in the original printing of these papers, that the number of copies printed should be limited, and every copy accounted for. No firm could afford to reprint them for sale. In view of these facts we beg leave to suggest respectfully whether it would not be well for the Department to have a few hundred extra copies struck off, bound in paper, and kept on sale, either at the Department or by the trade, for the convenience of teachers and students wishing to see them. Any one can procure a copy of past sets of the University Examinations Papers, by paying for them. Why not, in the same way, of the non-professional and professional papers of the Education Department?

THE subject of school government is one of perennial interest to the Public school teacher. Our exchanges teem with articles and paragraphs upon the best modes of maintaining discipline, most of which contain some useful suggestions. Perhaps the one thing at the same time most essential and most difficult is to carry an even hand. The same law should be in force to-day as yesterday, and should be administered with the same degree of rigidity. It is a well-worn but ever true maxim that the deterrent effect of a punishment depends more upon its certainty than upon its severity. But our experience has taught us that nothing is more difficult than to maintain a fair degree of evenness in school government. To keep the course of discipline smoothly flowing,

"Ne'er roughened by those cataracts and breaks
Which humor interposed too often makes,"

is indeed a difficult achievement. And yet much, almost everything, depends upon it. Teachers, like other mortals, and perhaps from the peculiarly trying effect of their profession upon the nerves, more than other mortals are subject to moods. The offence that seemed trifling yesterday appears flagrant to-day, when the head is aching and the nerves unstrung. Yet to conquer every tendency to rule according to temper and caprice, is the condition and price of success. The teacher whose variableness enables "boding tremblers" to learn to trace "the day's disasters in the morning face," has lost, if he ever discovered, the secret of power. Both he and his pupils are to be pitted.

Educational Thought.

"O'ER wayward childhood would'st thou hold firm rule,
And sun thee in the light of happy faces,
Love, Hope and Patience, these must be thy graces.

And in thine own heart let them first keep school—
But part them never. If hope prostrate lie,
Love too will sink and die.

Yet, haply, there will come a day

When, overtask'd at length,
Both Love and hope beneath the load give way;
Then with a statue's smile, a statue's strength,
Stands the mute sister, Patience, nothing loth,
And, both supporting, does the work of both."

—Coleridge.

IT depends on what we read, after all manner of professors have done their best for us. The true university of these days is a collection of books.—*Carlyle*.

THE parent or teacher who has not complete control of his temper should never have charge of children. Passion is a poor guide in action.—*J. J. T., in Country Gentleman*.

IF the grounds of an opinion are not conclusive to the person's own reason, his reason cannot be strengthened, but is likely to be weakened by his adopting it.—*John Stuart Mill*.

I CALL a complete and generous education that which fits a man to perform justly, skilfully, and magnanimously, all the offices, both public and private, of peace and war.—*Milton*.

THERE is another subject on which I would appeal to you. Try to gain an influence over your pupils in their hours of play. There are, I know, a great many difficulties. You want your own dinners, you want rest, you want time to prepare your lessons; but still, where there is a will there is a way. If you really desired it you could make time—perhaps by returning half an hour before school-time. The children of the poor in large towns do not know how to play. I dare say you have noticed how they stand about listlessly, or run about aimlessly, or contrive the most senseless amusements. They do not know any games; teach them. I am sure that the school lessons would be infinitely better done; the children would be more fresh, more joyous, and more fond of you.—*Mrs. Westlake*.

I HAVE struck my key-note: it is Humanity. Let us never forget it in relation to the children themselves. They are not machines; they are human beings, and you know that they have certain very definite and ever-present faculties in them. There, always to play upon, is child curiosity. The dullest of children have that. They want to know things; they do not always like the trouble of finding out, but they do want to know. Imagination is there, but it needs to act. All those faculties which are in the child are as anxious for operation as a baby's legs are when it lies and kicks to satisfy the instincts of its animal nature. Remember, too, reason is there. It gives—I won't say a dull child—but it gives an average child immense pleasure to be taught to reason out a thing, to see a fallacy, and to think straight. These are points to think of. You must try to make your influence and teaching get hold of the human element in the child, and develop its human nature.—*Rev. C. D. Du Port*.

A SEVERE discipline is not to be exercised in the matter of studies, but only in that of morals. If subjects of study are rightly arranged and taught they themselves attract and allure all save very exceptional natures; and if they are not rightly taught, the fault is in the teacher, not the pupil. Moreover, if we do not know how to allure to study by skill, we shall certainly not succeed by the application of mere force. There is no power in stripes and blows to excite a love of literature, but a great power, on the contrary, of generating weariness and disgust. A musician does not dash his instrument against a wall, or give it blows and cuffs, because he cannot draw music from it, but continues to apply his skill till he extracts a melody. So by our skill we have to bring the minds of the young into harmony, and to the love of studies, if we are not to make the careless unwilling, and the torpid stolid. A spur and stimulus are often needed, but a sharp word or a public reproof, or the praise of others who are doing well, will generally suffice.—*Comenius*.

Special Papers.

POLITENESS IN OUR SCHOOLS.

*BY MISS J. E. ANDERSON.

IN considering this subject let us regard politeness not as an end, but as a most important means. Let us consider first why is it that rudeness predominates in the majority of our schools; that the polite pupil is the exception, the *rara avis*, while the rude one is the rule?

2nd.—Why should politeness be a marked characteristic of every school?

3rd.—How can we best succeed in giving it its essential place in our schools?

First, why is rudeness so very prevalent in our schools? No doubt many of us console ourselves with the idea that it is owing to the neglect of parents, and that though numbers of our children are outside of school-houses, allowed to "run wild," we are not to blame; that the home is the place to teach morals and manners. True enough; but where the home fails in its duty, the school must come to the rescue and the teacher must be for six hours daily *in loco parentis*.

Though rudeness in our schools is to a certain extent attributable to a lack of home-training it is, in a far greater degree, attributable to our neglect, as teachers, to make the most of the golden opportunities within our reach; and only too often is it but the reflection of our rudeness to our pupils, for as the rivulet in the meadow reflects not only the sunshine, but the shadows, so do those mirrors of our actions reproduce not only our virtues but our failings. Don't misunderstand me. I do not for one moment suppose that any on (even the very last recruit) in the "noble army" of teachers is last guilty of positive rudeness to pupils; but I do maintain that very many of us are guilty, if not every day of our lives, at least very often, of negative rudeness, of grave breaches of etiquette such as would not be tolerated in cultured society. How many of us practice in our school-rooms our "Society Manners?" Do we treat our young friends as politely in our schools, as we would in our parlors, or even as politely as we expect them to treat us? Why, some of us actually begin the day by outraging the feelings of the most sensitive pupil, by deliberately walking past them into school without so much as the "Good Morning," that many of those self-same pupils accord their dumb friends. On a day thus begun I'm sure the teacher is much ruder than the rudest of his or her pupils. We know better, and many of them do not and never will unless we are up and doing, alive to our duty in this respect. "But," we say, (and we all know the old, worn-out excuse) "No time, over-crowded school-rooms and programmes." Very true; but "no time, over-crowded school-rooms and programmes" do not enable us, as one writer suggests, to "do away with character-building in our schools." We cannot do it, for if we are not, both by example and precept, laying such a foundation of politeness as shall ornament the whole superstructure of after life, we are, by that very neglect, laying the foundation stones of rudeness and immorality. Let us not be satisfied to leave this subject to home-training, any more than we can leave reading or arithmetic, lest from the conduct of our pupils we be thought to agree with Will Carleton's District Father, when he says:—

"There aint no great good in their speakin'
Their words so polite as I see,
Provided you know what the facts is
And tell 'em off just as they be."

And what "great good" is there? This brings me to the second point, viz.: Why should politeness be a marked characteristic of every school? Why is it necessary that, in order that our schools may fulfil their highest function, they should be characterized by a spirit of genuine politeness?

First.—Because it enlists sympathy. There is nothing that establishes a bond of sympathy between teacher and pupils like the pleasant, though often half-hearted "Good morning, children," and the cheerful, hearty response of thirty, forty or fifty voices coming like the morning sun to drive away every shadow of the night "Good morning, teacher." They feel the teacher's interest in them, and

are ready to be interested. The teacher is more energetic, and the pupils more attentive for it.

Second.—It exterminates selfishness and jealousy from our schools, and consequently petty disagreements and quarrels from our play-grounds. No ments and quarrels from our play-grounds. No child, whatever his disposition, can be selfish, jealous or unkind very long in a school, where true politeness, that generous consideration of the rights and feelings of others to which St. Paul refers where he says, "Let each esteem other better than themselves" and "In honor preferring one another," is not only taught but lived by both teacher and pupils.

Third.—It instills in our boys a manly consideration of their girl playmates, and teaches our girls to expect from them that deference which every true woman expects from a gentleman. No boy that is required by his teacher to lay aside his individual comfort in behalf of his girl friend, to give up his chair when she is standing, to offer her the cup before drinking, to attend to the fire, the wood and the water without having to be asked—little things it is true, but "mighty oaks from little acorns grow"—can go out into the home to see any one of woman-kind, sister, wife, or mother do work that he could do, while he sits idly by, reading his paper perhaps and ignoring her very existence; nor will girls who have been courteously treated at school submit to such treatment as they only too often meet with in after-life. And as "Habit becomes second nature" politeness in the school means politeness in the home, better boys and girls, better men and women, happier homes, and altogether a better state of society.

Fourth.—Politeness is a stepping-stone to morality. Prof. S. H. Albro says: "You cannot have rudeness in your schools and do good moral work," and surely every teacher aims at elevating humanity, lifting it up to higher levels; and our efforts in this direction have a far greater influence on our own lives than perhaps we are aware of, for before we can raise up our pupils we ourselves must first be up, must constantly be on the watch for some way of benefiting them, morally as well as intellectually, some way of lightening the heavier cross that many of them have to bear. Thus, by the very thoughtfulness which politeness compels, teachers and pupils become daily more like Him whose perfect life is our pattern; who, though His work was made little of and He Himself misunderstood by His most intimate friends, yet "went about doing good" not only that we might have life, but that we "might have it more abundantly." The more we become like Him and our teaching like His the more shall our pupils be enabled to live better, nobler and more useful lives.

Assuming then that politeness is essential to true manhood and womanhood, and that we, as teachers, are to blame for its non-existence in our schools, it yet remains for us to decide how we can best succeed in giving it its essential place in our schools.

The most effective way is by incidental teaching. Do not make it your hobby and lecture your pupils for an hour at a time on "Good Behavior." Do not even let them suspect that you are trying to make them polite. Incidents will occur in every school which, aided by a few well-considered, well-directed words from the teacher, impress on the minds of the pupils lessons in politeness never forgotten.

For instance (and I trust you will pardon me for here referring to my own experience), on my first morning in a certain school, I said to the pupils as they came in, "Good morning," but, to my great surprise, though they all "smiled and looked pleasant," not one of about thirty-five answered me. The next morning, having learned their names the first day, I tried again, addressing each one individually, "good morning, Mary," "good morning, John," with the same result, no reply.

After ringing the bell, all in position, I said, "Children, I want your opinion," and immediately every child was "all attention." "If I went into your house, and your mother met me, and said, 'Good morning, Miss Anderson,' 'what would you expect me to do?' Every hand was raised. "To stay for tea." "To say good morning." "To answer her," are some of the many answers given. "But if I did not answer her what would you think?" "That you didn't know very much," was one answer; "That you weren't glad to see her," another. Taking the latter answer, I said, "Now, I've said 'Good morning' to each of you on

these two mornings, and no one has answered me, am I to think that you are not glad to see me? As I haven't time to say 'good morning' to each of you, I'll say to all, and I'm sure you'll answer me, 'Good morning, girls,'" and immediately there sounded forth such a hearty "Good morning, Miss Anderson," as would, for the time being, fill any teacher with enthusiasm. "But," I said, "girls, in what position was I when I spoke?" "Standing," was the answer. "And you?" No reply. "Now try again—Good morning, girls." All standing, the reply was hearty as before, "Good morning, Miss Anderson."

"Now, boys, if a lady meets a gentleman on the road, and says 'Good morning' to him, how does he salute her?" "He raises his hat." "Well, as you haven't on your hats, I want you to give me a right hand salute. Good morning, boys." Every boy on his feet, every right hand to the forehead, and the walls rang with the cheerful "Good morning, Miss Anderson." At four o'clock I said, "Good night, girls," and "good night, boys," in turn, and no one needed to ask, "What must I do?" Thus, in far less time than it takes to tell, we have established in our school such a form of greeting and leave-taking, as any teacher might be proud to receive from his or her pupils. Similarly, after the departure of our first visitor, I impressed them with the fact, that every visitor in a school is the guest, not only of the teacher but of the pupils, and as such must be received by them standing, in place of what we so often find, every head turned round and every eye staring.

And so on—opportunities daily present themselves for such lessons, which, in my experience, rarely have to be repeated.

But however well-directed, however well-chosen, these lessons are not enough. Use constantly that "bunch of golden keys"—"Good morning," "good night," "if you please," "I thank you," "excuse me," "I beg your pardon," as well as require your pupils to use it. Be what you would have your pupils be; do what you would have them do, and rest assured that they will find out for themselves the use and beauty of politeness, and appreciate it accordingly; whereas, if you are not polite, no amount of lecturing will instill in your pupils principles, which it is only too evident are lacking in yourself. Be the ideal which you present them, and you will never lack followers among your pupils. They will respect, love, obey and imitate you.

"As in the elder days of art,
Builders wrought with greatest care,
Each minute and unseen part,
For the gods see everywhere.
Let us do our work as well,
Both the unseen and the seen.
Make the house where gods may dwell
Beautiful, entire and clean."

A GOOD IDEA.

THE teacher was absent. We took the school. Spelling was the order of the programme. Papers were passed and pupils' names written. One pupil said, "Shall we spell a geography word?" "I don't know whether there is one in the lesson or not," said I. "If there is I hope you will spell it, when I pronounce it." Hands flying wildly. "Well," said I to the speaker. She replied that the teacher allowed each pupil to spell a geography word of his own selection each day. "Why, yes, certainly, spell it," said I. This gives each pupil an opportunity to review the words he most needs. He will study the word he is doubtful about. The teacher sees that they select the more common geographical words that everybody should know how to spell.—*Indiana School Journal*.

ONE impulse from a vernal wood,
May teach you more of man,
Of moral evil and of good
Than all the sages can.

—Wordsworth.

SMALL service is true service while it lasts:
Of humblest friends, bright creature scorn
not one:

The daisy by the shade it casts,
Protects the lingering dewdrop from the sun.

—Wordsworth.

*Read before the South Grey Teachers' Association, at Flesherton, May 30th, 1889.

Teachers' Miscellany.

PROFESSIONAL RECOMMENDATIONS.

THE East Huron Teachers' Institute passed the following resolutions at its recent session:—

Resolved, That the members of this Association request the Hon. the Minister of Education to take immediate action to have the present Public School History supplanted by a more suitable text-book for Public school children, the language in the present history being far too difficult.

Resolved, That the Public School Arithmetic is quite unsuitable as a text-book for junior classes, and in view of this fact, that we ask the Hon. the Minister of Education not to strike off the list of authorized books, Kirkland and Scott's elementary arithmetic.

Resolved, That either Euclid, Book I, be placed on the curriculum of studies for third class certificates, or that mensuration be removed, since the teaching of mensuration to students who have not a knowledge of Euclid is a violation of the first principles of education.

Resolved, That biology and chemistry be made optional for second class certificates.

Resolved, That whereas 786 candidates, who failed at the non-professional examination in passing for second and third class certificates, during the past five years, were awarded certificates on appeal; from this we would infer that a large number also of those who were passed by the sub-examiners received certificates which they were not entitled to, owing to the examiners erring in the other direction, we would, therefore, recommend that the Minister of Education would exercise more care in the future in selecting the sub-examiners, so that none but thoroughly competent and reliable persons be placed in that important position.

Resolved, That the Minister of Education be recommended to select the members of the Central Committee so that no section, either of the Province or educational interests, be unduly represented, and that no one be placed on this committee who is not in full accord with the best interests of the Public and High school education in this Province.

WHEN the discovery was made and announced to a class in a great English university that in all the original languages of the words "live" and "love" are one and the same, a student named Bardillion immediately wrote:

"The night has a thousand eyes,
The day but one;
Yet the light of the whole world dies
With the setting sun.

The mind has a thousand eyes,
The heart but one;
Yet the light of our whole life dies
When love is done."

BREVITY.

