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

Subscription, \$1.50 a year. In advance.

# Mable of Gontents.

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DON'T forget the great Convention, July 14th—17th !

HEREAFTER High Schools can be established only in municipalities containing not less than one thousand of a population, unless in cases in which a district is formed of more municipalities than one, in which case the minimum population is fixed at three thousand.

It is now provided that Entrance Examinations are not necessarily confined to the High School districts. Where County Councils desire to hold examinations for the convenience of country pupils outside a High School district they are empowered so to do on giving notice to the County Inspector. All the expenses of such examinations, if not held at the request of the High School Board, are to be paid by the County Councils.

THE new High School building which is being erected in Montreal on the site of that which was destroyed by fire a few months ago, will be, it is claimed, the finest structure of its kind in America. The edifice, which is to be ready for occupation next January, will be in the form of a hollow square, occupying a whole block 200 feet by 250 feet. It will be of red brick with stone trimmings. It will be two stories in height, with basement, and will contain about fifty class-rooms and offices,

## TORONTO, JULY 1, 1891.

giving accommodation for some 1,600 children. The cost will be in the neighborhood of \$185,000.

AT the recent Second Class professional examinations at the Toronto and Ottawa Normal Schools, twenty males and ninetyfour females were successful at Toronto, and thirty-two males and fifty females at Ottawa, making a total addition of nearly two hundred to the second-class ranks. Mr. Neil A. Campbell is the Toronto, and Miss Margaret McFarlane the Ottawa Medallist. The other names in the honor list are, Toronto :---Misses Dent, Freleigh, Kennedy, King, Porter, Simmons; Ottawa :---Miss Alexander.

OUR subscribers will please bear in mind that THE EDUCATIONAL JOURNAL, following in part their good example, takes an annual rest during the month of August. No JOURNAL is published on August 1st or 15th. Promptly on the first day of September they may expect its re-appearance, in renewed strength and vigor. Improvement is still the order of the day and we hope and confidently expect to make THE JOURNAL, during the next school year, brighter, more helpful, and better in every respect, than in any previous year.

It is announced that a meeting of Canadian teachers will be held during the International Convention under the auspices of the Minister of Education for Ontario, with the view of forming a Dominion Teachers' Association. If the idea is found practicable there can be no doubt that much good will result from the periodical interchange of views and experiences between teachers representing the different Provinces of the Dominion. The project will be attended with some difficulty owing to the magnificient distances which separate the Provinces. It may also be well worth considering whether an "International Convention," including the United States and Canada, would not be a still better arrangement. Education, like religion, should overleap and ignore all national boundaries.

WE are sorry to have been obliged to hold over a number of reports of teachers' institutes which have come to hand, in

order to make room for matter, some of which has been in type for some time. As explained elsewhere the next number is to be a special number. Hence we shall be unable to publish the reports until after the holidays, which will, we fear, be too late. We shall at least go through them carefully and may, perhaps, be able to summarize the important points. If, however, those who dealt with special subjects or prepared papers of a useful and practical character, would be kind enough to send us abstracts we should be glad to give place to as many as possible during the coming school year. Inspectors and secretaries may help us and the work very materially by informing us of specially good articles or inducing the authors to send them to us. We shall be grateful for all such aid, though, of course, we may not be able to publish all that we should like to give.

Vol. V.

No. 6.

WE can readily believe that after a hard year's work the great majority of our subscribers will enjoy a rest for a month or two from purely professional work. We propose, therefore, that our issue for July 15th---the last before our annual holiday--shall be of an entirely different character and make-up from those of the ordinary Dropping the departmental numbers. arrangement, we hope to have the whole available space of THE JOURNAL filled with brief articles written specially for its columns, by some of the best authorities on educational subjects in Canada. These subjects will be chosen with special reference to the forthcoming International Convention. The aim will be to furnish a number that may be of equal interest to Canadian teachers and to our visiting brethren from across the line. Portraits of Hon. W. T. Harris, Commissioner of Education for the United States, and of Hon. George W. Ross, Minister of Education, Ontario, and probably illustrations of other kinds, will be given in the best modern style, by the photogravure process. Realizing that every teacher in Ontario and very many from the United States will want one or more copies of this historical number, the Publishers are preparing to issue a large edition, with handsome cover. Look out for it.

# \* Special Papers. \*

### "HOW TO KEEP THE FIRST CLASS BUSY FOR THE DAY IN AN UNGRADED SCHOOL."\*

#### BY MISS LIZZIE BARRY.

DURING the past few weeks many little "tots" have been wending their ways (cheerfully, I hope), to enter upon the great event of their lives—the first day in school. Beforehand, it was their chief subject for thought, and the great topic of conversation. In order that their childish anticipations may not be blighted, it is quite necessary that the teachers have been thinking, and preparing also, how best to greet the little ones, and earnestly seeking opportunities for making their childhood more happy and useful.

It is of vital importance that we impress on their childish minds that we are their friends ; we should be filled with the sentiment of Pestalozzi : " I would have my children able at each moment from morning to evening to read on my face, and to divine upon my lips, that my heart is devoted to them ; that their happiness and their joys are my happiness and my joys."

Education consists in the formation of good habits : good habits of body and mind. The first act, mental or moral, is the starting point of habit. It leaves a tendency to recur, each successive step becoming easier than the preceding, till the performance of the act becomes a second nature. This law of habit works with special power during the impressionable period of childhood. Childhood demands activity and contact with the objective world; the business of children is to grow ; to become familiar with their surroundings; to form right habits, and to master the objective phase of subjects; hence, let us keep the little ones interested and busy, making even their amusements educational, and in the absence of Kindergarten gifts inventing other apparatus

What shall I teach? And how shall I teach it? Few problems are so important to the teacher. Adaption is the golden law of culture and the perfection of system. The order of culture must be the order of natural development. Childhood is the golden period, the flood-season of perception and memory.

The cultivation of the æsthetic is of no small importance. The soul expresses itself in song and poetry. Therefore let us make free use of elegant extracts, embodying strong thoughts couched in graceful language by teaching a short one every morning. We need to be particularly cautious in making suitable selections, for instance, at this particular season, selecting such as tend to implant in youthful minds a love of nature. If some should, as undoubtedly they will, embody language difficult for children to comprehend, let us not worry about that; now is the springtime, sow the seed and the harvest will come by and by. The man seeks to know why it is and whence it is ; the youth to know how it is, but the child is content to know what it is. Five or six

\* Read Before the North Essex Teachers' Convention at Windsor, June 4th and 5th, minutes after prayer each morning will be sufficient for this department of school work, and grand results will flow therefrom.

I have my junior reading classes first in the morning while the senior classes are working arithmetic at seats. Great variety should be aimed at in this as in all other departments of school work. The same work done morning and afternoon, day after day, must become sadly monotonous and lose all freshness and interest, while a systematic variation of work gives pleasant variety.

Before a child can read intelligently, up to its limit of power, that is, in silent reading, it must be able to recognize the words without conscious effort. In order to bring our pupils up to this stage we must give plenty of word-recognition by the Phonic System. The enthusiastic and spirited phonic reading lesson is always attractive, and many devices may be planned to heighten the effect, as pointing, erasing, replacing, allowing the little ones to frequently use the chalk, underlining and encircling with colored crayons.

Gaining knowledge of the subject must always be preparatory to expressive reading. In teaching new words we should keep a few lessons in advance of where the class is reading, so that when children arrive at a certain lesson, by frequent use and application they are quite familiar with the words and their meaning. Since acuteness in the extraction of thought is a necessary step to the expression of that thought : while the teacher is engaged with the First Class, the Part Second Class may be obtaining all the thought they can from their lesson; and, to give variety, the teacher may ask for a reproduction of these thoughts, sometimes orally, but oftener in writing. When the allotted time for the Phonic lesson has elapsed, the children must have work to do at their seats. The work should pertain, as often as possible, to the preceding lesson. If, in the Phonic reading, some new sound has been taught, work should be assigned that will tend to impress it. In the Number, /Language and Drawing lessons, the same rule should be observed, and thus the knowledge gained is fixed firmly in the mind of the pupil.

While the teacher is engaged with one class, it is necessary that the others should be kept busy. The work should be interesting and developing and such as the children, putting forth their best efforts, can do *well*. It is absolutely necessary to examine the slates every time work is done. It is better to shorten the lesson one is giving at the board than neglect to examine the work done by the scholars at their seats. What child can be expected to take interest or pride in work that is never to meet his teacher's eyes? And how much better the children will work after an encouraging nod or word of approbation.

In an ungraded school we have not the time to take the branches of our primary department so frequently as they are taken in a graded school, still, by skilful managemen, no branch need be overlooked. Occasionally, instead of our usual Reading or Number lesson, we may introduce an object or primary geography lesson. The little ones quickly brighten up at the appearance of the moulding board.

An ungraded school has many disadvantages, but, as a cloud has a silver lining, it also has its advantages; for the children learn much incidentally, and there are the advanced pupils who, with a little guidance, can assist the teacher materially in teaching many of the junior classes. Since this is quite necessary in a large, ungraded school, the teacher must be judicious in her selection of pupils to take junior classes, arranging her programme so that those best adapted to the work may be free to do it.

On Arbor Day, 1890, I had the larger boys make seats under the shade trees and, on warm days, I send classes out to be taught in the free, open air, which is both pleasant and beneficial for the children. I have a transferable blackboard which may be taken out when required. By way of parenthesis I may add that the seats are so arranged that I may see at a glance through the window that the children are orderly, although I do not consider this absolutely necessary, nor would I have my children feel that I was watching them. But they will notice themselves that their actions may be conveniently observed; and we must always act on the principle : " Lead not into temptation." Moreover, I never fail to appreciate work done outside, having the class and pupil in charge invariably form in a line on entering, and if it were slate work they were doing, I examine their slates, and if preparatory or oral work, I inquire about their success, approving every effort.

After the Part Second have had their Reading or Language lesson, and have been given work to do at seats, I then take a Number Lesson with the First Class, after which I give a short arm exercise to junior pupils and occasionally to the whole school; then, giving the juniors a little extra intermission, seeing that they go to the far end of the yard, so as not to disturb the school while the Senior Arithmetic classes are taken up.

Marching, as well as all kinds of drill properly conducted, promotes definiteness of action, and thereby definiteness of character; and such exercises are very helpful in obtaining and preserving order. But the plea : " there is no time for marching or drill in anjungraded school," is frequently offered as a reason for neglecting it. Such need not be the case. At the sound of the bell in the morning, at each intermission and at noon, have children form in lines for marchingthe boys in one line and the girls in another -the taller ones leading. Let them march systematically around the yard a few times, then into the school-room, having it arranged to have the girls take one passage, the boys another, and thus march through the passages in school, which has a very pretty effect when well done.