LEARN to be brief. Long visits, long stories, long exhortations, and long prayers seldom profit those who have to do with them. Life is short. Time is short. Moments are precious. Learn to condense, abridge, and intensify. We can endure many an ache and ill if it is soon over, while even pleasures grow insipid, and pain intolerable, if they are protracted beyond the limits of reason and convenience. Learn to be brief. Lop off branches: stick to the main fact in your case. If you pray, ask for what you would receive, and get through; if you speak, tell your message, and hold your peace; boil down two words into one, and three into two. Always learn to be brief.—*North Carolina Teacher.*

THE primary principle of education is the determination of the pupil to self-activity; and that teacher who fully recognizes the active agency of the pupil's mind in acquiring knowledge and experience and in applying them to the affairs of every-day life, will be the most useful to her pupils. In the training of youthful minds we regard *formation* as of more importance than *information*, the manner in which work is done as of greater conse-

quence than the matter used in the work. All true education is *growth*, and what we grow to be concerns us more than what we live to know. Plato has profoundly defined man, "the hunter of truth;" for in this chase, as in others, the *pursuit* is all in all, the *success* comparatively nothing. We exist only as we energize: *pleasure* is the reflex of unimpeded energy; energy is the means by which our faculties are developed, and a higher energy the end which their development proposes. In *action* is thus contained the existence, happiness, improvement, and perfection of our being; and knowledge is only previous, as it may afford a stimulus to the exercise of our powers and the condition of more complete activity.—*Sir William Hamilton.*

Educational Meetings.

WEST BRUCE TEACHERS' ASSOCIATION.

THE annual meeting of West Bruce Teachers' Association was held in Kincardine, on Wednesday and Thursday, 22nd and 23rd days of May. The vice-President, N. Robertson, B.A., presided during the morning session on Wednesday, and the President, D. D. Yule, of Lucknow, at the other sessions.

FIRST DAY.

Only a few teachers were in attendance at the morning session, and the only business done was the reading and confirming of minutes and the appointment of auditors.

At four minutes past one o'clock the afternoon session opened with the roll call, which showed sixty in attendance.

The President gave an address on the Teaching of History. A summary of this and of the interesting discussion which followed it will be found in another column, in this or next issue of the JOURNAL.

Mr. Powell followed with an exercise illustrating the inductive method in Grammar. This also elicited a lively discussion. The whole, as far as reported, will be read with interest in our Methods department.

Miss Agnes Knox, B.E., read an excellent paper on Elocution and Voice Culture. The necessity for breath management, the importance of graceful and suitable gesture, the value and influence of facial expression were fully illustrated. The proper management of the head, eyes, muscles, chest, ribs and diaphragm was shown to be exceedingly important in successful speaking and reading. The qualities of voice as sweet, clear, loud, rough, strong, weak, etc., were discussed, the suitable pointed out and their modes of cultivation indicated. The simple elementary sounds were placed on the board and explained. The importance of distinguishing the various vowel sounds was clearly shown. The necessity for attending to the consonants was clearly proven. Miss Knox severely criticized all vulgar tones and pronunciation, slang, mannerisms and provincialisms. She discussed fully the different divisions of pitch and stress, showing the value of each and the kind of reading for which each should be used. The mental element received special attention. Perception, memory, will, sensibilities and imagination were shown to each have a special part to perform in the complete interpretation of any selection. The color of tone must be such as to give suitable color to the expression. The emotions must receive proper attention. The reader must have a good knowledge of the author, must fully comprehend the author's purpose and motives. The mental picture must be mastered. The mind of the reader must be concentrated upon the subject and must never wander. His renderings must be as vivid as if he were himself the real actor in the scene. Success cannot be secured by feigning what is not really and truly felt. The artificial is sure to be discovered and condemned, but the genuine will always command attention, give pleasure and secure success.

A very successful entertainment, consisting of readings by Miss Knox, a chorus by the Glee Club, kindergarten songs and solos, was given in the evening.

SECOND DAY.

The business opened with prayer by the President. Seventy teachers were in attendance. Mr. D. D. Yule criticised the literature questions given

in the EDUCATIONAL JOURNAL, of January 1st, 1889. Teachers, he said, must not be discouraged if their pupils fail to answer such questions; they were, he said, absurd in every respect. The aim of most questions in literature is to make teachers and pupils critics. The aim should be to make all lovers of good literature, to inspire in all a desire to become acquainted with such authors as Scott, Milton, Shakespeare. If Canadians are to become famous as literary men the present mode of dealing with literature must be improved and a change made in the mode of examination designed to produce satisfactory results, must supplant the present carping, critical plans pursued.

Mr. A. H. Smith read an excellent paper on Botany. He strongly favored the study of the natural sciences, and among them botany holds an important place. Owing to the many options in our High schools and colleges the different sciences have their champions. He was present to champion the cause of the natural sciences. In studying them the student is brought into direct contact with the concrete in its every form and variety. The beauties of color, symmetry and design are constantly met. Nature teems with objects interesting and educative, calling for close and constant examination. The inductive method of teaching and reasoning have here their broadest fields of application. Nature supplies the material profusely, and leaves man to study, classify and apply. Minerals, plants and animals abound in matters of interest and practical advantage to our race. The plant depends upon the mineral, and the animal on the plant, and the mineral and man depend upon them all. Great men have not always received a college education; the school of many of them was Nature. The benefactors of our race have, in most instances, come from among those brought into direct contact with Nature and her products. This is shown by the history of telegraphing, printing, steam power, manufacturing, commerce, and geographical discovery.

An animated discussion followed.

THE ELECTION OF OFFICERS.

President, A. H. Smith; vice-President, Miss A. M. Johnston; Sec.-Treas., E. C. Powell. Directors—Miss L. Sturgeon, J. F. Yemen, and Messrs. Jas. McKinnon, A. Campbell, D. D. Yule, N. D. McKinnon. Delegates to Provincial Association—Miss A. M. Johnston and A. H. Smith.

A resolution was passed expressive of the sympathy of the teachers with Inspector and Mrs. Campbell in the deep sorrow caused by the death of their only daughter.

The afternoon session opened at 1.30 p.m. A lively discussion on the Fifth Reader in Public schools was opened by Mr. Yule. He considered that the Public school course should be free to all and end with the Fourth Book work. He was strongly opposed to class legislation, and considered, therefore, that all education beyond the fourth class should be paid for. Much teaching power is wasted in many of our rural schools by teachers devoting two hours a day to two and three pupils in the fifth class, while classes having 10 and 15 pupils in them, do not receive the teacher's direct attention for more than one hour. He cited five cases of schools having fifth classes in which the numbers were 2, 1, 3, 2 and 5 respectively. When asked to give his own experience, he stated that in large villages without a High school, a fifth class becomes almost a necessity.

A long and interesting discussion followed. The weight of professional opinion seemed to be opposed to the establishment of a fifth form, except when positively demanded by parents or guardians.

Mr. Robertson illustrated his method of teaching High school entrance prose literature. After a few introductory remarks he discussed fully the first and second paragraphs of "National Morality," by Bright, found on page 295 of the new Fourth Book. In dealing with the subject, he treated the association as a class, asking questions, discussing and comparing answers. The object and scope of the selection were discovered; the leading and subordinate thoughts ascertained, the figurative language and literal equivalent settled. The appropriateness of the words used and of the order of their occurrence was clearly shown. The etymology and meaning of important words received considerable attention. Imperfect similes and examples of cross construction were pointed out and improve-

ments suggested. The character of the relation existing between the two paragraphs was well indicated. The whole treatment of the subject was able, interesting and instructive, but many of the teachers were inclined to consider parts of it rather in advance of what should be expected of entrance candidates.

ANNUAL MEETING OF THE DUFFERIN TEACHERS' ASSOCIATION.

The Dufferin Teachers' Association opened its annual convention in the High School building on Monday morning. The meeting was called to order at 10 o'clock, President M. N. Armstrong in the chair. After the roll call, which showed a full attendance of members, and the reading of the minutes of the last session, the president read a very interesting and instructive address on the aims and objects of the convention. Mr. Stewart, after a lengthy debate on the address, moved a vote of thanks to the President, which was carried. Inspector Gordon seconded the motion, suggesting that it be printed.

Messrs. Grey and Russell were, on motion, appointed auditors. Several communications were laid before the convention and disposed of. Mr. W. Houston, M.A., Legislative Librarian, then addressed the gathering on "Practical Teaching of English." The speaker had an attentive hearing, as the subject was one of considerable importance to the teacher. The meeting then adjourned until 1 p.m.

AFTERNOON SESSION.

After the despatch of routine business, Miss Ralph, with a class of small pupils, illustrated her method of teaching an object lesson in a very interesting and instructive manner.

Mr. Houston then concluded his lecture on the practical treatment of English, after which a selection was contributed by the Glee Club.

Mr. A. Steele, B.A., headmaster of the Orangeville, High School, delivered a very practical address, in which he tendered some valuable hints for the guidance of teachers. The Glee Club followed with another selection, and the Association then adjourned until Tuesday morning.

SECOND DAY.

The teachers re-assembled at 9 o'clock, when the report of the auditors was read and, on motion, adopted.

Mr. Stewart read his paper on "Is Teaching, as a Profession, a Failure?" The essay was humorous and was evidently appreciated. A short discussion followed the reading of the paper.

Miss Smith submitted an essay on "Our Little Ones," which met with the approbation of the convention.

Mr. Bonis read a paper on "Unknown Quantities," which dealt with the scientific principles underlying the method of proceeding from "the known to the unknown." The essay was an excellent one in every particular, and one which will leave a lasting impression.

The election of officers for the ensuing year was next proceeded with, and resulted as follows:—President, Mr. Stewart; vice-President, Miss Moir; Secretary-Treasurer, Mr. Bonis; Managing Committee, Messrs. McMaster, Evans, and Misses Haney, Cunningham and Taylor. Mr. Stewart was re-appointed delegate to the Provincial Teachers' Association at Niagara. The meeting then adjourned until 1.30 p.m.

AFTERNOON SESSION.

Mr. Houston resumed his lecture on the scientific treatment of English when the Association re-assembled at 1.30 o'clock. He also dealt with "Æsthetic English."

Messrs. McMaster, Smith, Turnbull, Armstrong, and Misses Shain, Henderson and Hopper were appointed a committee to consider and report upon the question of promotion examinations, and Mr. Stewart's paper, "Is Teaching, as a Profession, a Failure?"

Misses Jelly and Turnbull rendered an excellent duet, the Glee Club sang a chorus, a vote of thanks was tendered those who participated in the programme, and the Dufferin Teachers' Convention came to a successful close.

EAST HURON TEACHERS' INSTITUTE.

THE annual meeting was held in the assembly room of the Clinton Collegiate Institute, on Thursday and Friday, May 22nd and 23rd.

FIRST DAY.

In the absence of the President, Mr. Dorrance, Head Master Turnbull was appointed to the chair.

After routine business, Mr. J. Dearness I. P. S., East Middlesex, introduced the subject: "The Elementary Rules in Arithmetic." He spoke of the great value placed on the subject in former years, and dwelt on the changes that have recently taken place in the teaching of it. "The Logic of the School-room," it has been called by Dr. McLeilan. In teaching numbers he placed great stress on associating ideas with them. To this end he showed some interesting ways of using chalk, buttons, pebbles, etc.; teaching with a variety of such objects is better than the constant use of the numeral frame. Addition, subtraction, multiplication and division were made easy by merely using such simple objects as sticks.

Mr. Robb, Mathematical Master, Clinton Collegiate Institute, gave an interesting address on "Botany." As an old public school-teacher he counselled teachers to take up some such subject as Geology or Botany, which was not taught in the Public school. The teacher who chose the latter would find himself amply repaid when he comes to illustrate the lessons in the Readers. Besides, there are times when the class becomes listless, often owing to the condition of the atmosphere or for other reasons, and a short talk on some topic in botany will prove both interesting and instructive. The teacher who, by means of pocket lens, needles, knife, and a suitable text-book, uses his spare moments in the prosecution of the study of botany, will train his observing faculties, will gain a great amount of useful information, and thus be in a position to admire the beauties of nature and add more enjoyment to the school-life of the children.

Mr. Lough, Principal Clinton Model School, read a paper on "History." He discussed the subject generally, its value as an educative force, and gave valuable suggestions on the use of text-books. As this paper is to be published, we may, perhaps, be able to give it in full at a later date.

In the evening a public meeting was held in the town hall, at which Mr. Manning, chairman of the Clinton Collegiate Institute, Board, presided. An interesting programme of exercises had been prepared, and was successfully carried out by the teachers.

SECOND DAY.

On Thursday morning Mr. Dearness discussed the subject, "Reading with Junior Classes." He knew a teacher in his own inspectorate, who kept a small collection of flowers in his register, to illustrate the lessons in botany, in the Readers. The speaker, by means of a class of young pupils in attendance, showed many valuable principles and methods underlying the teaching of the first lessons. A condensed report of this lesson, as given in the *Clinton New Era*, will be found in our "Methods" Department.

Mr. Manning, Chairman of the Collegiate Institute Board of Trustees, Clinton, was introduced, and delivered a vigorous and practical address on several topics in connection with Education. A lively discussion ensued, in which Messrs. Clarkson, Doig, Lough, Robb, Malloch, and others joined. A vote of thanks was passed, on the motion of Mr. Clarkson, seconded by Mr. Malloch, with the request also, that the paper be placed in the hands of the Association for publication; this, it is expected, will be done next month.

The following officers were appointed for 1889: President, W. H. Stewart; Vice-President, D. M. Robb; Sec.-Treasurer, A. H. Plummer; Delegate, W. Doig; Executive Committee, J. Dickson, D. Johnston, Miss Helyar, Miss Edwards, Miss Simpson.

Mr. R. Hicks, of Egmondville, addressed the Convention on Public School Temperance and Hygiene. This subject has no set place on his time-table, and he teaches it as examples and circumstances permit. He explains to his classes the general principles of anatomy, naming the particular bones, the heart's divisions and the circulation of the blood; the lesson that there is a Divine Architect of the wonderful structure should be

thoroughly inculcated. Children should not, as a rule, eat their lunch until noon, and the practice of eating apples at irregular times should be stopped. The address contained also many good hints as to the necessity of proper temperature in school-rooms, erect positions, suitable clothing, light in the homes, etc.

At the afternoon session Mr. Dearness addressed the meeting on "Desk Occupations of Junior Classes." This was, perhaps, his most interesting address. He showed, amongst other useful hints, how a good deal of the work of the Kindergartens may be introduced into the ungraded schools, with excellent results.

A number of resolutions were passed. Several of these, relating to questions of general educational interest, will be found elsewhere.

NORFOLK TEACHERS' INSTITUTE.

THE Norfolk Teachers' Institute met in the School-house, Port Dover, on the 30th and 31st of May.

WEDNESDAY MAY 29TH.

Owing to a very heavy rain, the attendance in the morning was so small that no attempt was made to carry out the programme.

In the afternoon, though the rain continued there was a fair attendance of teachers, many more than could have been expected.

Mr. Parsons, President of the Institute, opened the meeting with a few appropriate remarks, after which Mr. Archer read a very interesting and carefully prepared essay on his "Observations in Paris." Mr. Archer while travelling, evidently kept his eyes open and his mind employed.

The President announced that Miss McKenna and her class could not be present on account of illness of some pupils; thus the Institute was unfortunately deprived of the Kindergarten Exercises.

Mr. Dearness, Public School Inspector for Middlesex, addressed the meeting on "Employment of Junior Pupils at their Seats." The speaker's extended experience and his originality enabled him to make such practical suggestions as no teacher of an ungraded school could afford to lose.

In the evening the Town Hall was filled to its utmost capacity, and some of the citizens were obliged to go away, being unable to find room. The President of the Association, Mr. D. W. Parsons, was in the chair. After an interesting programme of music, recitations, etc. had been completed, J. Dearness, Esq., Public School Inspector of Middlesex, gave the lecture of the evening, entitled "Knowledge vs. Education." The lecture was excellent and very many went away with a clearer idea of the wide difference between the two than they had ever had before, and a better and truer knowledge of the real meaning of the word education.

FRIDAY, MAY 31ST.

Institute was opened by the President, after which the auditor's report was received.

Dr. Wadsworth then entertained the audience with his "Educational Reminiscences." We were left to make our own inferences, but the immense superiority of our school system and management, and methods of teaching over those of fifty or even fewer years ago was easily gathered from his remarks.

"Crayon Sketches," skilfully drawn on the blackboard by Master Wilton Chrysler, afforded much amusement.

Mr. Dearness was again called upon. He took up "Teaching Composition," and illustrated his method with a class of small pupils.

Miss Mattie Gillies then gave a recitation, after which the Institute proceeded to the election of officers.

The following officers for the ensuing year were elected:—President, J. T. Carson; Vice-President, Mr. Foster; Treasurer, Mr. Smith; Secretary, Miss McCool; Committee, Miss Perney, W. C. McCall, J. Alexander, Mr. Christie and Miss Wells.

Mr. Christie read a paper on "Teaching Reading," accompanied by a reading and a recitation, after which the meeting adjourned *sine die*.

The exceedingly bad weather made it impossible for all teachers to get here.

Over sixty were present as it was, and all things considered the convention went off remarkably well.

Examination Papers.

UNIVERSITY OF TORONTO. — ANNUAL EXAMINATIONS, 1888.

JUNIOR MATRICULATION.

ENGLISH GRAMMAR AND PHILOLOGY.
HONORS.

Examiner:—JOHN E. BRYANT, M.A.