With all definite, energetic, muscular effort there must be a correspondingly energetic will power; and, whatever incites definite action, will train and strengthen the character. The desirability of having good marching, and also the necessity for making it attractive, cause us to consider how best it can be varied. Music, of course, is a delightful inspiration, and this we can

happy in the possession of a boy who can play the mouth-organ; we can quite frequently have singing or even whistling, The children enjoy this, and, to encourage your little soldiers, state your intention of stepping into the line wherever you see particularly good marching. Then you will see the heads straightened, the shoulders thrown back, and every child doing his utmost to get his teacher to walk next him. For variety, some days have motion songs or favorite calisthenics.

After intermission the juniors may be writing numbers, copying words, etc. Many ways of giving variety will doubtless suggest themselves ; while Part Second are having arithmetic in class ; afterwards giving them some arithmetic or drawing to do at seats while taking senior classes.

Next comes Writing, with Drawing on alternate days. In this respect the whole school should be engaged at once, then the teacher's undivided attention can be devoted to this important subject ; and, among senior pupils, quite likely there will be some very good writers able to assist with the little ones. Considerable inconvenience sometimes results from little children losing pencils or having very, very short ones. So I find it convenient to keep a little box of nicely sharpened pencils to distribute amongst the little ones for writing and drawing lessons, having a pupil appointed for collecting and distributing them. For drawing in all classes I also have each pupil keep a special lead pencil which is collected with the book. Now comes noon hour.

In the afternoon it is well to have a senior class first-say the Third Class; thus giving the juniors an opportunity for preparing lessons. A Fourth or Fifth Class pupil may then be sent to help juniors, and if there are one or two noticeably slow chilren it is well to have them sit with a senior pupil who will give them particular assistance. Such devices are very helpful in a large school. Then, as in the forenoon, comes the junior reading class or Language Lesson followed by seat work to impress what has been taught, while senior classes are reciting.

Now, the little ones may have a drawing lesson which invariably gives great delight. The squares on the slates, mentioned in THE EDUCATIONAL JOURNAL, are excellent for busy work in the First Book classes. A number of simple patterns or designs, using vertical and horizontal lines should be kept on the board for pupils to copy. After they can do these in their designs with facility and accuracy, oblique lines may be used. Besides doing this mechanical work have them make their own little figures and designs and great originality will be displayed. After giving a Drawing Lesson, either by dictation or copying, erase or cover the pattern and require the children to draw it from memory. Now, the time is approaching for the little ones to be dismissed -that is, at the last recess ; allowing those to go home who desire to do so, and permitting those to remain who wish to wait for brothers or sisters or older pupils. If the day is fine the little ones who remain may be allowed to play till four o'clock, or stay in school, draw pictures, build houses with

always have. It may be that the class are blocks, or fold papers in various designs, thus affording employment for the little busy hands and inventive minds. Occasionally on a warm day young children fall asleep. Place them in a comfortable position and allow them to rest, it will do them good. Before dismissing the little ones take a few minutes to tell a short story which you may have them reproduce in the morning. Sometimes the children bring books to have their teacher read them stories, and teacher and pupils often enjoy a hearty laugh. What is so refreshing as the unrestrained and unaffected laughter of children? It is well to send the children happy on their homeward journey, and thus prepare for pleasant morning greetings. The teacher may also ask them to observe what they see going home from and coming to school; or it may be desirable to have them come prepared to tell of the games they like best, and thus supply matter for the morning's talk.

#### EACH BOY FOR HIMSELF. "JOURNAL OF EDUCATION."

THERE is a suspicion that with our improved system we have lost the individual pupil amid the array of average per cents. In the elaborate parade of flattering results there is danger lest we leave no chance for a scholar to get out out of step long enough to see how far or how fast he could step if he tried. The child is ever on the march as one of a platoon, and keeps his eye on his feet lest he get out of step, and his thought on his elbow lest he fail to touch his neighbor. As a result, the class is taught to fire as a platoon without regard to the individual aim. The average shot will hit. The child will never make a sharpshooter.

Now, life work must be individual in order to be a success. The demand of the day is for teaching that develops the child in power to think independently, as though he could not average his successes and fail-ures with fifty others. Hand-picked scholars are most creditable to our system. The dullest school developed by individual labor may be made a brighter ornament to the public school idea than brilliant pupils under machine processes.\*

A Cambridge teacher once collected nearly one hundred varieties of sea mosses at Martha's Vineyard. These she preserved and arranged so carefully that they presented an array of exquisitely tinted designs, which could but arouse the envy of a master artist, who could never hope to limn such delicately outlined ideals of beauty. But how was this charming array of waving tresses of varied hues and tints arranged so exquisitely? This teacher had reached into the water and taken one of the slimy, cryptogamous plants at a time, studying the little urchin-to use the school phrase-till she knew just how it would lie naturally. Placing a card beneath it she waited patiently till it floated itself into its native form of beautiful tracery. Then, and not till then, she pressed it firmly till the moss clung affectionately and naturally to the card. Thus, day by day, she gathered one and another, till nearly one hundred adorned her album. No two of those mosses bore more resemblance to each other than rose

does to dahlia. Each had one right way for its myriad fingers to point. A plant the size of a silver dollar would have a hundred silky, spray-like branches that had to interlace themselves on precisely one design. No fingers could be deft enough to weave, those tresses in their artistic shades and tones of beauty. It was the combination of nature on the part of the freely floating moss, and of skill and patience on the part of the teacher.

Is there not room within the lines of common sense for us to suggest that the teacher needs to handle each child patiently, skilfully, knowing that there is but one way in which the intricacies of his mind can adjust themselves to the best possible advantage; that there is one way with every child, in which by following nature, placing beneath him good methods of instruction and bringing to bear upon him judicious pressure, even the lowest forms of intellectual life will attain true beauty in intellectual activity.

Educational Thought.

### THE SCHOOL OF THE FUTURE.

C. M. IN THE " ZEITUNG FUR DAS HOHERE UNTERRICHTSWESEN DEUTSCHLANDS."

"THE school of the future will be free from top to bottom. Neither in form nor in fact will it be the privilege or possession of the rich : for the state must rest upon the truth that virtue and usefulness, wherever found, are to be sought out and developed. Free instruction alone will not suffice to accomplish this. If the poverty of parents is not to be permitted to narrow, as it now does so often, the future opportunities of a child, the state must stand ready to care for him up to that time when he is able to pass an intelligent judgment upon his own prospects and provide for his own support. Up to such a time, perhaps then to the seven-teenth year of life, the state must make proper provision for the sustenance and care of every child whose parents are too poor to provide either for his material or intellectual care. The question as to the parents' poverty could readily be determined by reference to the assessments made for the purposes of taxation.

"When this comes to pass there will be a real aristocracy of the educated. One can readily see that then the German people will exercise a material and intellectual influence in the world, to which that gained mainly by force of arms will be scarcely comparable."

EVERY considerate word we utter concerning those about us, every time we give them the benefit of a doubt in our judgment of their motive, every time we take occasion to couple with our demurrer from their position some saving clause of appreciation, we are habituating ourselves to that charity which "suffereth long and is kind," that heavenly love which alone can make us meet for heavenly company .-- Miss Frances Willard

ORDER can better be secured by quiet and coolness on the part of the teacher, than by impatience and excitement.

English.

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

### LESSONS IN RHETORIC.

#### BY J. E. WETHERELL, B.A. SOME QUALITIES OF STYLE.

THE present series of Lessons in Rhetoric must conclude with a brief treatment of some of the principal Qualities of Style-Strength, Pathos, Humor, Melody and Harmony. Wit.

#### STRENGTH.

Under the general name of strength many varieties find a place : animation, vivacity, liveliness, rapidity, brilliancy; nerve, vigor, force, energy, fervor; dignity, stateliness, splendor, grandeur, magnificence, loftiness, sublimity. Between ani-mation and sublimity there is a vast difference, but they all agree in describing a cupitin of the but they all agree in describing a quality of style that produces active pleasurable emotions. The vocabulary of strength is made up of words that name powerful, vast, and exciting objects, effects and qualities

It will be noticed that the various terms given above for the different modes of strength are arranged in three groups. The three following passages will serve to illustrate three varieties of the quality under consideration.

### A.

"Neither military nor civil pomp was wanting. The avenues were lined with Grenadiers. The streets were kept clear by cavalry. The peers, robed in gold and ermine, were marshalled by the heralds under Garter King-at-arms. The judges in their vestments of state attended to give advice on points of law. Near a hundred and seventy lords, three fourths of the Upper House as the Upper House then was, walked in solemn order from their House then was, walked in solelin order non-then usual place of assembling to the tribunal. The junior baron present led the way, George Eliott, Lord Heathfield, recently ennobled for his memor-able defence of Gibraltar against the fleets and able detence of Gloranar against the neets and armies of France and Spain. The long procession was closed by the Duke of Norfolk, Earl Marshal of the realm, by the great dignitaries, and by the brothers and sons of the king. Last of all came the Drince of Wales conspicuous by his fine person the Prince of Wales, conspicuous by his fine person and noble bearing."

#### B.

So saying, she left the apartment ; and Front-de-Bœuf could hear the crash of the ponderous key as she locked and double-locked the door behind her, thus cutting off the most slender chance of escape. In the extremity of agony he should upon his ser-vants and allies—"Stephen and Saint Maur !— Clement and Giles !—I burn here unaided !—To the rescue-to the rescue, brave Bois-Guilbert, valiant De Bracy !- It is Front-de-Bœuf who calls ! It is your master, ye traitor squires !- Your ally your brother in arms, ye perjured and faithless knights !--all the curses due to traitors upon your recreant heads, do you abandon me to perish thus miserably !--They hear me not--they cannot hear me-my voice is lost in the din of battle.-The smoke rolls thicker and thicker—the fire has caught upon the floor below--Oh, for one draught of the air of heaven, were it to be purchased by instant annihilation !"

#### C.

"By the soul of Hereward !" replied the knight impatiently, "thou speakest, maiden, of thou knowest not what. Thou wouldst quench the pure light of chivalry, which alone distinguishes the noble from the base, the gentle knight from the churl and the savage; which rates our life far, far beneath the pitch of our honor; raises us victorious over pain, toil and suffering, and teaches us to fear no evil but disgrace. Thou art no Christian, Rebecca; and to thee are unknown those high feelings which swell the bosom of a noble maiden when her lover hath done some deed of emprize which sanctions his flame. Chivalry !--why, maiden, she is the nurse of pure and high affection--the stay of the oppressed, the redresser of grievances, the curb of the power of the tyrant—nobility were but an empty name without her, and liberty finds the best protection in her lance and her sword."

#### PATHOS.

The difference between strength and pathos is like the difference between motion and rest, pathos being the quality of style that produces passive pleasurable emotions - emotions that compose rather than excite the mind. The vocabulary of pathos includes all words that arouse the tender feelings of love, pity, benevolence, humanity, etc.

In the most touching instances of pathos it must be observed that we have a pitiable case put forward without any reference to help or relief of a kind strictly adapted to the case, the assuaging influences coming mainly from the verbal representation which throws the reader into a sort of pleasing

Of the following selections the first two will illus trate the quality of pathos, and the third, strength passing into pathos.