NOTE.—Candidates for Scholarships will take questions 1, 2, 3, 4, 5, 6, 8 and 9. Other candidates will take questions 1, 3, 4, 5, 7, either 2 or 8, and either 6 or 9.

“Lastly—take the Art of Building—the strongest—proudest—most orderly—most enduring of the arts of man; that of which the produce is in the surest manner accumulative and need not perish, or be replaced; but if once well done will stand more strongly than the unbalanced rocks—more prevalently than the crumbling hills. The art which is associated with all civic pride and sacred principle; with which men record their power—satisfy their enthusiasm—make sure their defence—define and make dear their habitation. And in six thousand years of building, what have we done? Of the greater part of all that skill and strength, no vestige is left, but fallen stones that encumber the fields and impede the streams. But from this waste of disorder, and of time, and of rage, what is left to us? Constructive and progressive creatures, that we are, with ruling brains and forming hands, capable of fellowship and thirsting for fame, can we not contend, in comfort, with the insects of the forest, or, in achievement, with the worm of the sea? The white surf rages in vain against the ramparts built by poor atoms of scarcely nascent life; but only ridges of form—less ruin mark the places where once dwelt our noblest multitudes. The ant and the moth have cells for each of their young, but our little ones lie in festering heaps, in homes that consume them like graves; and night by night, from the corners of our streets, rises up the cry of the homeless—I was a stranger, and ye took me not in.”

1. Describe the grammatical duties discharged in the extract by the following words:—“Lastly”, l. 1; “strongest”, l. 2; “that”, l. 3; “need”, l. 5; “but”, l. 5; “if”, l. 5; “done”, l. 6; “art”, l. 8; “dear”, l. 12; “And”, l. 12; “creatures”, l. 19; “that”, l. 19; “thirsting”, l. 21; “in”, l. 22.

2. (a) With the letters of our alphabet and some simple diacritical marks, devise a set of necessary and sufficient phonetic symbols for the writing of English words, and affix to each symbol a description of the sound it is intended to symbolize.

(b) With the phonetic symbols you have thus devised

(1) rewrite any five consecutive lines of the first thirteen lines of the extract;

or (2) indicate a complete classification of the elementary sounds of our language.

(N.B.—A choice is here allowed between (1) and (2).)

3. (a) (1) Explain clearly the difference between presentive and symbolic words.

(2) Explain how it is that symbolism is the pervading characteristic of all human language.

(3) In what sense, however, may it be said that nearly all words are originally presentive?

(4) Explain how it is that many words, once strongly presentive, have gradually lost their presentive faculty, and have now become of an un-mixed symbolic character.

(5) Illustrate, by referring to the case of the word *one*, the tendency which words have to lose their presentive faculty for certain specialized uses, and to become more and more symbolic.

(b) Write out lines 14 to 22 (inclusive) of the extract, underscoring the strongly presentive words with two lines, and the less strongly presentive words with one line, leaving the words of un-mixed symbolism without any underscore.

4. (a) Name our chief symbol-verbs. Why are they so called? Why is the verb *be* called the pri-

mary symbol-verb? Give some description of the original presentive notion attached to each one of the symbol-verbs you have named.

(b) For each of these verbs used with a presentive sense in the extract, express the nearest synonym.

5. (a) Mr. Earle classifies adverbs into two main divisions, and each of these again into three subdivisions. Describe this classification, and write down sentences embodying examples of adverbs belonging to each subdivision.

(b) As far as possible classify the adverbs in the extract according to this scheme.

6. Write short notes relating to the historical grammar of any eight of the following words:—“the”, l. 1; “most”, l. 2; “that”, l. 3; “but”, l. 5; “more”, l. 6; “than”, l. 6; “which”, l. 8; “their”, l. 10; “what”, l. 13; “of”, l. 14; “no”, l. 15; “this”, l. 17; “only”, l. 26; “where”, l. 27; “each”, l. 29; “them”, l. 31; “ye”, l. 33.

7. Analyse any eight of the following words, and show with respect to each word the forces of its several affixed and suffixed parts as factors of its meaning:—“accumulative”, l. 4; “prevalently”, l. 7; “civic”, l. 9; “fallen”, l. 15; “encumber”, l. 16; “impede”, l. 16; “disorder”, l. 17; “capable”, ll. 20-21; “fellowship”, l. 21; “achievement”, l. 23; “atoms”, l. 25; “nascent”, l. 26; “multitudes”, l. 28; “homeless”, l. 33.

8. With respect to any eight words of the following list, show how their meaning, according to modern usage, is illuminated and made more impressive and picturesque by a knowledge of

(1) their meaning according to an earlier usage;

or (2) the meaning of earlier forms of the same words;

or (3) the meaning of earlier words from which these words have in part or in whole been derived;

or (4) the meaning of other words of cognate origin:—

“manner”, l. 4; “stand”, l. 6; “unbalanced”, l. 7; “crumbling”, l. 8; “sacred”, l. 9; “principle”, l. 9; “record”, l. 10; “satisfy”, l. 10; “enthusiasm”, l. 11; “strength”, l. 15; “vestige”, l. 15; “waste”, l. 17; “thirsting”, l. 21; “comfort”, l. 22; “insects”, l. 22; “forest”, l. 23; “worm”, l. 23; “surf”, l. 24; “rages”, l. 24; “scarcely”, l. 26; “once”, l. 27; “cells”, l. 29; “festering”, l. 30; “graves”, l. 31; “night”, l. 31; “corners”, l. 32; “streets”, l. 32; “stranger”, l. 33.

9. (1) What is meant in grammar by “law”?

(2) Whence do the laws of grammar derive their force and authority?

(3) In what sense is it true that some of the laws of grammar are stronger or higher than others?

(4) “The exceptions of grammar are not infractions of laws, but instances of laws that, under the influence of higher laws, are becoming, or have become, obsolete.” Explain and illustrate this statement.

HONOR ENGLISH.

JULIUS CÆSAR.

Examiner—T. C. L. ARMSTRONG, M.A., LL.B.

NOTE.—Candidates for Scholarships will write on the first six questions; other candidates may substitute the seventh or the eighth for the third.

1. “Human greatness, according to Shakespeare, is an enlargement of some one faculty at the expense of a relative littleness in the rest of the man.”

Discuss this statement with reference to Cæsar and Brutus, tracing the relation of the weakness of each to the qualities that made him great. Answer in detail as to the character of each.

2. Compare Antony and Cassius as rival conspirators, showing the strong points and the defects in the character of each; show also how the poet has justified dramatically the success of Antony.

3. Discuss how far the characters of Portia and Calphurnia are a reflex of the characters of Brutus and Cæsar respectively, quoting or referring to passages in the play in your answer.

4. Write a critical note on each of the following:

(1) No place will please me so, no mean of death, As here by Cæsar and by you cut off.

(2) O masters! if I were disposed to stir Your hearts and minds to mutiny and rage.

(3) In such a time as this it is not meet That every nice offence should bear his comment.

(4) The posture of your blows are yet unknown, But for your words they rob the Hybla bees And leave them honeyless.

Ant. Not stingless too.

Cas. O yes, and soundless too.

(5) His life was gentle and the elements So mixed in him, that Nature might stand up And say to all the world, this was a man.

5. Since Cassius first did whet me against Cæsar I have not slept.

Between the acting of a dreadful thing

And the first motion, all the interim is

Like a phantasma, or a hideous dream!

The genius and the mortal instruments

Are then in council: and the state of a man,

Like to a little kingdom, suffers then

The nature of an insurrection.

(a) Account for the metre of the second line.

(b) State fully the poet's meaning in the last four lines.

(c) Quote or give the substance of the “insurrection” in Brutus' mind, shown in the previous soliloquy beginning, “It must be by his death,” and point out what you think defective in his reasoning there.

6. Cas. I think we are too bold upon your rest: Good-morrow, Brutus; do we trouble you?

Bru. I have been up this hour; awake, all night.

Know I these men that come along with you?

Cas. Yes, every man of them; and no man here

But honors you; and every one doth wish

You had but that opinion of yourself

Which every noble Roman bears of you.

Bru. They are all welcome.

What watchful cares do interpose themselves

Between your eyes and night?

Cas. Shall I entreat a word?

Dec. Here lies the east: doth not the day

break here?

Casca. No.

Cin. O, pardon, sir, it doth: and yon grey

lines

That fret the clouds are messengers of day.

Casca. You shall confess that you are both

deceived

Here, as I point my sword, the sun arises:

Which is a great way growing on the south,

Weighing the youthful season of the year.

Bru. Give me your hands all over, one by

one.

Cas. And let us swear our resolution.

Bru. No, not an oath: if not the face of

men,

The sufferance of our souls, the time's abuse—

If these be motives weak, break off betimes,

And every man hence to his idle bed;

So let high-sighted tyranny range on,

Till each man drop by lottery. But if these,

As I am sure they do, bear fire enough

To kindle cowards, and to steel with valor

The melting spirits of women; then, country-

men,

What need we any spur but our own cause,

To prick us to redress? what other bond,

Than secret Romans, that have spoke the word,

And will not palter? and what other oath,

Than honesty to honesty engaged,

That this shall be, or we will fall for it?

Swear priests and cowards, and men cautelous,

Old feeble carrions, and such suffering souls

That welcome wrongs; unto bad causes swear

Such creatures as men doubt; but do not stain

The even virtue of our enterprise,

Nor the insuppressible metal of our spirits,

To think that, or our cause, or our performance,

Did need an oath; when every drop of blood,

That every Roman bears, and nobly bears,

Is guilty of a several bastardy,

If he do break the smallest particle

Of any promise that hath passed from him.

(a) What traits of character are shown in this passage by Brutus and Cassius respectively?

- (b) Criticise the dramatic propriety and force of the dialogue, lines 13 to 20.
- (c) Express, in your own words, the meaning of the portions in italics.
- (d) Criticise the figurative expressions in the passage.
- (e) Point out some of the qualities of the versification in the speech of Brutus here.

7. "Therefore, before they fell in hand with any other matter, they went into a little chamber together, and bade every man avoid and did shut the doors to them. Then they began to pour out their complaints one to the other and grew hot and loud, earnestly accusing one another, and at length fell both a weeping."—*Plutarch*.

Give the substance of Shakespeare's elaboration of this statement, bringing out the characteristics shown respectively by Brutus and Cassius in the interview. Quote any one of the longer speeches, and point out the skill shown by the poet in selection and characterization.

8. Contrast the oratory of Antony and Brutus and point out the peculiarities of Antony's great speech in the market-place.

ARTS.—EUCLID.—HONORS.

Examiners: { J. H. MCGEARY, M.A.
W. H. BALLARD, M.A.

NOTE.—Candidates for Scholarships are required to take the whole paper, but other candidates are to write on only eight of the eleven questions.

1. The diagonals of a parallelogram bisect it.
 - (a) Enunciate and prove the converse.
 - (b) The lines joining the middle points of opposite sides of any quadrilateral and the middle points of diagonals bisect one another.
2. Enunciate and prove the proposition corresponding to the algebraic statement $(a+b)^2 + (a-b)^2 = 2a^2 + 2b^2$.
 - (a) If two chords of a circle cut at right angles, the sum of the squares on the segments is equal to the squares on the diameter.
3. The opposite angles of any quadrilateral figure inscribed in a circle are together equal to two right angles.
 - (a) If the angles formed by producing the opposite sides of a quadrilateral in a circle to meet are bisected, the bisectors are at right angles.
 - (b) The lines bisecting an angle of a quadrilateral in a circle and the opposite external angle meet on the circumference of the circle.
4. If a straight line touch a circle, and from the point of contact a straight line be drawn cutting the circle; the angles which this line makes with the line touching the circle shall be equal to the angles which are in the alternate segments of the circle.
 - (a) If two circles intersect, and through a point of contact two lines are drawn cutting the circles again in four points, and the pair of points on each circle are joined; then the joining lines cut at a constant angle.
5. To describe an isosceles triangle having each of the angles at the base double of the third angle.
 - (a) Through three given points draw three straight lines, one through each, to form a triangle equal in all respects to a given triangle.
6. To inscribe a circle in a given equilateral and equiangular polygon of any number of sides.
 - (a) Discuss fully the following propositions: Every equiangular figure inscribed in a circle is equilateral, and every equilateral figure inscribed in a circle is equiangular.
7. Define ratio, and contrast the meanings of the words magnitude, quantity, number, as used in Euclid's definitions. When can two magnitudes be said to have a ratio to each other?
 - (a) Give Euclid's definition of proportion, and apply it to show that in equal circles the areas of sectors are one to the other as the arcs on which they stand.
 - (b) If a straight line be drawn parallel to one of the sides of a triangle, it shall cut the other sides or these produced proportionally and conversely.
 - (a) ABC is a triangle. BE and CF are drawn perpendicularly upon any straight line AEF. G is the middle point of BC. Prove GE = GF.

9. To divide a straight line similarly to a given divided straight line.

(a) Construct a triangle having given the base, the angle opposite the base and the ratio of the two remaining sides to each other.

10. The sides about the equal angles of equiangular triangles are proportionals; and those which are opposite the equal angles are homologous sides.

(a) ABC is a triangle inscribed in a circle and AD, AE are drawn parallel to tangents at B and C to meet the base at D and E. Shew that the ratio of BD to CE is the duplicate of the ratio of AB to AC.

11. If an angle of a triangle be bisected by a straight line which likewise meets the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the segments of the base, together with the square on the straight line which bisects the angle.

(a) If the vertical angle A of a triangle ABC be bisected internally and externally by lines AD and AE which meet the base in points D and E; shew that the rectangles BD × CD, BA × CA, BE × CE are in arithmetical progression if the difference of the base angles be a right angle.

ALGEBRA.

HONORS.

Examiners: { W. H. BALLARD, M.A.
J. H. MCGEARY, M.A.

NOTE.—only ten questions are to be attempted, except in the case of candidates for Scholarships who are required to take all the questions.

1. To insert a number of Geometric Means between two given terms, Sum to infinity the series $1 + (1+c)r + (1+c+c^2)r^2 + \text{etc.}$ c and c r being each less than unity.
2. Sum to n terms $1 + 3r + 5r^2 + 7r^3 + \dots$ Form the series whose mth term is (m-1)(m+1)(2m-1) and sum it to n terms.
3. The expression $ax^2 + bx + c$ is divisible by $x - m$ only when m is a root of the equation $ax^2 + bx + c = 0$. Find the limits of the values of x for which the expression $x^2 + px + q$ may be negative. State the proposition of which this is a particular case.
4. Find the effect of adding the same quantity to both terms of a ratio. Employ your results to compare the values of the fractions $\frac{397}{483}$ and $\frac{433}{519}$; $\frac{3731}{4568}$ and $\frac{3798}{4628}$; $\frac{796}{799}$ and $\frac{799}{804}$
5. Find the number of permutations of n things taken r at a time. Find the value of r for which this number is greatest.
6. In how many ways can a regiment of 500 men be divided into 10 companies, each containing 50 men, (1) when the companies are not distinguished from one another, (2) when they are distinguished?
7. Prove the Binomial Theorem when the index is a positive integer. If ar be the co-efficient of x^r in the expansion of $(1+x)^n$ and c^r be the co-efficient of x^r in the expansion of $(1+x)^{2n}$, Shew that, when n is an even number, $(c_0^2 + c_2^2 + c_4^2 + \dots) - (c_1^2 + c_3^2 + c_5^2 + \dots) = (a_1^2 + a_2^2 + a_3^2 + \dots)$
8. Discuss the form of the general term in the expansion of $(1 \pm x)^n$, where n may be positive or negative, an integer or a fraction (proper or improper).
9. In the expansion of $(1-x)^n$, (m and n being positive integers) the signs of the terms are alternately + and - until the (p+2)th term is reached, after which the signs are all + or all - according as p is odd or even, where p is the greatest integer in $\frac{m}{n}$. What objection, if any, would there be to saying that the terms ultimately have the same sign as the pth term?
10. Obtain all the roots of the equation $x^2 - 8 = \sqrt{x^2 + 36x + 84}$.

Which of these roots will satisfy the equation? Why not the others? Is there an equation which all these roots will satisfy. Is it necessary that any of the roots obtained in the solution of an equation should satisfy that equation?

11. Solve the equations

(1) $xy + yz = b^2 - y^2$
 $yz + xz = c^2 - z^2$
 $zx + xy = a^2 - x^2$
(2) $z^2 + x^2 = a^2(a^2 - 2y^2)$
 $y^2 = a^2 - x^2 = c^2 - z^2$

12. Find the sum of the products of the first n natural numbers taken two at a time, and shew that it is the same as the sum to n-1 terms of the series

$$1 \cdot 2^2 + 2 \cdot 3^2 + 3 \cdot 4^2 + \dots$$

13. A train, in consequence of meeting with an accident, is obliged to diminish its speed in the ratio m : n; had the accident occurred a miles further on, the train would have reached its destination c minutes sooner than it did. Find the difference between the times of running a mile before and after the accident, also find the rate of the train in miles per hour before the accident occurred.

ARTS.—TRIGONOMETRY.—HONORS.

Examiners: { J. H. MCGEARY, M.A.
W. H. BALLARD, M.A.

NOTE.—Candidates for Scholarships are required to take the whole paper, but other candidates are to write on only nine of the eleven questions.

1. If one angle of a triangle be 85 grades and another 67° 30', find the circular measure of the third.

(a) If the unit of angular measurement be $\frac{5}{\pi}$ degrees and the linear unit 2 feet, what number expresses the length of an arc of a circle of radius 6 which subtends an angle 6 at the centre?

2. Define the tangent and secant of an angle, and prove that $\sec(2n\pi \pm A) = \sec A$ for all integral values of n both positive and negative.

Prove
(1) $\sec^2 A = 1 + \tan^2 A$.
(2) $(\tan A + \sec B)^2 - (\tan B - \sec A)^2 = 2 \sec A \cdot \sec B (\sin A + \sin B)$

3. Prove by a geometrical construction that $\sin(A+B) = \sin A \cos B + \cos A \sin B$

From this formula deduce the formulæ:

(1) $\cos 2A = 2\cos^2 A - 1$
(2) $\sin A + \sin B = 2 \sin \frac{A+B}{2} \cos \frac{A-B}{2}$

4. Prove (1) $\sin 3A = 3\sin A - 4\sin^3 A$

(2) $\sin^{-1} \frac{3}{5} + \tan^{-1} \frac{5}{12} = \cos^{-1} \frac{133}{65}$

(3) $2 \sin \frac{A}{2} = \pm \sqrt{1 + \sin A} \pm \sqrt{1 - \sin A}$

In the last formula explain the ambiguity of sign and shew what signs must be taken if A lies between 540° and 630°.

Shew by a geometrical construction that having given sin A there are four values for $\sin \frac{A}{2}$

5. Find the general solution of the equation $\sec A + 4\sin A + 2\cos A = 0$.

(a) If $\frac{3 \sin(\theta + A) + 2 \cos(\theta + A)}{\sin \theta + 5 \cos \theta}$ be constant for all values of θ , find the value of A.

6. Define the logarithm of a number and mention the principal advantages of the common system of logarithms.

Prove (1) $\log ab = \log a + \log b$.
(2) $\log_a b \times \log_b a = \log_e a = \log_e b$.
Having given the logarithms of 2 and 3 to the base 10 calculate $\log 75$, $\log (0.000432)^{\frac{1}{4}}$, $\log_e 9$.

7. If any triangle prove
(1) $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$. (2) $\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$

(3) $\frac{\sin \frac{A}{2}}{a(b+c-a)} = \frac{\sin \frac{B}{2}}{b(a+c)-b^2} = \frac{\sin \frac{C}{2}}{c(a+b)-c^2}$

8. In any triangle if Δ , R, r, be respectfully the area and radii of the circumscribed and inscribed circles, prove

(Continued on page 96.)

BUSINESS NOTICES.

We direct attention to the announcement of the merits of the "Concise Imperial Dictionary." It is our intention to handle this Dictionary in connection with the JOURNAL, and we offer it in the best binding, and the EDUCATIONAL JOURNAL for one year, both for \$5.50, plus 14 cents for postage. Subscribers who are paid in advance may deduct the amount they paid for one year, send the balance, and have the book at once. This gives the party the JOURNAL for \$1.00.

TEACHERS' INSTITUTE.

Parry Sound, at Parry Sound, July 2nd and 3rd.
Parry Sound, at Burk's Falls, July 5th and 6th.

Mr. W. Houston, M.A., Parliamentary Librarian, will be present, and will deliver a lecture on the evening of the first day.

Editorial.

TORONTO, JULY 1, 1889.

PUBLIC VS. SEPARATE SCHOOLS.

CONSIDERABLE discussion has recently been called forth in the Toronto press, by the publication of the fact that one of the questions which every parent or guardian, applying for the admission of a child to the Public schools, is required to answer, is, "Are you a Protestant?" On the face of it this question looks very like a faith-test, and some members of the School Board rather strengthened that view of the case, by unsatisfactory answers when questioned in regard to the matter by reporters. Complaint, it was said, was made by Protestants who were unable to get admission for their children, while the children of Catholics were, they alleged, being admitted.

Inspector Hughes has written an explanatory letter, denying that any religious test is now, or ever has been, applied for admission to the city schools. His explanation of the matter is simply this:—

"Every child who presents himself is freely admitted if his parent or guardian is a supporter of Public schools. The only distinction made between Protestants and Roman Catholics is this: The children of Protestants are admitted without a certificate from the City Clerk, and the children of Roman Catholics require a certificate from that officer, stating that their parents or guardians are rated as Public school supporters.

"We ask no proof from Protestants that they support Public schools, because they cannot legally do otherwise, so that all who state that they are Protestants have their children admitted without further question. Roman Catholics, on the other hand, have to bring a certificate from the City Clerk. The word 'Protestant,' in the certificate to be signed by parents on making application for the admission of their children, was inserted solely for the purpose of separating all applicants for admission into two classes, viz., those who can and those who cannot support Separate schools. Further evidence is not necessary in the one case, but it is essential to have it in the other case.

"The question has been asked, 'Why not ask the parent to certify that he is a supporter of Public schools?' This form might fairly be used if no Roman Catholic would be made a supporter of Separate schools without his knowledge or consent. Unfortunately, however, many Roman Catholics are rated as Separate school supporters, entirely without their knowledge of

the fact, and therefore they cannot give a satisfactory certificate themselves."

Two questions of considerable interest are raised by this statement. Is it true that "many Roman Catholics are rated as Separate school supporters entirely without their knowledge of the fact?" By whom or by what authority are they so rated? If such things occur, there must surely either be something wrong with the law, or with the mode of executing the law by civic officials. The matter will no doubt be inquired into. It cannot be the intention of either the Legislature or the Education Department that any advantage should be given to the Separate schools, or any undue pressure brought to bear upon Catholics to support those schools. If there is ambiguity in the law, or misunderstanding of the law on the part of the city officials, no time should be lost in rectifying the error. The Public school supporter and the Separate school supporter would have an equal right to complain of any arrangement which interfered with the free choice of the latter, and made him, by virtue of his being a Catholic, a Separate school supporter in spite of himself.

In so saying we assume an antecedent principle of much importance. By the Constitution and the laws of Ontario the members of the Catholic Church have guaranteed to them certain privileges in connection with Separate schools. These privileges are, if we understand the matter, the right of maintaining these schools, of receiving a certain *pro rata* allowance from the Province in aid of them, and also of receiving for their support the school taxes of all Roman Catholic citizens who shall signify in due form their wish to become supporters of these schools. But we have never supposed that it was the meaning or intention of the law that the Separate schools should be put on a par with the Public schools, in such a sense that every Catholic would be assumed and expected to be a Separate school supporter, just as every other citizen is assumed and expected to be a Public school supporter. It makes an important difference whether the mere fact that one is a Catholic is to be taken as *prima facie* proof that he is a supporter of the Separate schools, or whether Catholics, like all other citizens, are legally presumed to be supporters of the Public schools, unless and until they signify, in due form, their wish to be rated as Separate school supporters. If there is the slightest doubt or ambiguity on this point, one of the first duties of the Legislature, at its next session, should be to remove all doubt and settle the question on the basis of right and justice.

THE DEADLY CIGARETTE.

TEACHERS, have you reason to suspect that any of your boys have formed, or are in danger of forming, the habit of cigarette smoking? If so, read to them the following from high authorities:—Sir Morell Mackenzie, addressing particularly those who have to speak much, while condemning "tobacco, alcohol, and fiery condi-

ments of all kinds," is specially emphatic against the use of cigarettes. He describes the effect of cigarette smoking as "cumulative," and warns smokers that "the slight but constant absorption of tobacco juice and smoke makes the practice far more noxious in the long run than any kind of smoking." As in the experience of the tippler, the smoker of cigarettes gradually gets his nervous system into a state of chronic inflammation. Then there are the local effects of the practice. "The white spots on the tongue and inside the cheeks, known as 'smokers' patches,' are believed by some doctors with special experience to be more common in devotees of the cigarettes than in any other smokers; this unhealthy condition of the mouth may not only make speaking troublesome, or even painful, but it is now proved to be a predisposing cause of cancer."

Here is what Professor Laflin says on the same subject:—

"Tobacco in any form is bad, but in a cigarette there are five poisons, while in a good cigar there is only one. In the cigarette there is the oil in the paper, the oil of nicotine, saltpetre to preserve the tobacco, opium to make it mild, and the oil in the flavoring. The trouble with the cigarette is the inhaling of the smoke. If you blow a mouthful of smoke through a handkerchief, it will leave a brown stain. Inhale the smoke, and blow it through the nostril, and no stain will appear. The oil or poison remains in the head or body. Cigarettes create a thirst for strong drink; and there should be anti-cigarette societies, as there are temperance societies."

There are for the reflective mind few sadder sights than the one so often met with in the streets of our cities, of boys who have scarcely reached their teens, swaggering along the streets puffing their deadly cigarettes. The future of such youths is dark, almost hopeless. It seems utterly unreasonable to expect any noble achievement or true success in life from a boy who has once given himself over to be the slave of this habit. As a matter of fact one does not expect it. He feels that here is a life ruined at the very outset. The bud is blighted before it is unfolded. Neither flower nor fruit of noble living is to be expected. The schools should do their utmost to root out the cigarette.

THE MORAL ASPECTS OF SCIENCE TEACHING.

RUSKIN is nothing if not emphatic. This is the way he once put his views of the influence of modern scientific teachings in education:—"I know of nothing that has been taught the youth of our time except that their fathers were apes and their mothers were winks; that the world began in accident and will end in darkness; that honor is a folly, ambition a virtue, charity a vice, poverty a crime, and rascality the means of all wealth and the sum of all wisdom." The reference is, we suppose, not so much to the work of the Public schools—for few of these, we fancy, have yet introduced into their courses these modern discoveries (?) in science and morals—as to that of some of the higher departments of instruction. But the thoughts sug-

gested are of the very first importance, and worthy to be deeply pondered by every one who has to do, in any way, whether as teacher, writer, or purveyor of literature, with the mental and moral training of the youth of our day. The formation of high moral standards, of a noble manhood and womanhood, is of infinitely greater importance than any proficiency in scientific facts or theories.

Looked at simply from the point of view of the effect in the formation of character, can any one doubt whether the old or the new ideas in science and ethics are the better? The youth who is taught from his earliest years to believe in God and a future life, is brought continually under the influence of the strongest conceivable, the strongest possible, motive to seek purity of heart and life. If the ever-present conviction "Thou God seest me," inwrought into the deepest fibres of mind and conscience, cannot overcome temptations and tendencies to depravity, nothing can. Beside the force of such a notion as this, all considerations of mere caution and propriety and utility, become utterly futile, insignificant, puerile. And, it must be confessed that, while it is far from universally true, there is too much truth in the assumption that the difference between the old-fashioned and the modern systems of instruction, bestrides this distance. All merely materialistic and utilitarian doctrines of science are of the earth earthy, and tend inevitably to shut up the sight within the narrow horizon of this poor life. The good old teachings were redolent of Heaven and immortality.

"But, it may be asked, is not this begging the question? The modern philosopher will cry 'Yes.' Instead of teaching the young to search after truth and truth only, you are trying to scare them from the path of independent investigation. Truth is the great object of science, the highest end of all research, and in order to pursue the truth with single eye, we must put aside all preconceived notions and creeds." To this it may be replied that the scientist is the man who begs the question when he assumes that we have no road to truth but through the outer senses; no source or criterion of truth but outward observation and logical inference. The very fact that some of the deductions of certain modern scientists contravene both the immortal traditions of the race, and the highest instincts, or intuitions, of the soul, is their scientific condemnation; as the other fact that they demonstrably tend in the direction indicated by Ruskin, is their ethical condemnation.

Do we then object to scientific teaching and investigation in the school and college? Far from it. Truth rejoices in the light. Truth fears no inquiry, no research, no discovery, no facts. "Search after truth," is the only highway of sound education. The more unprejudiced and fearless such inquiry can be made the better. The danger is not in the research, in the enthusiastic pursuit of facts, but in the hasty generalization of teachers who rush to unwarranted

conclusions, before they have seen more than a single aspect of the many-sided temple of truth even as it is revealed in nature.

These thoughts are in part suggested, or rather recalled, by the report of a discussion which followed the reading of an able paper on the place of Science in the Schools, at one of the teachers' conventions. We have before expressed our opinion that our Public schools are seriously deficient in respect to the provision made for science teaching. Rightly pursued, the study of Natural History, as it is found in field and wood, in plant and flower, in insect and animal life, may be made the most improving, as it is the most delightful of educational exercises. Time should be given to it in every school. Nature points directly to Nature's God, and there is no fear that children, if rightly guided, or even left to themselves, will fail to read the lesson aright. It is only one-eyed modern philosophers who mistake classification for explanation, unvarying antecedents for real cause, the *how* of natural phenomena for the *why*, the *whence* and the *wherefore*.

Contributors' Department.

NORTH-WEST EDUCATION.

BY JOHN M'LEAN.

NO. 2.

So soon as the Board of Education entered upon its duties measures were adopted to secure the greatest efficiency possible amongst teachers and scholars. The Government was very liberal in its grant for educational purposes, no doubt induced to be so, by the arguments of extent and poverty, the vast extent of territory and the poverty of the enterprising settlers, who are ultimately to become the bone and sinew of these western districts. The Board of Education is composed of gentlemen of university training, who have lived for several years in the country, becoming thoroughly acquainted with the needs and wishes of the settlers and their families, and having strong faith in the speedy development and great prosperity of the provisional districts of the Territories.

Three Roman Catholics and five Protestants constitute the Board, and very harmoniously do the members work together, striving in all things, to act intelligently and justly in the interests of the people, and the cause of true education.

Twice a year or oftener the Board meets at Regina, to transact business. Inspectors and Examiners are appointed by the Board to inspect the schools and examine teachers or candidates for teachers' certificates. The Inspectors visit and inspect the schools twice a year, and receive ten dollars per visit, and a teachers' examination is held annually in August. Bishop Pinkham, of Calgary, is Chairman, and James Brown, Esq., the Secretary of the Board.

The work done by the members of the Educational Board has given satisfaction generally to the people and the teachers. On some matters there have existed differences of opinion, and the action of these gentlemen has been criticised, still there has always been an earnest endeavor to organize and develop a system of education, suitable to the wants of the country, and they have in a measure succeeded. Mistakes will be made, inefficiency will become evident and the plans enunciated by the strongest intellect will sometimes miscarry, yet we hope to see

a system based upon the best of all countries, which will become our glory, and the admiration of the older provinces in our Dominion. There is a deep, widespread and growing interest in educational matters in the country, and an enterprising spirit has taken hold of the people, so as to make them keenly alive to all that concerns the training of the youth. The progress made in the organizing of school districts and the erection of buildings has been so rapid, and the advancement of the pupils in their studies has been so satisfactory, that arrangements are now being made for the establishment of a High school branch or department in connection with some of the Public schools having a sufficient number of qualified scholars to attend, and these two departments will be constituted a "Union School." An examination will be held this month (June) to ascertain the number qualified to enter this High School department, after which this system of higher education will be more thoroughly organized, and this new departure will prove to be an incentive to greater things.

It is not wise to make predictions in this age of contention, but we have strong faith in the ultimate success of our school system. As the work increases there will come the necessity for reconstruction, the adaptation of our methods to the enlarged sphere, and the devising of broader schemes, or else separation into Provinces each having its own school system and each Provincial Board with its own ideal as to what that school system should be. We will not, however, speak of these things, but strive for the present to learn from that which exists.

BLOOD RESERVE, Alberta.

Book Reviews, Notices, Etc.

The Reading Circle Library, No. 10. Ear and Voice Training by Means of Elementary Sounds of Language. By N. A. Calkins. New York and Chicago: E. L. Kellogg & Co. 50 cents.

This book will be helpful to young, enquiring teachers, because it tells them what to do in order to train children to hear and speak well. Among the subjects discussed are, "Speech Training," "Comparing the Sounds of the Letters," "Vowel Sounds Grouped," "Breath and Voice Sounds Grouped," "Suggestions for Removing Difficulties of Utterance and Impediments of Speech." In addition to these and cognate subjects the author has added, "Characteristics of the Course of Instruction for Ear and Voice Training."

Cicero's Brutus. Edited by Martin Kellogg, Professor of Latin in the University of California. Ginn & Company, Boston. This book is one of the *College Series of Latin Authors*, edited under the supervision of Clement L. Smith and Tracy Peck.

Professor Kellogg has edited this work especially for early college reading. The introduction touches upon points of interest to those to whom Cicero is no stranger, and contains a full conspectus. The notes deal with the subject-matter, historical relations, and diction of the dialogue rather than with the commonplaces of grammar. Parallel passages are freely given, especially from Cicero's other rhetorical works and from Quintilian.

Syllabus of Lectures in Anatomy and Physiology. By L. B. Stowell, A.M., Ph.D., State Normal and Training School, Cortland, N.Y. C. W. Bardeen, Publisher, Syracuse, N.Y.