#### A.

"The knights are dust.—Their escutcheons have long mouldered from the walls of their castles. Their castles themselves are but green mounds and shattered ruins-the place that once knew them, knows them no more-nay, many a race since theirs has died out and been forgotten in the very land which they occupied, with all the authority of feudal proprietors and feudal lords. What, then, would it avail the reader to know their names, or the evanescent symbols of their martial rank !"

#### B.

'What, then, is to insure this pile which now towers above me from sharing the fate of mightier mausoleums? The time must come when its gilded vaults, which now spring so loftily, shall lie in rub-bish beneath the feet ; when, instead of the sound of melody and praise, the wind shall whistle through the broken arches, and the owl hoot from the shattered tower-when the garish sunbeam shall break into these gloomy mansions of death, and the ivy twine round the fallen column, and the foxglove hang its blossoms about the nameless urn, as if in mockery of the dead. Thus man passes away; his name perishes from record and recollection, his history is as a tale that is told, and his very monu-ment becomes a ruin !"-Washington Irving's Westminster Abbey.

#### C.

"To the memory of the brave who fought there ! --Pledge me, my guests."-He drank deep, and went on with increasing warmth. "Ay, that was a day of cleaving of shields, when a hundred banners were bent forward over the heads of the valiant, and blood flowed round like water, and death was held better than flight. A Saxon bard had called it a feast of the swords-a gathering of the eagles to the prey—the clashing of bills upon shield and helmet—the shouting of battle more joyful than the clamor of a bridal. But our bards are no more," he said; "our deeds are lost in those of another race—our language—our very name—is bastening race-our language-our very name-is hastening to decay, and none mourns for it save one solitary old man."

#### WIT AND HUMOR.

Much has been written on the distinction between Wit and Humor. Some one by a happy metaphor has tersely put the distinction thus : "Humor is the electric atmosphere, wit is the flash." Wit is most commonly produced by an ingenious or unexpected play upon words, or by some clever and fantastic mode of expression. Humor, as compared with wit, is mild and quiet, always genial, kindly and good-natured.

Some of the devices that wit employs are illustrated in the following sentences :

(a) The lady was carried home in a flood of tears and a sedan chair.

(b) Put not your trust in money, but put your money in trust.

(c) When you have nothing to say, say it.

(d) A man who has nothing to boast of but his noble ancestors is like the potato-all that is good of him is under ground,

(e) A man should not pray cream and live skim-milk.

(f) His cell had a ceiling so low that you couldn't stand up in it without lying down.

(g) Whether life is worth living or not depends on the liver.

(h) Man leads woman to the altar and there his leadership ends.

(i) The religion of the Mormons is singular, but their wives are plural.

(j) Two things I prize very highly, my husband and my lap-dog.

It will be seen, then, that wit employs the pun, the bull, the condensed sentence, the epigram, and, in short, various figures of speech.

The following extracts will serve as studies in Humor : A.

"Women are armed with fans, as men with swords, and sometimes do more execution with them. To the end therefore that ladies may be entire mistresses of the weapon which they bear, I have created an academy for the training up of young women in the exercise of the fan, according to the most fashionable airs and motions that are now practised at court. The ladies who carry fans under me are drawn up twice a day in my great hall, where they are instructed in the use of their arms, and exercised by the following words of com-

"Handle your fans, Unfurl your fans, Discharge your fans, Ground your fans, Recover your fans, Flutter your fans.

By the right observation of these few plain words of command, a woman of a tolerable genius who will apply herself diligently to her exercise for the space of but one half-year, shall be able to give her fan all the graces that can possibly enter into that little modish machine."—Addison.

The work of Dr. Nares has filled us with astonishment similar to that which Captain Lemuel Gulliver felt when first he landed in Brobdingnag, and saw corn as high as the oaks in the New Forest, thimbles as large as buckets, and wrens of the bulk of turkeys. The whole book, and every component part of it, is on a gigantic scale. The title is as long as an ordinary preface; the prefatory matter would furnish out an ordinary book; and the book would turnish out an ordinary book; and the book contains as much reading as an ordinary library. We cannot sum up the merits of the stupendous mass of paper which lies before us better than by saying that it consists of about two thousand closely printed quarto pages, that it occupies fifteen hunprinted quarto pages, that it occupies inteen num-dred inches cubic measure, and that it weighs sixty pounds avoirdupois. Such a book might, before the deluge, have been considered as hight reading by Hilpa and Shalum. But, unhappily, the life of man is now threescore years and ten ; and we cannot but think it somewhat unfair in Dr. Nares to demand from us so large a portion of so short an existence."-Macaulay.

### MELODY AND HARMONY.

Melody and Harmony are the two aesthetic qualities that have to do with sound, the former with sweetness of sound, the latter with sound as an with sweetness of sound, the latter with sound as an echo to the sense. We may have melody, then, without harmony, and even harmony without melody. The following passage from Irving's "Westminster Abbey," is one of the finest examples in the whole range of literature of pleasing melody and impressive harmony : and impressive harmony : "Súddenly the notes of the deep-laboring organ

burst upon the ear, falling with doubled and re-doubled intensity, and rolling, as it were, huge bil-lows of sound. How well do their volume and grandeur accord with this mighty building ! With what pomp do they swell through its vast vaults, and breathe their awful harmony through these caves of death, and make the silent sepulchre vocal! And now they rise in triumphant acclamation, heaving higher and higher their accordant notes, and piling sound on sound. And now they pause, and the soft voices of the choir break out into sweet gushes of melody; they soar aloft, and warble along the roof, and seem to play about these lofty vaults like the pure airs of heaven. Again the pealing organ heaves its thrilling thunders, compressing air into music, and rolling it forth upon the soul. What long-drawn cadences ! What solemn sweeping concords ! It grows more and more dense and powerful—it fills the vast pile, and seems to jar the very walls ; the ear is stunned, the senses are overwhelmed. And now it is winding up in full jubilee—it is rising from the earth to heaven—the very soul seems rapt away and floated upwards on this swelling tide of harmony !

#### LONGFELLOW RECITALS.

#### " And lend to the rhyme of the poet

The music of thy voice. IN our Canadian schools we are certainly not open to the criticism so often passed upon those across the border, that the solid and substantial are held subordinate to the superficial, and showy. Class-work goes on with pendulum-like regularity and monotony--and very rarely, indeed, is an attempt made to "show off" to an admiring public what that class-work has been accomplishing. We hide our lights modestly under our bushels, and not a ray glimmers therefrom into the darkness beyond.

Even such a charming virtue as modesty, how-ever, may be carried to such an extreme that, according to the Aristotelian criterion, it ceases to be a virtue. In the study of poetical literature, be a virtue. In the study of poetical intratic, especially, it is possible, with very little trouble, to add greatly to the interest of the students by having an occasional open meeting of the class—a meeting to which they invite their friends, or, if they are very magnanimous, the general public, to listen to songs and recitals taken from the works of the poet whom they are studying. It is merely a gathering together and putting into shape of the knowledge they have been gaining in class, but with a little care the effort may result in the presentation of a pleasing and instructive programme.

Such an experiment was tried recently by the Longfellow class of the Parkdale Collegiate Institute. That the entertainment was a decided success was proved by the sustained interest manifested by a large audience during a three-hours' programme of songs, essays, addresses and recitations. In the hands of the visitors were placed neatly-printed cards, upon which, beneath the heading, "Non Clamor, sed Amor"—the poet's well-know motto— appeared the following numbers :

#### PART I.

- Essay... { "Longfellow-Life, Travel, Friends, Home, Appearance. MISS J. STREET.
- READING...... "Paul Reeve's Ride "{ Tales of a Way-side Inn. MR. A. J. TOYE.
- Song..... "The Day is Done"  $\begin{cases} From \ Longfellow's \\ Songs. \end{cases}$ MISS C. GRAY.
- ESSAY..... "Stars of the Summer Night "{ The Spanish Student.

MESSRS. SHAW, STURROCK, SHAVER, SCOTT. PART II.

- READING...... "The Famine "....... Hiawatha. MISS LILLIAN CARRUTHERS.
- Essay... { "Longfellow's Relation to Nature, Humanity, Country and God."

#### MR. H. HEWISH.

Song......" The Village Blacksmith ". ..... Weiss. Mr. R. Shaw.

- READING..... "King Robert of Sicily "{ Tales of a Way-side Inn.
- MR. W. J. THOROLD.
- PART SONG.... "Good Night, Beloved " { The Spanish Student MISSES WILSON, SCOTT, CLARK, DUDLEY; MESSRS. SHAVER, HOIDGE, STURROCK, SCOTT, SHAW.
- On the outside of the card was a recognizable cut

of Longfellow, and the following Shakespearian sonnet, written, it would seem, by some pensive maiden member of the class and devotee of the poet :

#### LONGFELLOW.

Sweet is it, when the twilight shadows gray Have veiled the earth and glory of the skies, And we, aweary with the heat of day, At length fold tired hands, close tired eyes; Sweet, then, it is to hear some even-song Sung clear and low by soft-voiced singer near. Thou art our twilight singer, thou amon The tuneful bards dost sing so soft and clear, So clear and low, thou poet of our west, That when aweary of the ceaseless fret And turmoil of our lives, we fain would rest, And for a little happy space forget,— We sit apart and listen to thy song. Till we are glad again, again are strong.

BE firm ! One constant element in luck Is genuine, solid, old Teutonic pluck.

### TASTE IN THE CHOICE OF WORDS.

(Continued from last issue).

word.	WRONG SENSE.	RIGHT SENSE.
21. Character	This will ruin his character [repu- tation] for truth-telling. The servant asked his mis- tressfor acharac- ter [certificate of character or conduct; testi- monial].	His character — dis- position— remained unchanged though h i s reputation— what people thought of him—was affect- ed.
22. Citizen	Several citizens [persons, men] helped the suf- ferer home.	In municipal elections only citizens are entitled to vote.
23. Contemp ible		ing contempt — to act thus.
24. Demean	He would not demean[humble] himself by an apology.	

(To be continued).

# Book Roliges, elc.

Principles of the Algebra of Logic, with Examples. By Alex. McFarlane, M.A., D.Sc., etc. Edinburgh : David Douglas. 1879. pp. 155.

This is an elementary treatise on the science of formal reasoning, developed on the lines laid down by De Morgan and Boole. The writer has succeeded in producing a consistent application of symbolic language to the processes of Logic, which must prove extremely interesting to every student of mental or of mathematical science. His methods seem to bear much the same relation to the Aristotelian, that the methods of analytical geometry bear to the Euclidean. Brevity, precision, and comprehensiveness mark the procedure. The Aristotelian forms of reference are exhibited in a few pages.

#### Arithmetic. By J. B. Locke, M.A. American edition. Macmillan & Co., N.Y.

Mr. Locke's excellent books in Trigonometry. etc., are well known. This book has been adapted to American currency, and ought to prove useful in the junior classes of our High Schools. It seems to be precisely adapted to the junior leaving course, being less difficult than the High School Arith-metic, and containing between 3,000 and 4,000 examples.