This Syllabus, as described by the author, is not a text or a work of reference; it is rather a guide to be used in connection with dissections, experiments, models, charts, diagrams, lantern-slides, and the microscope. Students are expected to make detailed drawings of structures and to describe experiments; for this purpose alternate pages are blank. It can scarcely fail to prove a very useful manual for the purpose.

Mathematics.

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

CORRESPONDENCE.

In view of the large number of letters on hand, we defer the article on Modern Geometry promised in the May number. In the meantime we gladly refer our readers to "Modern Synthetic Geometry," written by PROF. N. F. DUPUIS, of Kingston, published by MacMillan & Co., only two or three months since. We find that this excellent little volume incorporates almost every idea of the advanced reformers of geometry. We heartily commend it to the notice of the University Senate in its revision of the curriculum, and to the Education Department, as a better text-book than any now on the list. To teachers who rebel against antiquated methods, this book, or Reynold's "Modern Methods in Elementary Geometry," will be found highly satisfactory. With the latter book we can testify from actual experiment that a pupil of average ability can acquire all the practically useful parts of plane geometry in one school year, and at the end have a better command over original problems than would result from two years' study of dear old Euclid. Prof. Dupuis has kindly granted permission to the EDITOR to make use of any portion of his book in this Department. We propose to give our readers the benefit of this courtesy during the coming months.

W. J. M., Fort MacLeod, Alberta, N.W.T., writes as follows:—"Have modern mathematicians discovered a better or more logical way of proving propositions 29 and 32 of Euclid's First Book, or the properties of parallel lines in general, than that given in the text-books of Potts and H. Smith, and where are the improved methods, if any, to be found? I cannot see anything self-evident in the axiom employed by Euclid in proposition 29."

REPLY.—Yes; the modern methods are based on the principle of symmetry, and do not involve anything not self-evident. The two books just mentioned, or the American edition of "Chauvenet's Geometry," edited by Prof. Byerly, of Harvard, supply the information. Wentworth's "New Plane Geometry," 85 cents, Ginn & Co., Boston, and his "Exercise Manual," are also good books. In mentioning these books, let it be clearly understood that they stand on their merits and that we have nothing whatever to do with the sale of them, either more or less.

W. J. M., also asks:—"How can beginners in arithmetic be made to understand that such questions as the following may be solved by taking either of the two numbers as multiplicand:—'What will 7 lbs. of sugar cost at 8 cts. per lb.'"

REPLY.—One pound costs 8 cents, two pounds will cost twice as much, or 8 cents x 2; three pounds will cost thrice as much, or 8 cents x 3, and so on; therefore, 7 pounds will cost 8 cents x 7. This is the ordinary method of solution. But the inverse method is equally logical, thus:—If the price were one cent per pound, 7 pounds would cost 7 times one cent, or 7c; if the price were 2c per pound, the 7 pounds would cost 7c x 2, and so on; therefore, when the price is 8c per pound, the cost will be 7c x 8. Subsidiary to this, it would be well to make the pupil lay out 7 rows of dots, 8 dots in each row, and also rearrange the same dots—beans, pegs, matches, etc.—in 8 rows containing 7 dots, etc., in each row. Strips of pasteboard cut out one inch in width, and then marked off in square inches, are extremely handy, cheap and useful for teaching the practical solution of a vast variety of problems on the simple rules. The EDITOR once carried two pupils, by this method, over the simple rules and fractions with very great success. If the strips are made ten inches long they are most convenient for use. All young pupils are naturally materialists, and teachers would do well to accept this fundamental fact once for all, and apply it to the first stage of every subject. Abstractions come later, but the necessary inductions from experience must precede, unless we wish to deal with intangible shadows.

STUDENT inquires:—"How should this example be reduced:— $4\frac{1}{2} - (3\frac{1}{2} + \frac{1}{2}) + 3\frac{1}{2} + \frac{1}{2}$."

REPLY.— $(7 + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}) - (7 + \frac{1}{2} + \frac{1}{2})$. Cancel integers.

$\therefore 1 + (\frac{1}{2} + \frac{1}{2}) - (\frac{1}{2} + \frac{1}{2})$
or $1 + 3(\frac{1}{2} + \frac{1}{2}) - (\frac{1}{2} + \frac{1}{2})$
 $\therefore 1 + \frac{3}{2} - (\frac{1}{2} + \frac{1}{2})$. Cancel $\frac{1}{2}$, and $\frac{1}{2}$, respectively.
 $\therefore \frac{3}{2} + \frac{1}{2}$ remains = $2\frac{1}{2}$.

The following acknowledgements are due:—MR. G. McCUBBIN, Shakespeare, solved Nos. 47, 48, 49 and 50 of the April issue; W. M., Fort MacLeod, sends good solutions to 44, 45, 47, 48 and 49; Public School Teacher, Napanee, sends a problem for solution; W. G. sends one; W. H. B., Bayfield, sends four; C. A. S.

Ch., St. James, Man., sends a good solution to No. 44; T. C., Midlothian, Ont., sends ten problems, and W. P., Chatham, two more. These questions will receive attention as soon as we have space. As we have given so little attention to I Class work, we devote the remainder of this issue to it, in deference to the wishes of a large number of friends who responded to the query at the close of the April issue.

The following solutions are supplied by MR. J. D. DIXON, B.A., Mathematical Master of Seaforth Collegiate Institute. The questions are those set for honors in Algebra in the first year at Toronto University, 1888. All text-book work is omitted:—

Sum to n terms the series:—

(A) $S = 1^3 + 3^3 + 5^3 + \dots + (2n-1)^3$; the n th term = $8n^3 - 12n^2 + 6n - 1$.

$\therefore S = 8(1^3 + 2^3 + \dots + n^3) - 12(1^2 + 2^2 + \dots + n^2) + 6(1 + 2 + \dots + n) - n$
 $= 8 \left\{ \frac{n(n+1)}{2} \right\}^2 - \frac{12n(n+1)(2n+1)}{6} + \frac{6n(n+1)}{2} - n$
 $= \text{etc.}$

(B) $S = 1 \cdot 2 \cdot 1^2 + 3 \cdot 4 \cdot 2^2 + 5 \cdot 6 \cdot 3^2 + 7 \cdot 8 \cdot 4^2 + \dots$

The n th term = $(2n-1)(2n) \cdot n^2 = 4n^4 - 2n^3$
 $\therefore S = 4(1^4 + 2^4 + 3^4 + \dots + n^4) - 2(1^3 + 2^3 + 3^3 + \dots + n^3) = \text{etc.}$

(C) The series whose n th term = $\frac{(n+1)^2 - n - 1}{n \times 3} = \frac{n^2 + 2n + 1 - n - 1}{n(n+1)(n+2)(n+3)}$

$= \frac{1}{(n+2)(n+3)} + \frac{1}{(n+1)(n+2)(n+3)}$
To sum the series whose n th term $U_n = \frac{1}{n(n+1)(n+2)(n+3)}$

let $V_n = \frac{1}{(n+1)(n+2)(n+3)}$
 $\therefore V_n - V_{n-1} = \frac{1}{n(n+1)(n+2)}$

$\therefore V_n - V_{n-1} - V_{n-2} = -3U_n$
 $V_n - 1 - V_{n-2} = -3U_n - 1$
 $V_n - 2 - V_{n-3} = -3U_n - 2$
 \dots
 $V_1 - V_0 = -3U_1$

$\therefore V_n - V_0 = -3(U_1 + U_2 + \dots + U_n)$
 $\therefore U_1 + U_2 + \dots + U_n = \frac{V_0 - V_n}{3} = \frac{1}{3} \left\{ \frac{1}{1 \cdot 2 \cdot 3} - \frac{1}{(n+1)(n+2)(n+3)} \right\}$

$\therefore S = \frac{1}{3} \left\{ \frac{1}{1 \cdot 2 \cdot 3} - \frac{1}{(n+1)(n+2)(n+3)} \right\} + \frac{1}{3} \left\{ \frac{1}{2 \cdot 3} - \frac{1}{(n+2)(n+3)} \right\} + \dots + \frac{1}{3} \left\{ \frac{1}{n-1} - \frac{1}{n+1} \right\}$

4. To find the expression from which $1 + 3x + 7x^2 + 3x + x$ is derivable, and to find the general term. let the scale of relation be $1 - px - qx^2$.

Then $3p + q = 7$, and $7p + 3q = 3$
 $\therefore p = 9; q = -20$

\therefore The scale of relation is $1 - 9x + 20x^2 = (1-4x)(1-5x)$

\therefore The series is derived from $\frac{1-6x}{(1-4x)(1-5x)}$ (See Todhunter Art. 656)

To find the general term. Let $\frac{1-6x}{(1-4x)(1-5x)} = \frac{A}{1-4x} + \frac{B}{1-5x}$

$\therefore 1-6x = A(1-5x) + B(1-4x)$
To find A, put $1-4x = 0$, or $x = \frac{1}{4}$; $\therefore A = 2$, similarly $B = -1$

$\therefore \frac{1-6x}{(1-4x)(1-5x)} = \frac{2}{1-4x} - \frac{1}{1-5x}$
 $= 2(1-4x)^{-1} - (1-5x)^{-1}$
 $= 2 \{ 1 + (4x) + (4x)^2 + (4x)^3 + \dots - (1x)^n + \dots \}$

\therefore The n th term = $(2 \cdot 4)^n - 5^n x^n$

To find the convergents to the roots of the eqn. $x^2 - 3x + 1 = 0$

The roots are $\frac{3+\sqrt{5}}{2}$ and $\frac{3-\sqrt{5}}{2}$

(1) $\frac{3+\sqrt{5}}{2} = 2 + \frac{\sqrt{5}-1}{2} = 2 + \frac{1}{\frac{\sqrt{5}-1}{2}} = 2 + \frac{1}{\sqrt{5+1}}$

$\frac{\sqrt{5+1}}{2} = 1 + \frac{\sqrt{5}-1}{2} = 1 + \frac{1}{\frac{\sqrt{5}-1}{2}}$

$\therefore \frac{3+\sqrt{5}}{2} = 2 + \frac{1}{1 + \frac{1}{1 + \dots}}$ and the convergents are $\frac{2}{1}, \frac{3}{2}, \frac{5}{3}, \frac{8}{5}, \frac{13}{8}, \dots$

(2) $\frac{3-\sqrt{5}}{2} = -\frac{1}{\frac{3+\sqrt{5}}{2}}$

But $\frac{3+\sqrt{5}}{2} = 2 + \frac{1}{1 + \frac{1}{1 + \dots}}$

$\therefore \frac{3-\sqrt{5}}{2} = \frac{1}{2 + \frac{1}{1 + \frac{1}{1 + \dots}}}$ and the convergents are $\frac{1}{2}, \frac{1}{3}, \frac{2}{5}, \frac{3}{8}, \frac{5}{13}, \dots$

(1) The series $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \dots + \frac{1}{n} + \dots$ is divergent and $\frac{(n+1)^2 - n^2}{n^2 + 1} > \frac{1}{n}$

If $n(2n+1) > n^2 + 1$
" $n^2 + n > 1$, which is true.

\therefore The series whose n th term is $\frac{(n+1)^2 - n^2}{n^2 + 1}$ is divergent.

(2) In the series $1 + \frac{1}{2} + \dots + \frac{1}{n}$, the ratio of the n th term to the $(n-1)$ th is $\frac{n-1}{n}$.

And $\frac{2n^2 + 3n + 1}{2n^2 + 5n - 3} > \frac{n-1}{n}$

If $2n^3 + 3n^2 + n > 2n^3 + 3n^2 - 8n + 3$
" $9n > 3$ which is true

\therefore The series in which the ratio of the n th term to the $(n-1)$ th is $\frac{2n^2 + 3n + 1}{2n^2 + 5n - 3}$ is divergent

If n be prime to show that, —
 $(12n-1) \cdot n^{n-1} \cdot n^{n-1}$ is divisible by n

$\text{Exp}^n = n^{n-1} \left\{ \left\{ 1 \cdot 2 \cdot 3 \cdot \dots \cdot (n-1)(n+1) \cdot \dots \cdot (2n-1) \right\}^{n-1} \cdot 1 \right\}$

Now $1 \cdot 2 \cdot \dots \cdot (n-1)(n+1) \cdot \dots \cdot (2n-1) = \left\{ (n-1)(n+1) \right\} \left\{ (n-2)(n+2) \right\} \dots \dots \dots \left\{ (n-n)(n-n) \right\} = (n^2-1^2)(n^2-2^2)(n^2-3^2) \dots \dots \dots$

$(n^2 - \frac{2}{n-1}) =$

Some multiple of n ; $P(n) + 1^2 \cdot 2^2 \cdot \dots \cdot \frac{2}{n-1}$;

$\left(\frac{n-1}{n} \right)$ is even) = $Pn + \left(\frac{n-1}{n} \right)^2$

But n is prime; $\therefore 1 + \left| \frac{n-1}{n} \right| = Q(n)$
 $\therefore \left(\frac{n-1}{n} \right)^2 = (Q(n) - 1)^2 = \frac{Q(n) + 1}{n}$

$\therefore P(n) + \left(\frac{n-1}{n} \right)^2 = P(n) + \frac{Q(n) + 1}{n} = K(n) + 1$

suppose.
 $\therefore \text{Exp}^n = n^{n-1} \left\{ (K(n) + 1) \frac{n-1}{n} \right\}$
 $= n^{n-1} \left\{ (K^1(n) + 1) \cdot 1 \right\} = n^{n-1} (K^1(n))$
 $= n \cdot n \cdot K^1$

\therefore Given expression is divisible by n^n

The limit of $\frac{\sin T}{T} = 1$ when $T = 0$ Bk. work

To deduce the limit of $m \sin \frac{\alpha}{m}$ when $m = \alpha$

$m \sin \frac{\alpha}{m} = m \cdot \frac{\alpha}{m} \cdot \sin \frac{\alpha}{m} = \alpha \left(\frac{\sin \frac{\alpha}{m}}{\frac{\alpha}{m}} \right)$

When $m = \alpha$ $\frac{\alpha}{m} = 1$; \therefore limit of $\sin \frac{\alpha}{m} = 1$

$\frac{\alpha}{m}$

∴ Limit of $m \sin \frac{\alpha}{m} = \alpha$ when m is indefinitely increased.

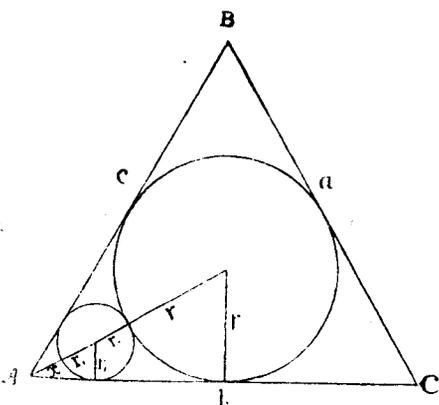
To find the limit, when T is indefinitely diminished, of $\frac{\text{Cosec}^2 a T \text{ vers } a T}{\text{Cosec}^2 b T \text{ vers } b T}$ i. e. of $\frac{1}{\sin^2 a} (1 - \cos a T)$

$$\frac{1}{\sin^2 a} (1 - \cos a T) \div \frac{1}{\sin^2 b} (1 - \cos b T) = \frac{\text{Co.}^2 \frac{bT}{2}}{\text{Co.}^2 \frac{aT}{2}} = \frac{\text{Co.}^2 \frac{bT}{2}}{\text{Co.}^2 \frac{aT}{2}}$$

$$1 - \frac{1}{2} \left(\frac{bT}{2}\right)^2 + \dots = 1 - \frac{1}{2} \left(\frac{aT}{2}\right)^2 + \dots$$

when T is indefinitely diminished.