#### Lessons in Industrial Drawing. By Mary Isabel Gilmore.

This work, issued by the Educational Publishing Company of Boston, is one of Ball's admirable text-books. Beginning with the elementary work text-books. Beginning with the elementary work of paper-folding, stick-laying and form-study, the work advances by easy steps to the study of per-spective and ornamental design. The convention-alizing of natural forms receives a large share of attention, as also the laws governing geometric arrangement. One feature of the book deserving especial commendation is a series of distribution especial commendation is a series of dictation exercises which are doubtless of the greatest value in cultivating the memory with reference to form and method of construction. Through the use of these the pupils become familiarized with the methods of arrangement, the value of repetition and symmetry, and are able to draw as well from impressions received through the medium of the ear as the eye. The definitions scattered throughout the book, and summarized in the last few pages, are simple, concise, and easily remembered.

A BEAUTIFUL behavior is better than a beautiful form; it gives higher pleasure than statues and pictures. It is the finest of the arts.—*Emerson*.

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# Educational Meetings.

#### NORTH HASTINGS TEACHERS' INSTITUTE.

THE members of this Institute met in the Model School building, on the 21st and 22nd ult. Nearly all the teachers of the riding were present—some coming a distance of about eighty miles.

#### THURSDAY, IO A.M.

After the reading of the minutes of the annual meeting for 1890, and of the special meeting of 1891, reports of committees, treasurer and libra-rian, were received and adopted. Meeting then adjourned till 2 p.m.

#### AFTERNOON SESSION.

After the roll call, Mr. Sage, of Stirling P. S., briefly outlined his method of teaching the "Sen-tence and Its Analysis," after which, C. A. Meikle-john, of Bridgewater P.S., discussed "Naming Words and Their Class," and J. T. Clark took up the subject, "The Verb and Its Classes." Mr. Johnson, I.P.S., South Hastings, addressed the teachers on "School Management." His re-marks were pointed and practical, and doubtless teachers on "School Management." His re-marks were pointed and practical, and doubtless will be productive of much good. Topics touched upon were :-- Teaching of Primary Classes, Spell-ing and Writing-- the latter subject not receiving mouse attention. Arithmetic Homework this enough attention-Arithmetic, Home-work-this should be done neatly with pen and ink-Reviews Friday Afternoon exercises. These exercises should be of an interesting nature to relieve the monotony of school work. He strongly advised teachers to have at least two public examinations each year.

#### EVENING SESSION.

Joseph Reid, M.A., LL.B., of Stirling H.S., gave an eloquent address on "How to Make School Life Pleasant to Teacher and Pupil." He held his audience spell-bound for about forty-five minutes, dilating upon the necessity of teachers being models in neatness and deportment to their pupils, and upon the necessity of being cheerful and patient and upon the necessity of being cheerin and patient at all times, using the rod sparingly, and always appealing to the best nature of the pupil. Mr. Brown, I.P.S. for Peterboro', then took up the subject of "Literature," which he discussed at

some length. He would make the pupils acquainted as early as possible with the lives of the chief authors, and lead them to admire the good and beautiful in their works. He was listened to with marked attention, and great interest was taken in his remarks.

#### FRIDAY FORENOON.

After roll call, Mr. Peter Smith, Principal of the Model School, took up the subject of "Modifiers," and discussed it at some length. Mr. W. Scott, B.A., of the Ottawa Normal

School, then gave an able and interesting address on "The Elements of the Teacher's Power." In this short account it would be impossible to do justice to his address. It was practical and helpful. In the afternoon he again addressed the Institute on "Induction and Deduction in Teach-ing." The addresses were worthy of the man, and fully repaid the close attention of one and all who

fully repaid the close attention of one and an who listened to him. Miss McRae, of the Belleville H.S., read an excellent paper on "Drawing." She illustrated many of her remarks by clever drawings on the blackboard, and many excellent hints were thrown out for the proper teaching of this much-neglected subject.

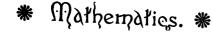
subject. Miss Chapman, of the Model School, read a` well-prepared essay on "Literature," which showed a thorough acquaintance with the most advanced methods of dealing with this difficult subject. Mr. Simmons, of Stirling H.S., discussed the teaching of "History." Mr. S. is not an orator, but he thoroughly understands the aim of teaching Uitters and made it clear to those present

History, and made it clear to those present.

Stirling is to be congratulated on possessing two such worthy men in her High School, and the N. H.T.I. will be always glad to meet with them.

Officers for 1891 are as follows :--President, N. Macintosh, Esq., I.P.S.; Secretary, Peter Smith, Madoc, Ont.; Treasurer, J. B. Morton.

THE schools hastily substitute an artificial method of words for the truer method of nature, which knows no hurry, but waits.—Pestalozzi.



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

I. Divide 
$$\frac{a-1}{a} + \frac{b-1}{b} + \frac{c-1}{c} - 1$$
 by  
 $2 - \left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right)$  Ans. 1.

Prove that  $x^n - y^n$  is exactly divisible by x - y for all positive values of n as an integer. Book-work.

Utilize the theorem to find whether  $x^n + y^n$  is divisible by x-y. N.B.—Write y for x in  $x^n + y^n$ and we see that the remainder  $= 2y^n$  for every +ve integral value of n.

From the result of  $(x^3 - y^3) \div (x - y)$  write out the quotient of  $(a - 2bc^{\frac{1}{2}} + d)^3 - 125(a+d)^3$  by

 $(a - 2bc^{\frac{1}{2}}+d) - 5(a+d)$ . N.B.—In the quotient

$$(x + y)^2 - xy$$
 substitute, thus :--

$$(x+y)^2 = \langle 6(a+d) - 2bc^2 \rangle^2$$

$$xy = 5(a+d)^2 - 10bc^{\frac{1}{2}}(a+d)$$
 etc.

Ans.--31  $(a+d)^2+4b^2c - 2bc^{\frac{1}{2}}(a+d)$ .

- 2. Factor 3ac(d-c) + 3cb(3c 3d) + 3ab(c-d) $+a^{2}(d-c);$ and  $x^{3}y + x^{2}yz + x^{3}z - xy^{3} - zy^{3} - xzy^{2}$
- ANS.-(c-d)(a+3c)(3b-a)and  $(x^2 - y^2)(xy + yz + zx)$

$$x(y+z-x)$$

3. Simplify  $\frac{(x-y)(x-z)}{(x-y)(x-z)} + 2$  similar fractions.

N.B.—Ist fraction = 
$$-1 - \frac{yz}{(x-y)(y-z)}$$

∴ sum = 
$$-3 - \frac{1}{2} yz(y-z) + etc.$$
   
 $z - x) = -3 - 1 = -4.$ 

(2) 
$$\frac{a^n + b^n - a^{-n} - b^{-n}}{a^n b^n - a^{-n} b^{-n}} + \frac{(a^{\frac{n}{2}} - a^{-\frac{n}{2}})(b^{\frac{n}{2}} - b^{-\frac{n}{2}})}{a^{\frac{n}{2}}b^{\frac{n}{2}} + a^{-\frac{n}{2}}b^{-\frac{n}{2}}}$$

N.B.—1st fraction =  $(a^n b^n - I) \div (a^n b^n + I)$ 2nd " =  $(a^n b^n + I - a^n - b^n) \div (n)$  $\operatorname{Sum} = -(\mathbf{a}^n - \mathbf{b}^n)^2 \div \mathbf{a}^n \mathbf{b}^n + \mathbf{1}$ 4. Show that

(1) 
$$z+y=0$$
, if  $\frac{x}{b-a} = \frac{y}{c-b} = \frac{z}{b-c}$   
(2)  $\frac{A^2}{a^2} + \frac{B^2}{b^2} + \frac{C^2}{c^2} = \frac{A^2 + B^2 + C^2}{x^2 + y^2 + z^2}$  if  $\frac{A}{x} = \frac{B}{y} = \frac{C}{z}$   
and  $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$ .

N.B.—In (1) any one fraction =  $\frac{y+z}{z}$ 

$$y + z =$$
fraction  $x_0 - 0$ 

In (2) 
$$\frac{A^2}{x^2} = \frac{B^2}{y^2} = \frac{C^2}{z^2} = \frac{A^2 + B^2 + C^2}{x^2 + y^2 + z^2}$$
. Multiply

this into the second relation, term by term.

5. A and B were travelling on the same road toward Toronto, A at the rate of a miles, B at the rate of b miles per hour. At noon A was m miles and at 6 p.m. B was n miles from Toronto. Find how many hours from noon A passed B, a being greater than b. Interpret the result when m=40, a=5, b=3 and n=26; also when n=18.

N.B.—At noon B was n + 6b miles from Toronto, distance between A and B was = m - (n+6b); .. distance between A and B was = m (n+60); and difference of rates = a-b; ... time required to pass B =  $\{m (n+6\delta) \} + (a-\delta)$ . In the first case we get by substitution, time = -2, *i.e.*, A had already passed B, viz., at 10 o'clock a.m. In the second case, time = 2, *i.e.*, A passed B at 2 o'clock

(1) xyz = a(yz - zx - xy) = b(zx - xy - yz) = c(xy - yz - zx).

(2) 
$$(a+b)^{2}y + \frac{f \langle (c+d)^{3} - (a+b)^{3} \rangle}{(a+b)(c+d)} = \frac{2(a+b)^{3}}{(c+d)^{3}}$$

Combine

$$(a+b)(c+d)x = (c+d)y - 2(a+b)$$

N.B. 
$$-\frac{1}{a} = \frac{1}{x} - \frac{1}{y} - \frac{1}{z}$$
; etc., etc.

these two and two we get  $\frac{2}{x} = -\frac{1}{b} - \frac{1}{c}$ ;

whence  $x = -\frac{2bc}{b+c}$ , y and z by symmetry.

- In (2) write m for a + b and n for c + d and 1st equation becomes  $m^4nx - m^3ny = -2m^4$
- 2nd 46- $-mn^4x + m^3ny = 2m^4 + f(m^3 - n^3)$ Adding etc.  $x=f \div mn = f \div (a+b)(c+d)$ ;

and  $y = (f + 2m) \div n = etc.$ 

7. Solve (1) 
$$x^2 - 4x + 3 - 7 \sqrt{x^2 - 9x - 6} = 5x - 3$$
  
(2)  $2x^2 - xy = 6$  and  $2y^2 - 3yy = 8$ 

In (1) transpose 5x - 3 and add and subtract 12 and we get the form  $m^2 - 7m + 12 = 0$ , etc.

In (2) put y = vx; or put x = m + n, y = m - n.

From the former method we get 4(2-v)=3( $2v^{2}-3v$ ) from which v can be found; by the latter method  $4n^2 = 7$ , from which m can be found

8. Investigate the relations of the roots of  $ax^2 +$ bx+c=o to the coefficients.

Find what values of m will give equal roots to  $x^{2} - 3(2+m)x + 9(5+m) = 0$ 

and solve the equation in each case.