9. Find the radius of the circle touching the inscribed circle and two sides of triangle.



From similar triangles.

$$\frac{r}{r + 2r_1 + x} = \frac{r_1}{r_1 + x} = \frac{r - r_1}{r + r_1} = \tan \frac{A}{2}$$

$$\frac{r_1}{r} = \frac{1 - \tan \frac{A}{2}}{1 + \tan \frac{A}{2}} = \frac{\cos A}{1 + \sin A}$$

$$\therefore r = \frac{r \cos A}{1 + \sin A}, \text{ where } r = \frac{S}{s}$$

10. (1) To find $(a + b\sqrt{-1})^{\frac{1}{n}}$

Let $a + b\sqrt{-1} = r(\cos T + z \sin T)$ where $z = \sqrt{-1}$

$$r \cos T = a, \quad r \sin T = b$$

$$\therefore r = \sqrt{a^2 + b^2}, \quad T = \tan^{-1} \frac{b}{a}$$

$$\therefore (a + b\sqrt{-1})^{\frac{1}{n}} = r^{\frac{1}{n}} (\cos T + z \sin T)^{\frac{1}{n}}$$

$$r^{\frac{1}{n}} \left\{ \cos \left(\frac{2\pi r + T}{n} \right) + z \sin \left(\frac{2\pi r + T}{n} \right) \right\}^{\frac{1}{n}}$$

$$r^{\frac{1}{n}} \left\{ \cos \frac{2\pi r + T}{n} + z \sin \frac{2\pi r + T}{n} \right\}^{\frac{1}{n}}$$

$$\text{where } r = \sqrt{a^2 + b^2}, \quad T = \tan^{-1} \frac{b}{a}$$

$$(2) \cos T \cos 2T + \cos 2T \cos 3T + \dots = \frac{1}{2} \{ (\cos 3T + \cos T) + (\cos 5T + \cos T) + \dots \}$$

$$\therefore S = \frac{1}{2} \{ (\cos 3T + \cos 5T + \dots) + n \cos T \}$$

$$(3) \text{ Let } S = c \sin T + c^2 \sin 2T + c^3 \sin 3T + \dots$$

$$C = c \cos T + c^2 \cos 2T + c^3 \cos 3T + \dots$$

$$\therefore C + zS = c(\cos T + z \sin T) + c^2(\cos 2T + z \sin 2T) + \dots$$

$$\text{where } z = \sqrt{-1}$$

$$\therefore C + zS = ce^{zT} + (ce^{zT})^2 + (ce^{zT})^3 + \dots = x + x^2 + x^3 + \dots \text{ where } x = ce^{zT}$$

$$= \frac{x(1-x^n)}{1-x} = \frac{ce^{zT}(1-c^n e^{znT})}{1-e^{zT}} \times \frac{1-e^{-zT}}{1-e^{-zT}}$$

$$= \frac{ce^{zT}(1-c^n e^{znT})}{1-e^{zT}} \cdot \frac{1-e^{-zT}}{1-e^{-zT}}$$

$$\frac{ce^{zT}(1-c^n e^{-znT})}{2-2 \cos T} \left(\frac{1-e^{-zT}}{1-e^{-zT}} \right) =$$

$$\frac{1}{2(1-\cos T)} \left\{ c(e^{zT} - 1) + c^{n+1} \left(\frac{e^{znT} - e^{-z(n+1)T}}{e - e^{-e}} \right) \right\} =$$

$$\frac{1}{1(1-\cos T)} \left\{ (c \cos T - c + c^{n+1} \cos nT - c^{n+1} \cos n+1T) \right\} + z \left[c \sin T + c^{n+1} (\sin nT - \sin(n+1)T) \right]$$

$$\therefore S = \frac{1}{2(1-\cos T)} \left\{ c \sin T + c^{n+1} (\sin nT - \sin(n+1)T) \right\}$$

$$\text{NOTE.—In some of the preceding problems we have used a capital letter } T \text{ for theta } (\theta).$$

School-Room Methods.

READING WITH JUNIOR CLASSES.

THE following condensed report of a lesson given by Inspector Dearness, of East Middlesex, before the East Huron Teachers' Institute, on the above subject, contains some valuable hints. We take it from the Clinton *New Era*. Inspector Dearness said:—There are many ways of teaching reading, but the eclectic method, in which the phonic system predominates, is the best. The order of teaching should be—words, phrases, sentences. Too much stress is often placed on the correct pronunciation of the article preceding the word, the learner in this way loses sight of the thought contained in the word, and from the first there should be thought-getting. As often as possible the object should be used, to connect the thought with the written or printed word. The early lessons should be taught from the blackboard, not from tablets. He then taught the class the first lessons in the Reading Primer. A hat was drawn on the blackboard, and the class was told that the chalk could tell the name, which was written on the board under the object. The question was asked, "What does the chalk say?" The learners answered, "The chalk says, a hat." Each scholar pointed to "what the chalk said." Then a cap was drawn on the board, the word was written, and the meaning it conveys was thus made clear. This drill should be taken for a day or two. The name "cat" was then placed under a drawing of the animal, which the class readily recognized. A drill followed on the words thus far used, viz.:—

A cap. A hat. A cap. A hat.
A hat. A cat. A cap.

The relational words should be taught in phrases. The phrase, "I see," should be repeated several times, and learned as a phrase. Four lessons should be given each day. The difference between words and letters should be made plain by such questions as, "How many letters in this word? In this line? How many words in this line? Words unlike one another are most readily recognized and remembered. The primer is faulty in this respect. The teacher should give a larger vocabulary than that contained in the book, and should keep a note-book of words for the next class of beginners. He advised teachers to purchase second-hand books for the dull pupils of junior classes, who should be asked to read some story in them, when they are not proficient in reading the more advanced book. In continuing the drill in Phonics, the teacher should give practice to the class in hearing the words separated before the blackboard is used. This lesson was illustrated by the use of the words

m-ou-th ch-ai-r b-a-ll b-en-ch

At first the class did not catch the idea, and after asking each one to show his right hand, the Inspector told them they might put it on their nose. Each member understood this, and seemed to enjoy the lesson. The teacher should pick out of the reading lesson a number of words very nearly alike, as

ca-p ca-t ca-n

and give a phonic analysis to illustrate the last letter, or

m-at c-at f-at r-at

to show clearly the initial letter. New words should be taught only as they are required, viz., to make sense. Using two pointers, and with the

class standing directly in front of him, the Inspector made the class read these sentences, taking the words in pairs:—

The cat can see the rat.
The cat can see a rat.
Can the cat see a rat?
Can the cat see the rat?

In reading this it was plain that the pupils were feeling their way to catch the thought, and to cultivate still further the observing and reasoning faculties, the teacher should put sentences on the board with the words altered slightly from the form given in the book, and occasionally cover some word with the hand.

HOW WE WROTE LETTERS.

EACH pupil was to imagine that he was making a visit to his uncle in the neighboring city, and was to write a letter describing the journey, reception by the uncle and family, places of amusement visited, some of the novel sights seen, and was to close the letter properly. This was a general exercise. One point at a time was taken up, and several were asked to contribute to that. The best was selected—perhaps two or three statements combined—placed on the board, and scholars found mistakes, corrected them, copied the correct form, and proceeded thus till the letter was finished. Of course scholars must be taught where to place the date and address, and I found that on most papers it was best to place a pencil dot showing where these should begin, omitting this when the proper position was learned. One morning I drew on the board the outlines of an envelope, very much enlarged of course, and the scholars were directed to draw on their slates a rectangle of common envelope size, and to follow my directions in placing superscription and drawing stamp. At first, there were some oddly directed forms. After a few minutes' practice of this kind for two or three days, I cut some manilla paper into a number of slips the size of an envelope, and these were passed to be properly directed and stamped. Mistakes were noted, and at the next exercise pupils were cautioned against these. Meanwhile other subjects were taken up in letter-writing, and then the pupils were told to write a letter to their parents describing some real or imaginary event. These were to be placed in envelopes and sent to their homes, and were quite pleasing to all concerned. About this time I began to notice that scholars, having tasted the joys of letter-writing, were writing letters surreptitiously, and passing to each other on the sly. Now was my opportunity; I asked them how they would like a postoffice, and have the privilege of writing to each other, and they were delighted with the idea. So one scholar brought a box, another a lock and key, and our postoffice was established without the aid of either Republican or Democratic administration. Of course, there were certain restrictions, to which they all carefully adhered, and there was no more of the sly work. Each scholar was to put his letter in a properly addressed envelope, draw a stamp in its place, ask two questions in regard to some study, which must be answered in reply, mention the mistakes in letter previously received from person addressed, and leave letter unsealed for my inspection. Scholars were not allowed to use time that belonged to any other study. A postmaster was appointed each day, who, surrounded by an eager and expectant crowd unlocked the box, and distributed the mail, which unlike that authorized by the U. S., always brought pleasure.—S. K., in *Common School*.

IN DRAWING.

I HAD triangles, squares, circles, stars and diamonds, cut out of pasteboard for the wee ones to draw with. After a time I desired the older ones to take two or more of these patterns and originate designs with them. This, after a few trials, they did very well. As soon as they gained an ability to make designs, smooth and regular, I introduced colored chalk for them to color and shade with. As a result, some of their designs were very pretty, evidencing an ingenuity for which I had never given them credit. After this, when their lessons were done, I had no trouble in keeping them busily employed.—*Popular Educator*.

Examination Papers.

(Continued from page 91.)

$$(1) \Delta = \frac{b^2 \sin A \cdot \sin C}{2 \sin B} = \frac{abc}{4R}$$

$$(2) r = \frac{2\Delta}{a+b+c}$$

9. In any triangle having given a, b, A, shew how to find the other parts of the triangle. Discuss the different cases shewing in which the solution is ambiguous.

(a) In the ambiguous case if c and c₁ be the two values of the third side, prove
 $c^2 + c_1^2 - 2cc_1 \cos 2A = 4a^2 \cos^2 A$.

10. In the following triangles find A and B:

(1) C=60°, a=96.487, b=78.324.

(2) C=78° 38' 25", a=252, c=378.

11. Two horizontal paths diverge at an angle φ. The point of intersection of the paths and a point on one of them subtend angles α and β at points on the other at distances c and 2c respectively from the intersection. Prove

$$\cot \phi = \cot \beta - 2 \cot \alpha.$$

(a) If a straight line meet the sides BC, CA of a triangle and the side AB produced in the direction BA, and make angles θ, φ, ω, respectively with these sides, prove

$$BC \sin \theta = CA \sin \phi + AB \sin \omega.$$

No.	Logarithm.	Ratio.	Logarithm.
17481	2425663	tan 10° 12'	9.2550997
17482	2425911	tan 10° 13'	9.2558240
18163	2591876	sin 40° 48'	9.8151928
20000	3010300	sin 40° 49'	9.8153391
30000	4771213	sin 78° 37'	9.9913717
70000	8450980	sin 78° 38'	9.9913971

HISTORY AND GEOGRAPHY.

HONORS.

Examiner:—T. ARNOLD HAULTAIN, M.A.

- Describe, as tersely as you can, the character of Elizabeth.
- What was the attitude assumed towards the Church by Elizabeth on her accession? What, in your opinion, led her to assume that attitude?
- Describe briefly and generally the relations between King and Parliament in the reign of James I.
- "... the wonderful activity of directly scientific thought which distinguished the age of the Restoration."—Green. Describe and illustrate in outline this activity.
- Write short notes on the productions and manufactures of Staffordshire and Kent.
- Mention a dozen of the more important fortified naval depôts for coal and provisions of the British Empire, indicating briefly the position of each.
- What commercial advantages will, in your opinion, accrue to Great Britain from her recent acquisition of Upper Burmah?

For Friday Afternoon.

THE "OLD HUNDRED."

HALF a bar, half a bar,
 Half a bar onward!
 Into an awful ditch,
 Choir and precentor hitch,
 Into a mess of pitch
 They led the "Old Hundred."
 Trebles to the right of them,
 Tenors to the left of them,
 Basses in front of them,
 Bellowed and thundered.
 Oh, that precentor's look
 When the sopranos took
 Their own time and hook
 From the "Old Hundred!"

Screached all the trebles here,
 Rogged the tenors there,
 Raising the parson's hair,
 While his mind wandered;
 Theirs not to reason why
 This psalm was pitched too high,

Theirs but to gasp and cry
 Out the Old Hundred,
 Trebles to the right of them,
 Tenors to the left of them,
 Basses in front of them,
 Bellowed and thundered.
 Stormed they with shout and yell,
 Not wise they sang, nor well,
 Drowning the sexton's bell,
 While all the church wondered.

Dire the precentor's glare,
 Flashed the pitchfork in the air,
 Sounding fresh keys to bear
 Out the "Old Hundred."
 Swiftly he turned his back,
 Reached he his hat from rack,
 Then from the screaming gang
 Himself he sundered
 Tenors to the right of him,
 Trebles to the left of him,
 Discords behind him
 Bellowed and thundered.
 Oh, the wild howls they wrought!
 Right to the end they fought!
 Some tune they sang, but not,
 Not the "Old Hundred."
 —New York Graphic.

TRUE HEROISM.

It calls for something more than brawn
 On bloody, ghastly fields,
 When honor greets that man who wins,
 And death the man who yields;
 But I will write of him who fights
 And vanquishes his sins,
 Who struggles on through weary years
 Against himself and wins.

Here is a hero staunch and brave,
 Who fights an unseen foe,
 And puts at last beneath his feet
 His passions base and low.
 And stands erect in manhood's might,
 Undaunted—undismayed—
 The bravest man who e'er drew sword,
 In foray or in raid.

It calls for something more than brawn
 Or muscle to overcome
 An enemy who marches not
 With banner, plume or drum—
 A foe forever lurking nigh,
 With silent, stealthy tread—
 Forever near your board by day,
 At night beside your bed.

All honor then to that brave heart,
 Though rich or poor he be,
 Who struggles with his baser part,—
 Who conquers and is free.
 He may not wear a hero's crown,
 Or fill a hero's grave;
 But truth will place his name among
 The bravest of the brave.
 —Exchange.

RECITATION.

(By a Little Child with appropriate Gestures.)

THIS is east, and this way west,
 Soon I'll learn to say the rest;
 This is high, and this is low,
 Only see how much I know.
 This is narrow, this is wide,
 Something else I know beside.

Down is where my feet you see,
 Up is where my head should be;
 Here's my nose, and here my eyes;
 Don't you think I'm getting wise?
 Now my eyes wide open keep,
 Shut them when I go to sleep.

Here's my mouth, and here's my chin,
 Soon to read I shall begin;
 Ears I have, as you can see,
 Of much use they are to me!
 This my right hand is, you see,
 This my left, as all agree;
 Overhead I raise them high,
 Clap! Clap! Clap! I let them fly.

If a lady in the street,
 Or my teacher I should meet,
 From my head my cap I take,
 And a bow like this I make.
 Now I fold my arms up so,
 To my seat I softly go.
 —Common School Education.

PROVINCIAL TEACHERS' CONVENTION.

THE following programme of proceedings at the twenty-ninth annual Convention of the Ontario Teachers' Association, to be held at Niagara-on-the-Lake on August 13th, 14th and 15th, is published for the information of the profession:—

TUESDAY, 13TH.

- 11.00 a.m.—Treasurer's Report and General Business.
- 2.00 p.m.—The advisability of holding but one High School Entrance Examination each year. MR. D. H. HUNTER, M.A., Woodstock.
- 3.30 p.m.—Teaching History. MR. WILLIAM HOUSTON, M.A., Toronto.
- 8.00 p.m.—The President's Address. MR. R. MCQUEEN, Kirkwall. An Analytic Reading of "Edinboro' After Flodden." PROFESSOR S. H. CLARK, Toronto.

WEDNESDAY, 14TH.

- 2.00 p.m.—Advanced English Schools in Rural Districts. MR. J. H. SMITH, Ancaster.
- 3.30 p.m.—The Proper Functions of a Normal School. MR. WILLIAM SCOTT, B.A., Ottawa.
- 4.30 p.m.—Industrial Training in Schools. MR. J. HOUSTON, M.A., Brighton.
- 8.00 p.m.—Kindergarten Schools in Ontario. Miss E. BOLTON, Ottawa.

THURSDAY, 15TH.

- 2.00 p.m.—Election of Officers.
 - 2.30 p.m.—Economics. MR. W. A. DOUGLAS, B.A., Toronto.
 - 3.30 p.m.—Report of Committee on the Professional Training of Teachers. MR. D. FOTHERINGHAM, Toronto.
 - 4.30 p.m.—Report of Committee on additional Normal Schools. MR. S. WOODS, M.A., London.
- The Sections will meet during the forenoon of each day.

PUBLIC SCHOOL INSPECTORS' SECTION.

- 1. Public School Text Books.
 - 2. Extension of Third-Class Certificates. MR. WM. MACKINTOSH, Madoc.
 - 3. General Registers. MR. JOHN DEARNESS, London.
 - 4. Management of Teachers' Institutes. MR. A. CAMPBELL, Kincardine.
- Reporting to Trustees. MR. D. FOTHERINGHAM, Toronto.

HIGH SCHOOL SECTION.

- 1. Tendencies of the High School Programme on the Education of the Country. MR. S. WOODS, M.A., London.
- 2. The Relative Importance of the Subjects on the High School Programme. MR. I. J. BIRCHEND, M.A., Brantford.
- 3. Principles of Reading as Embodied in the High School Reader. MR. FRANKLAND MCLEAN.
- 4. History for Entrance Examination. MR. H. B. SPOTTON, M.A., Barrie.

PUBLIC SCHOOL SECTION.

- 1. Causes of Success and Failure in Teaching. MR. GEO. W. HOLMAN, Elmville.
- 2. The Development of Character by Ordinary School Exercises. MR. R. K. ROW, Kingston.
- 3. Promotion Examinations. MR. F. C. POWELL, Kincardine.
- 4. Report of Committee on Public School Studies. MR. JOHN MUNRO, Ottawa.

The Board of Directors will meet at 10.30 a.m., on Tuesday, 13th.

Information respecting routes, rates for board, etc., may be obtained from Mr. L. C. Peake, Managing Director, Niagara Assembly, Toronto; and certificates entitling the holder to reduced rates on railways may be obtained at the principal railway stations. Blank forms for delegates may be obtained from the Secretary, MR. R. W. Doan, Principal of Duferin School, Toronto.

LOOK over your sample copy of *School Work and Play*. Read the circular, with offers for clubs, and do what you can to secure a club for your schools.

CATARRH, CATARRHAL DEAFNESS, HAY FEVER.

A NEW HOME TREATMENT.

SUFFERERS are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks. N.B.—For catarrhal discharges peculiar to females (whites) this remedy is a specific. A pamphlet explaining this new treatment is sent on receipt of ten cents by A. H. Dixon & Son, 303 West King St., Toronto, Canada.—*Scientific American*.

Sufferers from catarrhal troubles should carefully read the above.

BOOK, STATIONERY AND WALL PAPER BUSINESS for sale in good western town. Stock clean and well bought—about \$4,500. Handsome store, next post-office, and doing a well-paying business. This is an exceptional opportunity for a teacher wanting to step into a well-equipped and easily managed business, and which will bear the closest investigation. Proprietor going into a larger business in city. Apply to Bookseller, Box A, EDUCATIONAL JOURNAL, Toronto.

FOR THE HOLIDAYS.

We are desirous of securing the services of an agent to represent GRIP and THE EDUCATIONAL JOURNAL at each of the various summer resorts in the vicinity of Toronto.

Any teacher, lady or gentleman, who proposes to spend a portion of the holidays at one of these "watering places," may make arrangements for such agency on favorable terms.

Please address, giving full particulars,

GRIP PRINTING AND PUBLISHING COMPANY,
26 and 28 Front St. West, Toronto.

SUMMER COACHING SCHOOL
LAKE ROSSEAU, MUSKOKA,
For University Men, Matriculants and Candidates for First-Class Certificates.

A staff of experienced honor-graduates of Toronto University (Collegiate Institute Masters) will be in attendance for six weeks, commencing July 15th. Students limited to twenty. Applications to be addressed at once to
PRINCIPAL,
Box 179, Mail Office, Toronto.

ONTARIO VETERINARY COLLEGE
36 to 42 Temperance Street, Toronto.
MOST SUCCESSFUL INSTITUTION IN AMERICA,
Particulars sent in Annual Announcement.
PRINCIPAL, PROF. SMITH, F.R.C.V.S.

McGill University,

MONTREAL.

The Calendar for the Session of 1889-90 contains information respecting conditions of Entrance, Course of Study, Degrees, etc., in the several Faculties and Departments of the University, as follows:—

- Faculty of Arts—Opening September 16, 1889.
- Donalda Special Course for Women—Sept. 16.
- Faculty of Applied Science—Civil Engineering, Mechanical Engineering, Mining Engineering and Practical Chemistry—September 16.
- Faculty of Medicine—October 1.
- Faculty of Law—October 1.
- McGill Normal School—September 2.

Copies of the Calendar and of the Examination Papers may be obtained on application to the undersigned.

J. W. BRAKENRIDGE, B.C.L.

(Address, McGill College.) Acting Secretary.

READY 1st AUGUST.

THE NEW HIGH SCHOOL ARITHMETIC.

PRICE, - 50 CENTS.

Authorized by the Minister of Education.

Teachers Should Instruct their Booksellers to Secure the Book.

ROSE PUBLISHING CO., TORONTO.

CÆSAR'S BELLUM • BRITANNICUM

And the Nine Intervening Chapters, with Explanatory Notes, a Copious Vocabulary and Numerous Grammatical References. By J. M. Dunn, B.A., LL.B. Classes starting to read Latin should commence with this book.

Price, 40 Cents.

CICERO AGAINST CATILINE.

With English Notes, Critical and Explanatory, and a Complete Vocabulary.

Orations II., III. and IV. Price, 50 Cents.

BY WILLIAM OLIVER, B.A.

Also an edition of the same by J. M. Dunn, B.A., LL.B.

Canada Publishing Co. (Lt'd),
TORONTO.

HOME STUDY. LATIN and GREEK at sight. Use the "Interlinear-Classics." Sample page and Catalogue of School Books free. C. DESILVER & SONS, No. L.L. 1102 Walnut Street, Philadelphia, Pa.

SCHOOL TEACHERS!

If you want to make money during leisure hours and vacations, apply to R. H. MATSON, General Manager Provident Savings Life Assurance Society of New York. Address, 37 Yonge Street, Toronto.

CYCLOSTYLE DUPLICATING APPARATUS

For Duplicating Writing, Typewriting, Drawing or Music.

"Two thousand exact copies from one writing," each copy having all the appearance of an original. Simple, reliable, economical, rapid, clean and durable. Endorsed by 3,000 firms, corporations and institutions throughout the Dominion. Invaluable to teachers for reports, circulars, examination papers, copying music, maps, drawings and all classical work. Write for circular and testimonials. T. Bennett Scott, Esq., Teacher, Wheatly, Ont., writes—"The Cyclostyle machine purchased gives entire satisfaction." I. B. Beveridge, Prin. Public School, Point Edward, writes—"Cyclostyle received gives every satisfaction—it works like a charm."

CYCLOSTYLE CO., 16 KING ST. EAST, TORONTO.

"PUBLIC SCHOOL TEMPERANCE."

The attention of teachers is respectfully called to this new work, designed for use in the public schools. It is placed on the programme of studies under the new regulations, and is authorized by the Minister. It will be used in three forms. The object of the book is to impart to our youth information concerning the properties and effects of alcohol, with a view to impressing them with the danger and the needlessness of its use.

The author of the work is the celebrated Dr. Richardson, of England; and this book, though somewhat less bulky, being printed in smaller type, contains the whole of the matter of the English edition, slightly rearranged as to some of the chapters, to suit the requirements of our public school work. It is, however, but half the price of the English edition.

The subject is treated in a strictly scientific manner, the celebrated author, than whom there is no better authority on this subject, using the researches of a lifetime in setting forth the facts of which the book discourses. At the same time the style is exceedingly simple; the lessons are short and accompanied by appropriate questions, and the language is adapted to the comprehension of all who may be required to use the book. Price 25 cents, at all bookstores.

The Grip Printing and Publishing Co
PUBLISHERS, TORONTO.

A VALUABLE NEW BOOK FOR TEACHERS.

One Hundred Lessons in ENGLISH COMPOSITION

This book contains 400 Exercises in Composition, properly graded, for use in the three highest forms of public schools and the junior form of high schools and institutes. These exercises are for class work—saving the teacher a great deal of time and trouble—and they contain matter sufficient for a year's work in each grade.

It is a most valuable work, by a well-known and highly competent Canadian author, W. H. Huston, M.A., First English Master Toronto Collegiate Institute, and Editor of the English Department of the EDUCATIONAL JOURNAL.

PRICE ONLY 25 CENTS.

Send your order to the publishers and receive the book, post-paid, by return mail. Address,

Grip Printing and Publishing Co., Publishers,
28 FRONT STREET WEST, TORONTO.

Trinity Medical College

TORONTO.

Incorporated by Special Act of Parliament. Established 1850.

—IR AFFILIATION WITH—

The University of Trinity College, the University of Toronto, Queen's University, Victoria University and the University of Manitoba, and specially recognized by the Royal College of Surgeons, England, the Royal College of Physicians, London, the Royal College of Physicians and Surgeons, of Edinburgh, the Faculty of Physicians and Surgeons, of Glasgow, and the King's and Queen's College of Physicians of Ireland, and by the conjoint examining board in London and Edinburgh.

SESSION 1889-90.

For full information regarding Graduation, Medals, Scholarships, Fees, etc., and for copies of the Annual Announcement, apply to

DR. W. B. GEIKIE, Dean.

Holyrood Villa, 52 Maitland Street, Toronto.

Examination Time-Table, 1889.

CANDIDATES should notify the presiding Inspector, not later than the 24th May, of their intention to present themselves for examination. All notices to the Department for intending Candidates must be sent through the presiding Inspector.

The presiding Inspector will please give sufficient public notice respecting the Examinations.

The Head Masters of Collegiate Institutes and High Schools will please send the applications of their Candidates to their Local Public School Inspector, and in case of there being more than one Inspector in a County, to the one within whose jurisdiction the School is situated, together with the required fee of Five Dollars from each Candidate. A fee of Five Dollars is also required from each Candidate for a First Class Certificate, Grade C, three dollars of which is to be sent with form of application to the Secretary of the Education Department.

Where the number of candidates necessitates the use of more rooms than one, those taking the University Examination are, in order to prevent confusion, to be seated in the same room.

NON-PROFESSIONAL THIRD AND SECOND CLASSES AND I.C.

THIRD CLASS EXAMINATION.

Tuesday, 9th July.—A.M., 8.40-8.55, Reading Regulations; 9.00-11.30, English Poetical Literature. P.M., 2.00-4.30, History and Geography.

Wednesday, 10th July.—A.M., 9.00-11.30, Arithmetic and Mensuration. P.M., 2.00-4.30, English Grammar.

Thursday, 11th July.—A.M., 9.00-11.30, Algebra. P.M., 2.00-4.30, English Composition and Prose Literature.

Friday, 12th July.—A.M., 9.00-10.15, Reading and Orthoëpy; 10.20-12.45, Drawing. P.M., 2.00-4.00, Book-keeping; 4.05-5.20, Précis Writing and Indexing.

Saturday, 13th July.—A.M., 9.00-10.30, Latin Authors, French Authors, German Authors; 9.00-11.00, Physics. P.M., 2.00-4.30, Latin Composition and Grammar, French Composition and Grammar, German Composition and Grammar; 2.00-4.00, Botany.

Oral Reading to be taken on such days and hours as may best suit the convenience of the Examiners.

SECOND CLASS AND PASS MATRICULATION EXAMINATION.

Tuesday, 9th July.—A.M., 8.40-8.55, Reading Regulations; 9.00-11.30, English Poetical Literature; P.M., 2.00-4.30, History and Geography.

Wednesday, 10th July.—A.M., 9.00-11.30, Arithmetic. P.M., 2.00-4.30, English Grammar.

Thursday, 11th July.—A.M., 9.00-11.30, Algebra. P.M., 2.00-4.30, Chemistry.

Friday, 12th July.—A.M., 9.00-11.30, Euclid. P.M., 2.00-4.30, Botany.

Saturday, 13th July.—A.M., 9.00-11.30, Physics. P.M., 2.00-3.30, French Authors; 3.35-5.35, French Composition and Grammar.

Monday, 15th July.—A.M., 9.00-11.00, Latin Authors; 11.05-12.35, Latin Composition and Grammar. P.M., 2.00-3.30, German Authors; 3.35-5.35, German Composition and Grammar.

Tuesday, 16th July.—A.M., 9.00-11.30, English Composition and Prose Literature. P.M., 2.00-4.30, Greek (for Matriculants only, not for second class candidates).

FIRST "C" AND HONOR EXAMINATION FOR MATRICULATION.

Tuesday, 16th July.—A.M., 8.40-8.55, Reading Regulations; 9.00-11.30, English Composition and Prose Literature.

Wednesday, 17th July.—A.M., 9.00-11.30, Algebra. P.M., 2.00-4.30, English Poetical Literature.

Thursday, 18th July.—A.M., 9.00-11.30, Euclid. P.M., 2.00-4.30, History and Geography.

Friday, 19th July.—A.M., 9.00-11.30, Trigonometry. P.M., 2.00-4.30, English Grammar.

Saturday, 20th July.—A.M., 9.00-11.30, Chemistry. P.M., 2.00-4.30, Botany.

Monday, 22nd July.—A.M., 9.00-11.30, Latin Authors. P.M., 2.00-4.30, Latin and Greek Grammar.

Tuesday, 23rd July.—A.M., 9.00-11.30, Latin Composition. P.M., 2.00-3.30, French Authors; 3.35-5.35, French Composition and Grammar.

Wednesday, 24th July.—A.M., 9.00-10.30, German authors; 10.35-12.35, German Composition and Grammar. P.M., 2.00-4.30, Greek Authors.

TORONTO, February, 1889.

MEMORANDUM RE FIRST CLASS EXAMINATIONS.

Candidates for Grade C will be examined at the following places: Guelph, Hamilton, Kingston, London, Ottawa, Toronto; or at such other place as may be desired by any Board of Trustees on notice to the Department on or before the 25th day of May; it being understood that the Board is willing to bear the expense of conducting the examination.

Candidates for Grade A or B will be examined at the University of Toronto, commencing 3rd May.

W. STAHLSCHMIDT & CO.

PRESTON, ONTARIO,

Manufacturers of Office, School, Church and Lodge Furniture



THE "MARVEL" SCHOOL DESK,

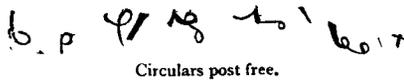
PATENTED JANUARY 14TH, 1886.

Send for Circulars and Price Lists. Name this paper. See our Exhibit at the Toronto Industrial Exhibition.

TORONTO REPRESENTATIVE

Geo. F. Bostwick, 56 King Street West.

BARKER'S SHORTHAND SCHOOL,
45, 47 and 49 King Street East, Toronto.



Circulars post free.

Good Agents Wanted over the entire Dominion. Address Geo. D. Ferris, 87 Church Street, Toronto.

TEACHERS AND STUDENTS may have all their book wants promptly attended to, either in the new or used line, and at reasonable terms, by addressing

Frank Porter, 353 Yonge St.

(SUCCESSOR TO DAVID BOYLE.)

Books to any part of the Dominion, for Inspectors, Teachers and Students, mailed or expressed daily.

Special Offers.

We will send The Educational Journal **three months** and Ayres' Verbalist and Orthoepist, postpaid, for \$1.00.

We will send The Educational Journal **four months** and Williams' Composition and Practical English, postpaid, for \$1.00.

We will send The Educational Journal **one year** and Ayres' Verbalist and Orthoepist, postpaid, for \$2.00.

We will send The Educational Journal **one year** and Williams' Composition and Practical English, postpaid, for \$2.00.

We will send The Educational Journal **one year** and Worcester's Dictionary (Full Sheep), for \$9.50.

We will send The Educational Journal **one year** and the Concise Imperial Dictionary (best binding), for \$5.50.

We will send The Educational Journal **one year** and Webster's Dictionary (Full Sheep), for \$11.50.

We will send The Educational Journal **one year** and Lippincott's Gazetteer (Full Sheep), for \$11.50.

ADDRESS—

The Educational Journal,

GRIP OFFICE, TORONTO.

Toronto



College of Music

and **Orchestral and Organ School**

Thorough instruction in every branch of Music, Vocal, Instrumental and Theoretical, by exceptionally well qualified teachers. Large 3-manual Pipe Organ and capacious Music Hall. Students of Orchestral Instruments have the special advantage of practical experience in an orchestra of sixty performers. Vocal Students take part in a large chorus, gaining experience in Oratorio and classical works. All courses thoroughly practical, whether for professional or amateur students. All Students participate FREE in concerts and lectures on harmony, acoustics and all other subjects necessary to a proper musical education. TERMS:—Class or private tuition, \$5 to \$30. F. H. Torrington, Director, 12-14 Pembroke St., TORONTO

WALL MAPS FOR SCHOOLS.

The most accurate and best series of wall maps published. Drawn and engraved by the eminent geographer, J. BARTHOLOMEW F.R.G.S., Edinburgh. Mounted on Strong Cloth, with Rollers, clearly Colored and Varnished.

NO.	SIZE.	REGULAR PRICE.	NO.	SIZE.	REGULAR PRICE.
1. Railway Map of Ontario,	43 by 33 inches	\$3 00	10. Africa,	67 by 52 inches	\$4 50
2. Ontario,	67 by 52 "	4 50	11. British Islands,	67 by 52 "	4 50
3. Quebec,	67 by 52 "	4 50	12. Australia and New Zealand,	67 by 52 "	4 50
4. New Brunswick,	67 by 52 "	4 50	13. Palestine,	67 by 52 "	4 50
5. Nova Scotia and Prince Edward Island,	67 by 52 "	4 50	14. The World in Hemispheres,	67 by 52 "	4 50
6. North America,	67 by 52 "	4 50	15. The World on Mercator's Projection,	67 by 52 "	4 50
7. South America,	67 by 52 "	4 50	16. United States,	81 by 52 "	6 00
8. Europe,	67 by 52 "	4 50	17. The Dominion of Canada,	80 by 49 "	6 50
9. Asia,	67 by 52 "	4 50			

To any Teacher or Board of Trustees subscribing for THE EDUCATIONAL JOURNAL at \$1.50, we will send one or more of the above maps, each at \$1.00 less than the Regular Price. This is an opportunity that should not be neglected. Supply your school at once with First-Class Maps at wholesale rates. In ordering Dictionaries or Maps please give your nearest express office. Address,

EDUCATIONAL JOURNAL, Grip Office, Toronto.

WHERE AND HOW TO GET YOUR STANDARD DICTIONARY!

The Regulations of the Education Department (approved August 25, 1885), No. 23 (f), read as follows:

"Every School should have, at least, a Standard Dictionary and a Gazetteer."