N.B.-Part I, book-work Part 2, roots are real and equal when  $b^2 = 4ac$ , *i.e.*, in this case when  $9(2+m)^2 = 36(5+m)$ , *i.e.*, when  $m = \pm 4$ .

The equations to be solved are therefore

 $x^2 - 18x + 81 = 0$  and  $x^2 + 6x + 9 = 0$  of which the equal roots are 9 and -3.

9. Using the relations referred to in the first part of question 8, determine what values of the fraction  $\frac{x^2 + 4x - 16}{x - 4}$  will make x imaginary.

N.B.—Fraction = 
$$4 + \frac{x^2}{x-4}$$
. Put  $\frac{x^2}{x-4} = K$ , and

we have  $x^2 - Kx + 4K = 0$ . If x is to be imaginary we must have K(K - 16) negative; *i.e.*, the factors must have opposite signs. Hence

if K<0, K-16>0, or K>16

or if K>0, K-16 < 0, *i.e.*, K < 16. Taking the latter relation we see that K must lie between 0 and 16, ... fraction lies between 4 and 20.

10. From the expansion of  $(x+y)^2$  deduce the rule for extracting the sq. root of numbers. Find the a

Determine for what values of a and b the expression  $x^{6} + 24x^{5} + ax^{4} + bx^{3} - 31x^{2} + 70x + 49$  is a perfect square.

N.B.—Book-work. In (2) let  $\sqrt{x} - \sqrt{y}$  be the required root.

: x + y = -11, and  $-2\sqrt{xy} = -60\sqrt{-1}$  etc.

In (3) If the expression is a perfect square, we see by inspection that the root must be  $x^3 + 12x^2 +$ 5x+7. Square this and equate the coefficients; a = 144 + 10, b + 14 + 120.

Remark -- There is evidently a misprint in 31x<sup>2</sup> unless the problem is intended to be impossible. In case  $-31x^3$  is correct, there are values of a and b that will satisfy the conditions. -31x<sup>2</sup> is correct, there are no

11. A man divides \$1,300 into two sums and 11. A man divides  $\mathfrak{P}_{1,300}$  into two sums and lends them at different rates of interest. He finds the incomes from them to be equal. If he had loaned the first at the rate of the second he would have received \$36, and the second at the rate of the first he would have obtained \$49. Find the

N.B.—If  $P_1$  and  $P_2$  are the principals, and  $r_1$ ,  $r_2$  the rates per unit, we have  $P_1r_1 = P_2r_2$ ;  $P_1r_2 = 36$ ;  $P_2r_1 = 49$ ; whence

$$\frac{P_1}{P_2} = \frac{r_1}{r} = \frac{49r_2}{26r} \cdot \frac{r_1}{r} = \frac{7}{2} = \frac{P_1}{P_1}$$

$$1 P + P$$

But  $P_1 + P_2 = 1300$ ;  $\therefore P_1 = 700$ ,  $P_2 = 600$ . 12. Define "Surds," "Imaginary Quantities," and "Conjugate Complex quantities."

Give the value of  $(1 + \sqrt{-1})^8$ 

Find the rationalizing factor of any binomial surd in the form  $x^{\frac{1}{b}} + y^{\frac{1}{d}}$ ; and apply the result

to the example  $x^{\frac{2}{3}} + (y+z)^{\frac{3}{5}}$ .

Book-work.  $(I - \sqrt{-I})^2 = 2\sqrt{-I}$ , and the square of this = -4,  $\therefore$  expression = I6.

Part (3).  $x^{\frac{a}{b}} + y^{\frac{a}{d}} = x^{\frac{ad}{bd}} + y^{\frac{bc}{bd}}$ . Take, then,  $x^{ad} + y^{bc}$ , divide this by the given expression, and set down the quotient which will be the rationalizing factor. For convenience write m for  $\frac{a}{b}$  and m for  $\frac{c}{d}$  and we have  $x^{ad} + y^{bc} =$ 

 $(x^{m}+y^{n})(x^{m(bd-1)}-x^{m(bd-2)}, y+etc.-y^{n(bc-1)})$ 

$$(x^{\overline{3}})^{14} - (x^{\overline{3}})^{13}(y+z)^{\overline{5}} + (x^{\overline{3}})^{12}(y+z)^{\overline{5}} - \text{etc.}$$

# UNIVERSITY OF TORONTO, JULY, 1890.

# JUNIOR MATRICULATION, HONORS.

(FIRST C.)

1. Find the roots of the equation  $ax^2 + bx + c = 0$ . Book-work.

- Find the condition (1) that the roots may be equal in magnitude and opposite in sign. ANS. b=o; the roots are  $\pm$  sq. root of  $-c \div a$ ;
- (2) that they may be reciprocals. ANS. c=a; (3) that one root may be *n* times the other. ANS.—The condition is  $c=nb^2 \div a(n+1)^2$
- 2. What is meant by the limit of a number of quantities in a decreasing geometrical progression? Book-work.

Obtain an expression for the value of this limit. Book-work.

Find the sum of the products, two together, of the terms of the infinite series a, ar, ar<sup>2</sup>, etc.

ANS.—These products will be

- $a^{2}r + a^{2}r^{2} + a^{2}r^{3} + etc.$  ad inf.
- $a^{2}r^{3} + a^{2}r^{4} + a^{2}r^{5} + etc.$  "
- $a^{2}r^{5} + a^{2}r^{6} + a^{2}r^{7} + etc....$
- of which the sum =  $\frac{a^2}{1-r}$  (r+r<sup>3</sup>+etc. ad inf.) =  $a^2r \div (1-r)(1-r^2)$

3. Find the number of combinations of n things taken r at a time. Book-work.

Find the number of ways in which m+n+pthings can be divided into three groups containing respectively m, n, p things.

ANS.  $-\underline{|m+n+p} \div \underline{|m}$ .  $\underline{|n}$ .  $\underline{|p}$ . See High School Algebra II. Section 248.

If the m+n+p things are colored, *m* yellow, *n* blue and p red, in how many ways can it be done? ANS.—The preceding result divided by |3|.

4. Assuming the Binomial Theorem for any positive index, prove it when the index is negative. Book-work.

Find the simplest form of the general term in the expansion when the index is (1) a negative whole number, (2) a negative fraction. Book-work. See High School Algebra II. p. 292 and p. 291. The results are

(1)  $\frac{|n+r-1|}{r} \div \frac{|n-1|}{r} \cdot \frac{|r|}{r} \times x^r$  and

(2)  $\mathbf{x}^r \cdot \mathbf{p}(\mathbf{p}+\mathbf{q}) \dots (\mathbf{p}+\mathbf{r}-\mathbf{i}\div |\mathbf{r}| \mathbf{q}^r$ 

ordinary quadratic. (b)  $yz = c^2 - zx + ax + ay$  $=b^2-z^2+ay+az$ 

and

Show that there will be an infinite number of terms in the expansion of  $(1 + x)^n$  except when n is a positive integer. Book-work. See H. S. Algebra II. Section 274.

5. Solve the equations (a)  $(x^{6} - x^{5} - x^{3} - x - 1)$ ;  $(x^{2} - x - 1) = 4x^{2}$ 

 $=a^2-y^2-xy-xz$ . We have

 $(z-a)(x+y) = c^{2}; (z-a)(y+z) = b^{2}; (x+y)(y+z) = a^{2}$ 

(z-a)(x+y)(y+z) = abc;  $\therefore y+z = ab \div c$ , etc.

Multiply the three together and take the sq. root,

Complete the division, and  $x^4 - 2x^2 + 1 = x^2$ , and

6. Form the equation whose roots are p and q where

 $p = \alpha^2 + \beta^2 = \alpha^2 \beta^2 q$ , and  $\alpha$  and  $\beta$  are the roots of  $ax^2 + bx + c = 0$ .

From the conditions  $p = (b^2 - 2ac) \div a^2$  $q = (" ") \div c^2,$ Substitute these values and

 $(a^{2}x-b^{2}+2ac)(c^{2}x-b^{2}+2ac)=0$ 

If m and n are the roots of  $x^2 + x + i = 0$  show that  $(1-m+n)(1-m^2+n^2)(1-m^4+n^4).....2a$  factors  $=2^{2a}$ ; and that m, m<sup>2</sup>. m<sup>4</sup>...2a factors = 1

We have *m* and  $n = \frac{1}{2}(-1 \pm \sqrt{-3})$  See H. Sch. Algebra, II. p. 158, p. 160 and p. 166.

7. Find the first factor and the sum of the fac-tors in the n<sup>th</sup> term of the series. I. +3.5+7.9.11+13.15.17.19+etc. Book-

work. See H. Sch. Algebra, II. pp. 66, 82 and 103 for

similar questions. The  $n^{th}$  term has *n* factors ; the last factor is the

 $\frac{1}{2}(n+1)^{th}$  from the beginning; the first factor of the n<sup>th</sup> term is therefore the

$$\left\{\frac{n}{2}(n+1)-(n-1)\right\}^{th} \frac{1}{2} (n^2-n+2)^{th}$$

from the beginning

: this factor =  $n^2 - n + I$ Now  $1+3+5+...n=n^2$ ; hence sum of  $\frac{n}{2}(n+1)$ 

factors =  $\frac{n^2}{4}$   $(n + \tau)^2$ . And the sum of all but the

last *n* factors, *i.e.*, the sum of  $\frac{n}{2}(n-1)$  factors =

 $\frac{n^2}{4}(n-1)^2, \quad \therefore \text{ the sum of the last } n \text{ factors} =$ 

$$\frac{n^2}{4}(n+1)^2 - \frac{n^2}{4}(n-1)^2 = n^3.$$

N.B.-These results might be written down by inspection of the series, but perhaps the answer would not receive full value without the actual work.

If 
$$S = \frac{I}{I^n} + \frac{I}{2^n} + \frac{I}{3^n} + etc. ad inf.$$

Show that

$$S(I-2^{-n}) = \frac{I}{I^n} + \frac{I}{3^n} + \frac{I}{5^n} + etc. ad inf.$$

We see that

 $\frac{S}{2^{n}} = \frac{I}{2^{n}} + \frac{I}{4^{n}} + \frac{I}{6^{n}} + \text{etc. ad inf.}$ 

Subtract the result from the given series and the

alternate terms cancel, and  $S(1-2^{-n}) = \frac{I}{I^n} + \frac{I}{3^n}$ 

+etc. 8. Describe the method known as mathematical induction. To what class of theorems can it be applied? In what respects is it unsatisfactory? See H. S. Algebra II. p. 262 et seqq.

Employ this method to show (1) that the sum of  $1^3+2^3+\ldots$ ,  $n^3$  = the square of the sum of  $1+2+3+\ldots$ , n. H. S. Algebra p. 265, No. 2.

(2) that  $6(3^n - 2^n) =$  sum of the series whose n<sup>th</sup> term is  $4 \cdot 3^n - 3 \cdot 2^n$ .

By giving n the successive values 1, 2, 3, etc., we get the series. Assume the given series = the given sum; add one more term to the n given terms, *i.e.*, the  $(n+1)^{th}$  term, viz.,  $4 \cdot 3^{n+1} - 3 \cdot 2^{n+1}$ . The sum will then be

 $(6.3^n - 6.2^n) + (4.3^{n+1} - 3.2^{n+1})$ , and this is by addition =  $6(3^{n+1} - 2^{n+1})$ . Thus when the law holds for n it holds for n + 1, etc., etc.

9. Find the sum of the squares of the coefficients in the expansion of  $(1+x)^n$ , when n is a positive integer.

Book-work. H. Sch. Algebra, p. 280.

Employ the binomial theorem to find to find the sum of *n* terms of the series  $1 \cdot 2 + 2 \cdot 3 + 3 \cdot 4 + \text{etc.}$ 

 $(1-x)^{-3}$ .  $(1-x)^{-1} = (1-x)^{-4}$ . Expand, multiply the series on the left and equate the coefficients of xn-i.

 $Sum = \frac{n}{3}(n+1)(n+2)$ 

10. If 
$$n$$
 is a positive integer then

 $(9 + 4\sqrt{5})^n = 1 \div d$ , where d is the difference

between  $(9+4\sqrt{5})^n$  and the next greater integer. See H. S. Algebra, p. 301.

 $(9 + 4\sqrt{5})(9 - 4\sqrt{5}) = 1$ 

 $\therefore (9 + 4\sqrt{5})^n (9 - 4\sqrt{5})^n = I = A.B. \text{ say}$  $\therefore A = I \div B. \text{ But } A + B = \text{ an even number}$ which is the next above  $A \therefore B = D$  as defined above 📜 etc.

Express  $\sqrt{2}$  in a series whose general term is 2N

 $\sqrt{2} = (1 - \frac{1}{2})^{-\frac{1}{2}}$  of which the general term =

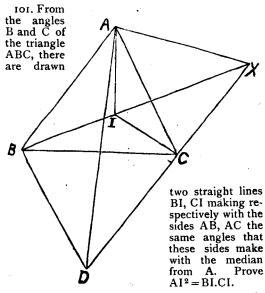
 $\frac{I}{2^n} \cdot \frac{I \cdot 3 \cdot 5 \dots (2n-I)}{\frac{|n|}{2^n}}$ 

Multiply numerator and denominator by 2<sup>n</sup> in.

11. Find the number of homogeneous products or r dimensions that can be formed out of the nletters a, b, c, and their powers. Book-work. See H. S. Algebra, p. 305.

#### PROBLEMS AND SOLUTIONS.

N.B.-The following selected examples with solutions are suitable for trial questions of about the same difficulty as those usually set for Junior Matri-culation with Honors.



SOLUTION.—Complete the parallelogram CABD, and let the circle ABD meet DC at X; then BX, AD are equally inclined to AB, hence BX passes through I; also

 $\angle AXI = ADB = DAC = ACI$ ; therefore A, X, C, I are concyclic. Thus  $\angle IAC = IXC = ABT$ 

$$\angle ICA = DAC = BAI;$$

hence the triangles BIA, AIC are similar, BI : IA = IA : IC, etc.

[AI is a symmedian, and BA touches the circle IAXC; hence

 $BA^2 = BI \cdot BX = BI \cdot AD$ ,

 $CA^2 = CI \cdot AD,$ 

BA.CA = AI.AD;therefore I is the mid-point of the symmedian chord of the circumcircle].

102. If R be the radius of the circumscribed circle about a triangle and d,  $d_1$ ,  $d_2$ ,  $d_3$  the dis-tances of its centre from the escribed centres, prove that  $d^2 + d_1^2 + d_2^2 + d_3^2 = 12R^2$ .

SOLUTION.—It is known that  $d^2 = R^2 - 2Rr$ ;  $d_1^2 = R^2 + 2Rr$ , etc., whence adding and remembering that r,  $+r_2+r_3-r=4$  R, we get the required result.

103. The sum of  $n^2$  terms of *n* arithmetical progressions, 1, 3, 5, etc.; 1, 5, 9....etc.; 1, 7, 13.... etc., each composed of *n* terms, 1s expressed by a triangular number.

SOLUTION.—There are n terms in each series, hence n<sup>2</sup> terms in all; and the sums of the separate series in order are  $n^2$ , n(2n-1), n(3n-2), etc., etc., to *n* terms. Hence the sum total of all is

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 $=n^{2}(1+2+, \text{ etc.}, \text{ to } n \text{ terms}) - n(1+2+, \text{ etc.}, \text{ to})$ n - 1 terms).

 $=\frac{1}{2}n^2$ , n(n+1) $-\frac{1}{2}n^2$ (n-1) $=\frac{1}{2}n^2$ (n<sup>2</sup>+1),which is a triangular number.

104. In a triangle ABC having its sides in arithmetical progression, show that the greater angle A is connected with the lesser angle C by the relation.

 $4 (1 - \cos A) (1 - \cos C) = \cos A + \cos C.$ 

SOLUTION by R. KNOWLES, B.A.

Let a=c+2d, b=c+d, then

Let a = c + 2d, b = c + d, then  $1 - \cos A = (c + 3d) \div 2c$ .  $1 - \cos C = (c - d) \div 2(c + 2d)$ ; and  $\cos A + \cos C = (a + c)(b + a - c)b + c - a) \div 2abc$ .  $= (c - d)(c + 3d) \div c (c + 2d)$ ; whence the result.

105. Eliminate t from the equations.

 $(2t^4 - t^2 + 1) x + (2t^5 - 2t^3 + t) y = 4at^4 (i).$  $(t^4 - t^2 + 2) tx - (t^4 - 2t^2 + 2) y = 4at (ii).$ 

SOLUTION. -(i)+t(ii) gives ty  $(t^2-I)+x(t^4+I)$ =4 at<sup>2</sup> (iii).

t (i)-(ii) gives y  $(2t^4-3t^2+2) + tx (t^2-1) = 4at (t^2-1) (1v).$ 

Eliminating x and y from (iii). and (iv). we have  $y(t^4 - t^2 + I) = 2at(t^3 - I)$  (v).  $x(t^4 - t^2 + I) = 2at^2$  (vi).

$$x(t^4 - t^2 + I) = 2at^2$$
 (v

Whence  $y \div x = (t^2 - I) \div t = t - I/t = z$ , say.

Now (v). and (vi). may be ritten y  $(z^2 + I) = 2az$ . and  $x(z^2 + I) = 2az$ .

Whence  $x^2 + y^2 = 2ax$  (vii.), etc., etc.

106. Find the relation that must subsist among the coefficients of the cubic equation  $x^3 + ax^2 + bx + c = o$  in order that it may be solvable by a simple quadratic method.

SOLUTION .- The equation can be depressed to a quadratic by factoring if (i). a = c/b, *i.e.*, ab - c = oor (ii). if  $c_3^1 = b/a$ , *i.e.*,  $ac^3 - b^3 = o$ . The required condition is therefore  $a^4bc - a^3c^3 - ab^4 + b^3c = o$ . If a=c=p, and b=q, this becomes  $(q-1)(p^4-q^3)$ =0.

107. Solve the equation :

x<sup>6</sup> + 378x<sup>5</sup> + 38189x<sup>4</sup> + 492368x<sup>3</sup> - 572554 × <sup>2</sup> + 213720x - 26352 = 0.

SOLUTION.—Let  $x = \frac{1}{3}y$ ; multiply through by  $3^6$ , and put  $y = y_1 + 1.1$ , and thereafter  $y_1 = 10 \div z$ , then multiply  $10^6$ , and divide by  $z^3$  and the equa-tion assumes the form.

 $(Z^3 - Z^{-3}) + 11406(Z^2 + Z^{-2}) + 34995615(Z + Z^{-1})$ + 14819968420=0.

Now put  $z+z^{-1}=w$ , and transpose so as to complete w<sup>3</sup> and w<sup>2</sup> and

 $w^3 + 11406w^2 + 34995612w + 14819945608 = 0.$ 

Or (w + 5902)(w + 5002)(w + 502) = 0.

Whence three values of w, from which x may be obtained.

N.B.-A number of communications are held over for a future issue.

# For Friday Afternoon.

THE CATS' CONSULTATION.

Pussy with the long claws, she made this remark, I shall eat the mousie up because my nose is dark.

Pussy with the long claws curled with pride her

And I'll hold mousie tight, Then within my strong jaws

Heard all that was said, Felt her limbs shake with affright,

Thought she'd soon be dead. But time may be wasted, if cats have much to say,

How far that little candle throws its beams !

So shines a good deed in a naughty world.

ALL the cats consulted !

What was it about?

Running in and out.

You can only snip snap, I'm the one to grip, And I'll stretch out my long claws,

Whisk her out of sight.

And while they consulted mousie ran away.

Little mousie listened,

lip,

How to catch a little mousie

 $<sup>\</sup>frac{1}{8^n}$   $\cdot$   $\frac{1}{|n|}$ 

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Editor

#### J. E. WELLS, M.A.

J. E. WELLS, M.A. Eastor. Terms: --One dollar and fifty cents per annum, payable strictly in advance. Clubs of three, \$4.25; clubs of five, \$6.75. Larger clubs, in associations, sent through association officials, \$1.25. 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.

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NOTICE

As many people, either thoughtlessly or carelessly take papers rom the Post Office regularly for some time, and then notify the publishers that they do not wish to take them, thus subjecting the publishers to considerable loss, inasmuch as the papers are sent regularly to the addresses in good faith on the supposition that those removing them from the Post Office wish to receive them regularly, it is right that we should state what is the LAW in the matter.

in the matter. In the two thouses are what is the LAW 1. Any person who regularly removes from the Post Office a periodical publication addressed to him, by so doing makes him-self in law a subscriber to the paper, and is responsible to the publisher for its price until such time as all arrears are paid. 2. Refusing to take the paper from the Post Office, or requesting the Postmaster to return it, or notifying the publishers to discon-tinue sending it, does not stop the liability of the person who has been regularly receiving it, but this liability continues until all arrears are paid.

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TORONTO, CANADA.

T. G. WILSON. Manager.

Editorials. \* TORONTO, JULY 1, 1891.