We make Teachers and Boards of Trustees the following offers:—

<i>Concise Imperial, best binding,</i>	-	-	\$5.50
<i>Webster's Unabridged, full bound,</i>	-	-	11.50
<i>Lippincott's Gazetteer, full bound,</i>	-	-	11.50

Together with one year's subscription to THE EDUCATIONAL JOURNAL in every case

THE GRIP PRINTING & PUBLISHING CO.

26 & 28 FRONT STREET WEST, TORONTO.

SPECIAL LIST OF REMAINDERS.

As in many cases only Single Copies of the following books are in stock, early orders should be placed.

Literature

FOR 1889.

SPECIAL TO TEACHERS!

OFFERED AT

One-Third Off.

NOTES,

Explanatory, Suggestive & Critical

— ON THE —

LITERATURE SELECTIONS

PRESCRIBED FOR

Third-Class Teachers' Non-Professional Examinations.

1887-1888.

WITH AN APPENDIX CONTAINING

Notes on the New Selections

FOR 1889.

BY J. E. WELLS, M.A.

Late Principal of Woodstock College.

Regular Price, 30 Cents.

Offered at 20 Cents.

BIRTHDAY AND SCRIPTURE TEXT BOOKS.

Offered at one-half price, as only one copy of each remains in stock.

	Regular Price	Offered at
The Christian Daily Treasure. Book of sacred verse and holy counsel, and birthday souvenir. Ivory enamel cover	\$ 90	\$ 50
The Christian Daily Text Book and Birthday Record. Ivory enamel cover	90	50
Kemble's Christian Year Birthday Book. Edited by Cecilia Dixon; illuminated cover	90	50
Bible Gems. A birthday text book, with diary for memoranda. Ivoryine, with picture of flowers from nature.	50	25
Golden Truths and Birthday Note Book. Ivory enamel cover	90	50
Golden Links. A birthday text book, with diary for memoranda. Calif, gilt edge	50	25
The Christian's Daily Treasure Book of Sacred Verse and Holy Counsel, and Birthday Souvenir. Morocco.	50	25
Old World Chimes. Thoughts from old writers for every day in the month	70	35
A Guide and Comforter. Being passages from the Bible, with a brief prayer for every day in the year. Arranged by M. A. Wilson. Roan	50	25
Golden Links. A birthday text book. Roan	90	50
Daily Comfort. Being meditations in the words of the Bible, for every day in the year.	35	20
Evening, cloth	35	20
Morning, roan	70	35
Morning and Evening combined, cloth	70	35
Morning and Evening combined, roan	50	25
Bible Words for Birthdays. Cloth	35	20
The Birthday Memorial Text Book	20	10
The Birthday Scripture Text Book. Morocco gilt	90	50
A Diary of Golden Thoughts for the Year. Cloth	70	35
Bible Words for Birthdays. Padded roan	90	50
Sacred Gems. A birthday text book, with diary for memoranda	35	20
Heavenly Light—Cheering Texts from Scripture. A book for every day in the year	35	20
Bible Gems. A birthday text book, with diary for memoranda. Polished morocco	90	50
The Album Scripture Text Book	90	50
The Daily Motto Book. A birthday calendar	35	20
Daily Manna; or, The Christian's Daily Remembrancer of Precious Truths. By W. Nicholson	50	25
The Illuminated Scripture Text Book. With interleaved diary for memoranda, and a colored illustration for every day. By Edmond Evans; morocco	90	50
The Birthday Year. With selections from the Poets Chaucer to Longfellow, chronologically arranged. Cloth, gilt edge and side	50	25
The Russell-Lewell Birthday Book. Ivory enamel cover	90	50
The Longfellow Birthday Book. Arranged by Cecilia Dixon; ivory enamel	70	35
The Longfellow Birthday Book. Selection of choice passages for every day in the year, from the Henry Wordsworth Longfellow. Cloth	35	20
The Tennyson Birthday Book. Edited by Emily Shakespeare. Morocco	1 00	50
The Wedding Day Book. With the congratulations of the poets. Arranged by Katharine Lee Bates	1 25	60
Memorandum Book and Birthday Diary. With grotesque designs by Charles Harrison. Cloth	35	20
Hidden in the Heart. Short Bible readings for every day in the year. Selected and arranged by Mrs. E. H. Riches	50	25
Auld Acquaintance. A birthday book of wise and tender words of Robert Burns	50	25
Rust-grain, padded	1 25	60
The Illustrated Quaker's Album and Autograph Book. With Shakespearean quotations. Roan	1 00	50
Moocco	1 50	75
Daily Light on the Daily Path. A devotional text book for every day in the year, in the very words of Scripture	35	20
Daily Chimes. Thoughts in verse for every day in the month	20	10
Poems of Wordsworth. Selected from the best editions. In two volumes (Volume II. only in stock)	35	15
Poems of Longfellow. Selected from the best editions. In two volumes (Volume II. only in stock)	35	15
Poems of Milton. In two volumes, each	35	15
A Selection from the Works of William Wordsworth. Selected and arranged by F. Turner Palgrave. Roan	1 00	50
A Selection from the Works of Lord Byron. Edited and arranged by Swinburn. Roan	1 00	50
A Selection from the Works of Martin Farquhar Tupper. Roan	1 00	50
Daily Texts for Little Ones. Compiled by Elizabeth Thomson King; illustrated by Agnes Gardner King	70	35

MISCELLANEOUS.

Incidents of Coercion. A journal of visits to Ireland in 1882 and 1888. By the Right Honorable G. Shaw Lefevre, M.P.	35	15
The Life of the Right Honorable W. E. Gladstone, M.P. A popular biography	35	15
Notes on the Early Training of Children. By Mrs. Frank Malleson. Third edition	35	10
Women and Men of To-day—Married and Single. By Lille Harris	35	15
Quentin Durward. By Sir Walter Scott. Tauchnitz edition, paper	50	20
The Emperor Frederick III. and the Crown Prince. By Joseph Lawton. Illustrated	35	15

	Regular Price	Offered at
Everyday Help Series	\$ 20	\$ 10
1. How to Write. A pocket manual of composition and letter-writing.		
2. How to Behave. A pocket manual of etiquette and guide to correct personal habits.		
3. How to do Business. A pocket manual of practical affairs and guide to success in life, also a dictionary of commercial terms.		
4. How to Debate. A manual for mutual improvement societies, with hints on public speaking and a list of subjects suitable for discussion.		
Catechism of the History of England from its Earliest Period to the Present Time	10	03
The Natural History of Evening Parties. By Albert Smith	35	15
The Natural History of the Flirt. By Albert Smith, with illustrations by John Leech	35	15
The Natural History of the Gent. By Albert Smith, illustrated by Henning, Garbini and Gilbert	35	15
Invalid Cookery. By Mary Davies	35	15
"Stops," or, How to Punctuate. A practical handbook for writers and students. By Paul Allardyce. Fifth edition, revised and enlarged	35	15
The Nurse's Companion in the Sick Room. By Mary Davies	35	10
The Cow. A guide to dairy management and cattle-rearing, containing all necessary information regarding animals, grazing, milk, butter and cheese	35	15
Academy Sketches. A supplemental volume of sketches of paintings, water colors, etc., in the Royal Academy, Grosvenor Gallery, the New Gallery and other exhibitions. Edited by Henry Blackburn. Sixth year, 1888	70	30
The English Reciter. Edited by Alfred H. Miles	20	10
The Shakespearean Reciter. Edited by Alfred H. Miles	20	10
The Victorian Reciter. Edited by Alfred H. Miles	20	10

The following are Novels of which Single Copies Only are in Stock. Orders should be placed at once.

Katharine Regina. By Walter Besant, author of "All Sorts and Conditions of Men," etc.	35	15
The Dusantes. A Sequel to "The Casting Away of Mrs. Lex and Mrs. Aleshine," by Frank R. Stockton, author of "Rudder Grange," etc.	35	15
Gabriel Allen, M.P. By G. A. Henty, author of "All but Lost," "A Search for a Secret," "The March to Magdala," etc.	35	15
Life of the Emperor William of Germany. Edited by H. W. Duecken, Ph.D.	35	15
Goethe's Faust. Translated from the German by John Aucher, LL.D. Part II., with an introduction by Henry Morley	25	15
The Diary of an Idle Woman in Sicily. By Francis Elliot, author of "Pictures from Old Rome," etc.	35	15
The Emperor's Diary of the Austro-German War, 1866, and the Franco-German War, 1870-71, to which is added Prince Bismarck's Rejoinder. Edited by Henry W. Lucy	35	20
Digger Dick's Darling and Other Tales. By Mrs. A. Blitz	35	15

The following volumes offered at reduced rates, as they are slightly soiled.

The New Testament with Explanatory Notes. By the Rev. J. Wesley, A.M. Revised and improved by additional notes allusive to Eastern manners and customs, according to modern travels, and as elucidatory of Scripture import by the author of Helps to the Pulpit. Crown, 8vo, cloth, 704 pages, with a beautifully colored frontpiece by Kronheim, exhibiting the portrait of Wesley, his escape from fire when a child, etc., etc.	1 25	75
Beginning Life. A book for young men. By John Tulloch, D.D. 16th thousand	1 25	75
Old Faiths in New Light. By Newman Smyth	35	25
Victorian Hymns. English sacred songs of fifty years. Memorial of Francis Ridley Havergal. By her sister M. V. G. H.	50	1 00
Lectures by the Rev. W. Morley Punshon, LL.D.	50	30
Simon Jasper. By Mark Guy Pearse, author of Daniel Quorum, Homely Talks, etc.	25	75
Life of the Soul. By the Rev. Joseph Cook	50	30
Conscience, with Preludes on Current Events. By Jos. Cook	35	20
Yesterday, Today and Forever. A poem in 12 books. By E. H. Bickersteth, M.A.	90	50
Some Aspects of the Blessed Life. By M. Guy Pearse.	35	20
The Shadow of the Rock and Other Poems. Edited by E. H. Bickersteth, M.A.	90	50
Under the Surface. By Francis Ridley Havergal	50	30
What Saith the Master? A daily text book in the very words of our Lord. Selected by May Cochrane	35	20
Heavenly Lights. Cheering texts from Scripture. A birthday book for every day in the year	20	10
My Object in Life. By Ven. F. W. Farrar, D.D., F.R.S.	35	20
Thorn Blossom. Quotations grave and gay arranged as a birthday text book. Persian call.	35	20
The Night Side of New York Life; or, The Masque Torn Off. Twelve Sabbath morning discourses. By Rev. T. DeWitt Talmage, D.D.	35	20
Eminent Women Series—George Eliot. By John H. Ingram	50	30
Eminent Women Series—Elizabeth Barrett Browning	25	75
Biographies of Great Composers—Mendelssohn. By J. Cuthbert Hadden	50	30
The Statesmen Series—Viscount Bolingbroke	90	50
Boswell and Johnson—their Companions and Contemporaries. By J. F. Waller, LL.D.	50	30
The House of the Seven Gables. A romance. By Nathaniel Hawthorne	70	40

PRACTICAL EDUCATION

SPECIAL TO TEACHERS.

Spend your Vacation in Toronto and take up the Special Course for Teachers at our College.



All teachers should send for circulars and samples of **PENMANSHIP. SPECIAL LOW TERMS.** Advantages unequalled by any similar institution. Immediate application necessary—address, **J. M. CROWLY, General Manager,** For full information.

FOR LADIES AND GENTLEMEN

**UNIVERSITY OF TORONTO
MEDICAL FACULTY.**

The Winter Session will Commence October 1, 1889.

FOR PARTICULARS ADDRESS

WM. T. AIKINS, M.D., LL.D.
DEAN.

ADAM H. WRIGHT, M.D.
SECRETARY.

SPECIAL TO TEACHERS. WORK FOR VACATION.

The Canadian Mutual Aid Association

(ASSESSMENT SYSTEM).

POPULAR - AND - COMMON - SENSE - SYSTEM - OF - LIFE - INSURANCE.

Large Reserve Fund as guarantee. Return of profits to members every ten years. For particulars address the head office—**No. 10 King Street East, Toronto.** Agents wanted. **W. P. PAGE, Manager.**

**VANNEVAR & CO.
BOOKSELLERS AND STATIONERS.**

Dealers in the books required by **TEACHERS** :—The Text Books required for **TRAINING INSTITUTES, COLLEGES** and **HIGH SCHOOLS**, and for **PUBLIC** and **PRIVATE SCHOOLS**.

Save time, save worry, save disappointment, save money by sending your orders **direct to us.**

VANNEVAR & CO., 440 YONGE ST., opp. CARLTON ST., TORONTO.

“School Work and Play.”

The attention of Teachers is directed to the new illustrated paper, with above title, for boys and girls. Samples of early numbers have been sent to teachers, with circulars describing the paper, and offering

PREMIUMS FOR SCHOOL CLUBS.

Please read carefully the latest circulars accompanying the samples of issue of May 3rd.

The paper contains eight pages, 10x15, and will be filled with matter at once entertaining to the pupil and of advantage to the teacher in its relation to school operations. It will always be abundantly illustrated in high style of art. The following will be among the departments :—

- “Our Story Column.”
- “Our Friday Afternoon at Home.”
- “The Field of Fame,”
- “Puzzlewits.”
- “Some Famous Boys and Girls.”
- “Editorial.”
- “Jest Phor Phun.”
- “For the Little Ones.”
- “Light on the Lessons.”
- “Games and How to Play them.”

If any teacher has not received the samples, they will be sent promptly on receipt of post-card. Please say that you are a teacher.

The paper will be carefully edited by **W. H. HUSTON, M.A.**, English Master Toronto Collegiate Institute. The distribution will be in school clubs only, as described in the circular, outside subscribers being allowed to connect themselves with the club. The active co-operation of Teachers will thus be necessary to success. Please send Club Orders as soon as possible, and secure back numbers. Address,

GRIP PRINTING AND PUBLISHING CO.
Publishers,
28 FRONT STREET WEST TORONTO.



Provident Life and Live Stock Association,

CHIEF OFFICE :—

Room D, Arcade, TORONTO, Canada,

Is the one that gives the best benefits to its members and pays the agents well. It is to your interest to send for Prospectus, Claims Paid, etc.

Agents required in unrepresented districts. Address, **Managing Director.**

WILLIAM JONES,



BUCKEYE BELL FOUNDRY.
Bells of Pure Copper and Tin for Churches, Schools, Fire Alarms, Farms, etc. **FULLY WARRANTED.** Catalogue sent Free.
VANDUZEN & TIFT, Cincinnati, O.

**THE HIGH SCHOOL
DRAWING COURSE.**

Authorized by the Minister of Education

The Course is now complete :

- No. 1—FREEHAND,
- No. 2—PRACTICAL GEOMETRY.
- No. 3—LINEAR PERSPECTIVE,
- No. 4—OBJECT DRAWING,
- No. 5—INDUSTRIAL DESIGN.

These books are all uniform in size and style, and constitute a complete uniform series. The same plan is followed through them all—the Text, the Problems, and opposite the Problems, in each case, the Exercises based upon them. The illustration is upon the same page with its own matter, and with the exercise, in every case, is a space for the student's work. Each copy, therefore, is a complete Text-book on its subject, and a Drawing Book as well, the paper on which the books are printed being first-class drawing paper. The student using these books, therefore, is not obliged to purchase and take care of a drawing book also. Moreover, Nos. 1, 4 and 5 are the only books on their subjects authorized by the Department. Therefore, if the student buys the full series, he will have a *uniform, and not a mixed series, covering the whole subjects of the examinations*, and edited by Mr. Arthur J. Reading, one of the best authorities in these subjects in this country, and recently Master in the School of Art.

Each book is in the direct line of the curriculum, and is authorized. The examinations in High School Drawing will be set from the authorized books.

The Grip Printing and Publishing Co
PUBLISHERS, TORONTO.

**“PRACTICAL * PROBLEMS”
— IN —
ARITHMETIC.**

FOR FIRST, SECOND AND THIRD CLASSES.

By **JAMES WHITE, PUBLIC SCHOOL TEACHER,**
EDMONTON, ONT.

This book is now ready for delivery. It contains nearly 700 Practical Problems in Arithmetic for the three lowest forms, and will supply the teacher with questions at once interesting and useful. The problems are properly graded for the separate classes, and answers are given in the appendix.

Board and Linen Covers—Price, post-paid, Only 25 cts.

ADDRESS,

Grip Printing and Publishing Company
PUBLISHERS,
28 Front Street West, Toronto.

WOMAN'S MEDICAL COLLEGE

TORONTO, ONTARIO.

In affiliation with the University of Trinity College.

For full information regarding graduation, prizes, fees, etc., and for copies of the annual announcement, apply to **D. J. GIBB WISHART, Sec.**
30 Carlton Street. Toronto.

DAY'S BUSINESS COLLEGE

Toronto, offers excellent facilities for acquiring

A GOOD BUSINESS TRAINING.

Instruction Sound and Practical. References to former students and reliable business men. For terms address **JAMES E. DAY, Accountant,** 94 and 96 King Street West, near Rossin House.