PREVENTION OF TRUANCY. NHE facts brought out in successive reports of the Minister of Education, during the last few years, in respect to the large numbers of children of school age in Ontario who have failed to attend school for even the poor minimum of one hundred days in the year, have shewn the imperative necessity that more vigorous measures should be taken to protect the interests of the neglected children and of the public. Hence the introduction and enactment at the late session of the Legislature of "An Act Respecting Truancy and Compulsory School Attendance." A copy of that Act is now before us. Among its most noteworthy provisions are the following :

" It is required that all children between eight and fourteen years of age shall attend school for the full term during which the school of the section or municipality in which they reside is open each year, unless excused for satisfactory reasons. These reasons, as specified, are : efficient home instruction ; inability through sickness or other unavoidable cause ; the absence of a school within two miles, in the case of chil-

dren under ten, or within three miles in the case of those over that age; the want of accommodation in the school which the child has a right to attend; an excuse granted by a Justice of the Peace, or by the Principal of the school which the child is entitled to attend. Such Justice of the Peace or school Principal may, by a certificate setting forth the reasons therefor, relieve a child from attendance at school for any period not exceeding six weeks during each school term, when, in the opinion of such Magistrate or Principal, the services of such child are required at husbandry, or in urgent and necessary household duties, or for his own necessary maintenance, or of some person dependent upon him. The law is very properly relaxed in the case of a pupil who has passed the Entrance Examination to High Schools."

In keeping with the foregoing provisions it is made an unlawful act, punishable by a fine of twenty dollars for each offence, for any person to employ any child under fourteen years of age during school hours, while the school of the municipality in which the child resides is in session. It is further specially and wisely provided that "any child between eight and fourteen years of age who has been expelled from school for vicious and immoral conduct may, on the same being proven before the proper court, be sent to an Industrial School, as the Court may, in its discretion, deem expedient, subject to the provisions of the Act Respecting Industrial Schools.

As to the main point, that of the means adopted for the enforcement of the foregoing provisions, Sect. 7 provides that :

The Police Commissioners, or in cases when there are no Police Commissioners, the Municipal Council of every city, town and incorporated village shall appoint one or more persons to act as truant officers for the enforcement of this Act. The truant officer shall, for the purposes of this Act, be vested with police powers, and shall have authority to enter factories, workshops, stores and all other places where children may be employed, and shall perform such services as may be deemed necessary for the enforcement of this Act.

The authorities appointing the truant officer are empowered to make regulations directing him in the performance of his duties, subject to the provisions of the Act, and the approval of the Education Department. Section 8 reads as follows :

It shall be the duty of truant officers to examine into all cases of truancy when any such come before their notice, or when requested to do so by the inspector of schools, or by any school trustee, or by any ratepayer; and to warn such truants, their parents or guardians, in writing, of the consequences of truancy if persisted in; and also to notify the parent, guardian or other person having the charge and control of any child between eight and fourteen years of age, when such child is not attending school as required by this Act, and to require such parent, guardian or other person to cause the child to attend some school within five days from said notice.

In case the parent, guardian, or other person responsible, neglects or refuses to comply with the requirements of the notice or warning thus given, it becomes the duty of the truant officer to enter a complaint before any police magistrate or justice of the peace having jurisdiction in the municipality, and upon conviction, the person guilty of the neglect or refusal, will be liable to a fine of not less than five, or not more than twenty dollars ; or the court may, in its discretion, require persons so convicted to give bonds in the penal sum of one hundred dollars, with one or more approved sureties, for carrying out the provisions of the law in accordance with the notice of the truant officer. It is obligatory upon the truant officer to institute proceedings against violators of the law in the manner above indicated. No conviction can be had unless the court is satisfied that the alleged offender was duly warned, in writing, by the truant officer.

The remaining clauses of the Act provide inter alia that the assessors of every municipality shall annually make a return in a book and according to a form provided for the purpose, of the name, age and residence of every child between the ages of eight and fourteen, resident in the municipality; also the name and residence of such child's parent or guardian. This record is to be returned to the clerk of the municipality.

Section 12 is specially important :

It shall be the duty of the trustees of every school to report to the truant officer of the municipality in which their school is situated, the name, age and residence of all pupils on the school register who have not attended school, as required by this Act, together with such other information as said officer may require for carrying out the provisions of this Act. Such reports shall be made in the last week of June and December in each year ; and it shall be the further duty of the trustees to report forthwith to the truant officer all cases of truancy or expulsion in their respective schools.

Violation of any of the provisions of the Act by a corporation renders the officers or agents of such corporation liable to action, and, on conviction, to the same penalties as individuals similarly offending.

In townships, the trustees of each school section may appoint a truant officer to have the same powers as truant officers in cities, towns and incorporated villages, and to perform similar duties. But the appointment is, seemingly, not compulsory in the case of these sections. It may be questionable

whether some more stringent measures are not necessary in these rural districts.

So far as the cities, towns and incorporated villages are concerned, the provisions of the law are reasonably stringent and the machinery for enforcing them appears to be satisfactory. Every trustee, principal and teacher should be heartily in sympathy with the design of the law and ready to aid in its enforcement. No greater wrong can be done to any child than to permit it to grow up in ignorance. No higher service can be rendered to the State than to see to it that those who are to be its future citizens are trained for lines of intelligence, morality and usefulness.

### AN INVALUABLE HABIT.

NE of the practical questions which greatly embarrass most young teachers and we dare say, a good many older ones, in an ungraded school, is how to keep the little folks busy, and so out of the reach of temptation to disorder or mischief throughout the, to them, long school day. The paper by Miss Barry in this number will be found to contain many very practical and helpful suggestions, and we commend it to the notice of all who have trouble in the respect indicated. In regard to one point only do we feel disposed to take exception to Miss Barry's remarks, or rather to interpose a caution, though in view of the general tenor of her paper, which insists strongly on intelligent work, the caution may scarcely be needed.

The sentence to which we refer is that which, recommending the excellent in practice of having the children memorize choice extracts, the writer advises teachers not to worry if some of these should embody language difficult for the children to comprehend. "Now is the springtime," says Miss Barry, "sow the seed and the harvest will come by and by. The man seeks to know why it is and whence it is; the youth to know how it is, but the child is content to know what it is." We know not how it may be with our readers generally, but the whole testimony of our own observation and experience is that children, unless their natural and healthful curiosity is repressed, are quite as eager as their elders to know, not only the what, but the how, the why and the whence of things. This innate thirst for real knowledge is the mainspring of all true mental development. Hence we cannot but regard the habit of passing nothing in reading without understanding its meaning, if possible, as one of the very greatest value to the young learners. On the other hand the habit of learning mere words without understanding their meaning is, we think, a/most per-

nicious one-from the educational point of view. Is it not largely a result of this habit, formed in childhood, that we every day meet with men and women who are content to read or listen to whole paragraphs, and who often have a certain enjoyment in listening to the sound, while they have at most but a dim, glimmering perception of the real thought of the author. We venture to say that to a very large extent the common antipathy to the study of Grammar has its origin in the old, but we fear not obsolete practice, of requiring children to commit to memory definitions and rules which they do not understand, and are, it may be, incapable of understanding. Our opinion is, therefore, and we have no doubt that Miss Barry will agree with us, that the teacher should take great pains to see that not only in their reading and memorizing of literary extracts, but in all their work, children understand the meaning of what they read and the reason for what they do. The mind is so formed that even in childhood its greatest delight is in searching into and finding out the meaning of things. This innate tendency should be encouraged and strengthened into a habit. That habit once formed, future progress is assured, and will be accompanied with that genuine enjoyment in the right use of the mental faculties which is nature's own stimulus to exertion and her high and lasting reward.

#### A HOPEFUL INCIDENT.

FEW days ago a pleasing incident, of A a kind that is too rare, took place in the County of Lincoln. The people of Union School, Section No. 1, of the townships of Clinton and Louth, have this summer erected a very fine brick schoolhouse, heated by a furnace of the most approved kind, and equipped with an excellent additional class-room and a still more excellent library. All of the large, airy, and well-lit basement that is not taken up with the furnace, has been fitted up as a play-room, so that when the weather is not favorable outside the pupils can enjoy themselves without disturbing the school room. The incident above referred to was the formal dedication of the building to its future use. The proceedings occupied the greater part of the beautiful summer afternoon, and attracted a large crowd of people from the adjoining sections and the neighboring village of Beamsville, the more distant town of Niagara and the city of St. Catherines. Addresses of a highly congratulatory kind were delivered by several local clergymen and laymen, included the Chairman of the meeting, Mr.J. B. Osborne, one of the pioneer settlers and a veteran

promoter of educational work. Mr. Hiscott, the representative of Lincoln in the Ontario Legislative Assembly, put in a plea for the better education of farmers, and W. Houston, M.A., Librarian to the Ontario Legislature, in the formal address of the day, cal ed attention at some length to the privileges and responsibilities connected with the Public School.

The cost of the whole building, with its equipments, has been about five thousand dollars, and it is pleasing to be able to record that about half of this sum has been contributed by one gentleman, Mr. M. F. Rittenhouse, of Chicago. Mr. Rittenhouse spent his early youth in the section, and though still a comparatively young man he has, within the last few years, become one of the most prominent lumber merchants and manufacturers of the great city in which his lot is now cast. He has equipped the library room in a beautiful style and has stocked it with several hundred dollars' worth of standard books. It is greatly to be desired that the example thus set by Mr. Rittenhouse should be extensively followed. At a time when so much is doing in the way of endowment of higher education those who can do a little in the way of improving rural schools will find in this kind of liberality their own rich reward.

### ANSWERS TO CORRESPONDENTS.

I N reply to "Pedagogue's" first question, we can only say that in our judgment the notice to trustees, if given as described, was sufficient, and the action of the two trustees valid. The question is, however, a legal one. So far as we can discover, the Act specifies no length of time as necessary to the validity of the notice. In regard to the second question we think the trustees have not power to dismiss the teacher before the expiration of the term specified in the agreement, save for misconduct.

A. E. O's questions are answered in part in THE JOURNAL of April 1st and in other numbers. We have not space in this number to go into the other points named. If information cannot be otherwise gained repeat questions after the holidays.

We overlooked one of "Viola's" questions in a former number. There is no modernized version of Piers Plowman.

### FLOWERS WITHOUT FRUIT.

PRUNE thou thy words, the thoughts control That o'er thee swell and throng; They will condense within thy soul,

And change to purpose strong.

But he who lets his feelings run

In soft luxurious flow, Shrinks when hard service must be done, And faints at every woe.

# Primary Department.

### NATIONAL EDUCATIONAL ASSOCIATION.

ARNOLD ALCOTT.

IN looking over the official bulletin of the National Educational Association of the United States, I read that the main objects of the Association are (1) to elevate the character and to advance the interests of the profession of teaching; (2) to promote the cause of popular education. Surely the aims are very worthy of the most earnest attention and sympathy of every teacher. A great majority of us, in reading the Bulletin, are apt to give a sort of superficial glance at the aims. We are not always ready to discriminate and individualize the thoughts embodied in the elevation of the teaching profession, and in the promotion of popular education. A cursory view only is taken, and consequently, no real image is received by the mind-retina. It seems almost superfluous to say that of course, on the teachers, as a corporate body, and also as individuals, depends the future of the profession; on them devolves the duty of keeping bright, and of making brighter the light of truth. The teaching profession must be what the teachers are, You cannot play Hamlet without Hamlet.

Let us talk for a little on the elevation of the character, and the advancement of the teaching profession.

To elevate the mass the units must be raised. This is an accepted truth. Therefore, it obviously follows that to ennoble the character of our profession, every man must feel it his bounden duty and pleasure be to be a true, manly man, every woman to be a true, womanly woman. This reference especially relates to the internal nature, to the thoughts, the feeling, and the volitions, to the ego in every one of us.

The advancement of the interests of the profession:-

This certainly is conditioned on the former, but includes external means as well; such as, financial conditions, good buildings, grounds, etc. In short much of this external progress is relegated to the citizens. May they remember this, and act accordingly.

The promotion of the cause of popular education. But, of this, in another number of THE JOURNAL.

Before closing let me give a hint or two, which may form variety for language lessons. Teach your children, even those in Part II, or perhaps lower if the grading be fine enough, how to write letters. Also, show how to address the envelope; and let your pupils draw the picture of one, and on it show where the stamp should be placed. You might dictate as follows :-

Address a letter to a man named John Smith, who lives on the same street your school is on, and at number eighty-four; show what kind of stamp should be used, and where it should be placed. Again, show how to address to ladies, to doctors, and to ministers.

Of course, no enthusiastic, energetic teacher will ever forget the story-telling and story-writing, which is surpassed by no other exercise, as regards developing the power of expression, which should undoubtedly be the primary aim of primary language lessons.

In a later number, I shall write at some length on the varieties, which we may very advantageously introduce into this delightful branch of our school work.

### MISUNDERSTOOD.

#### RHODA LER.

THERE is no rest like a change. A change of scene, occupation, reading and thought is what the weary teacher at this time of the year looks forward to and enjoys as only a teacher can. By the time this meets the eye of the readers of THE JOURNAL the long looked for rest will be at hand. Good-byes will have been said to the happy little people, proudly hurrying home with their little bits of exhibition work in their hands to show "mother"; the click of the last lock will have been heard, and the inaudible sigh you gave as you turned from the school-house will have told of hard work over, and appreciation of the wellearned rest.

As these thoughts passed through my mind I wondered what I could find of interest for this July page. If the Primary Department be read at all this week, it will scarcely be read as it might be when we are in the midst of our work and are anxiously on the outlook for helps of all kind, however slight. Not theory, not methods, not sample lessons ! What shall it be? A little experience, if not volunteered too frequently, sometimes meets with a friendly reception, and looking back on the past session, one incident-or rather one lessonstands out far above and beyond all the other experiences of the term.

Let me ask before launching into the story, when, if ever, does a teacher feel smaller and meaner than when she has to confess to herself that she has totally misunderstood one of her scholars; perhaps put a wrong construction on some innocent and unpremeditated act that will constantly bias and prejudice her in her treatment of the child?

Asking pardon for the frequent use of the objectionable pronoun, I will proceed to tell you that I had in my class a boy remarkably large for his age, and exceedingly dull for his size. He was awkward and loose-jointed, and had that manner of rushing headlong into things which insures the certain destruction of all good results. He also had an uncomfortable and rather aggravating habit of smiling at everything. Grave or gay, serious or comical, as the occasion or word might be, all met with the same unconcerned smile from Norman. He had also a sort of lingering way of doing things that bordered on the disobedient, and altogether he gave me the impression of being somewhat of an incor-rigible. Although I took considerable trouble to cure him of his bad habits and win him over to the working side, being prepossessed with this idea of his character, you will rightly expect to hear that I met with but little success. But how powerful sometimes is the influence of the most trivial act.

One day an accident occurred in the school. Some of the little ones were very much terrified, and just as my attempts to quiet and calm the class were succeeding, and everything was still I heard a stifled sob from behind me, and turning around, I beheld my hard-hearted, immovable Norman, with both arms around his seat-matea little five-year old fellow-and forgetful of all rules, in his excitement he was whispering most earnestly, "It's all right now, Freddy, its all out *now*. Look, Freddy, don't cry-the smoke won't hurt you !' felt as though I wanted to beg that boy's pardon on the spot and I had a long talk with him that night. The next day a new boy seemed to occupy Norman's seat. His manner was changed. He was, and is still, impulsive, but a more generous boy you could not find. He is awkward, but he is honest, and what seemed to savour of disobedience is only a self-consciousness that is gradually disappearing. I certainly feel ashamed to think I so misunderstood the boy. A discovery like this is indeed humiliating and yet how few of our scholars we really understand. If we had fewer scholars and more time, some one says, we might attempt it. As the case now stands are we doing our utmost? This experience has strengthened very greatly my resolve to be "slow to judge." Slow to judge or condemn the actions of my scholars, and more ready to learn whatever of good may be in their nature.

# \* Question Drawer. \*

WHAT parts of Africa belong to the English, to the French, the Germans, Portuguese, etc.?

[Algeria, on the Mediterranean, is a French col-ony, also parts of Senegal and Gambia. Great Britain has possessions at the C-pe of Good Hope (Cape Colony), Sierra Leone, Natal and on the Gold Coast. The Portuguese have possessions on the cast coast in Mozambique, and on the west Gold Coast. The Fortuguese nave possessions on the east coast in Mozambique, and on the west coast in Angola and Benguela. Spain has the Canary Islands. Liberia is a Republic founded by the American Colonization Society for emanci-poted neurops. The foregoing describes the state pated negroes. The foregoing describes the state of affairs generally, some ten or fifteen years ago, when the interior of Africa was almost an unknown Since the explorations of Stanley and others a struggle, or rather a race for priority in obtaining the suzerainty of large tracts in the interior has been and is yet going on. Britain has acquired large additional possessions, especially in the region between Lake Victoria Nyanza and the coast. Germany also has now taken possession of a large tract of adjacent territory in the same region. The final divisions of territory between Great Britain and other European nations are not yet fully settled. Whether the British suzerainty yet fully settled. Whether the British suzerainty of the Transvaal and Protectorate of Egypt will result in permanent control remains to be seen. It is probable that the habitable regions of the vast interior of the Continen will be definitely portioned out amongst the great Powers within a decade or two when Britain is sure to come in for a lower two, when Britain is sure to come in for a large share. Two powerful British companies have been share. Two powerful British companies nave been chartered within a few years, with extensive powers, to acquire possessions and do business in different parts of Africa. Difficulties have lately arisen between Great Britain and Portugal in reference to territories in the south.]

LET fraud, and wrong, and baseness shiver, For still between them and the sky The falcon, Truth, hangs poised forever, And marks them with his vengeful eye.

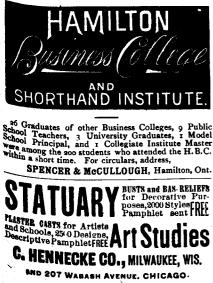
PHONOGRAPHY OR SHORTHAND. PHONOGRAPHY which was invented over fifty Years ago by Mr. Issac Pitman, has become exceedingly popular during the last few years in Britain, and is recognized by the Government as the best system of shorthand on account of its simplicity and legibility. Canada is not behind in adopting what is good in educational matters, this system having already being taught in several schools with good results, and bids fair to be more extensively used in the future, now that the Government have elected it a subject to be taught in the High School. Teachers who wish to m ster the art of shorthand will do well to take a course at the shorthand Institute, Galt, during the holidays where an experienced certified teacher and reporter superintends the shorthand apartment. Session commences July 13th, See advt.

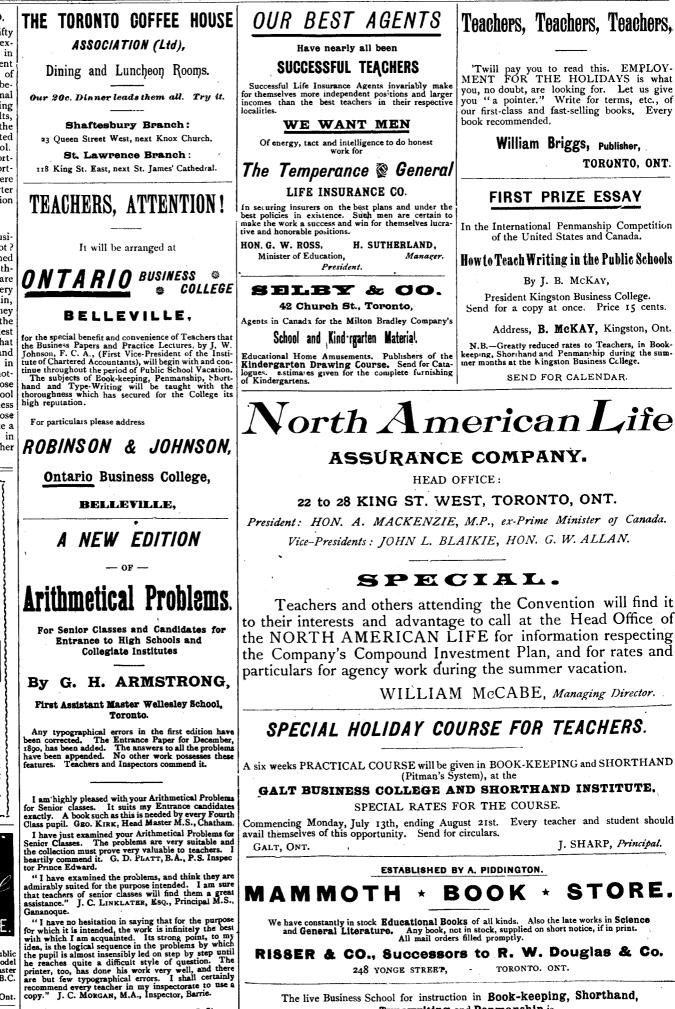
HAVE you a copy of "100 Lessons in Business," by Seymour Eaton? If not, why not? The best teachers have long since learned that the best methods and exercises in arithmetic for the school-room are those which are most closely related to the necessities of every day business life. Parents used to complain, with good reason, that their boys, though they might be at the head of their classes in the schoolroom, often could not solve the simplest Practical problems in business affairs. All that is now being changed in the best schools, and the use of such text-books as "100 Lessons in Business," is one of the best means of promoting the reform. How often, too, even those who stand high in their classes leave school utterly unable to write a respectable business letter. That will not be the case with those whose teachers have read "How to Write a Good Business Letter," which is bound up in the same volume. Read the advt. in another column.



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# **OFFICIAL CALENDAR** EDUCATION DEPARTMENT

FOR JULY.

ANNUAL EXAMINATIONS, 1891.

Yuly 4. High School Entrance Examinations begin. 7. The High School Primary, Junior Leaving, and University pass Matriculation Examinations begin.

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

The High Schools Act, as amended in so far as it relates to Entrance Examinstions is as follows :--

35. (1) A uniform entrance examination for the ad-mission of pupils to high schools shall be held annually in every high school district according to such regulations as may be prescribed by the Education Department. Examinations may be held at such other places in every county as shall be recommended by the county council of which notice shall be given to the in-spector by the county clerk. Such places shall be affiliar-ed for the purposes of the examination with a high school in the same inspectoral division. R.S.O. c. 226, s. 38.

in the same inspectoral division. R.S.O. c. 226, s. 38. (2) Every high school district shall be under one boord of examiners. The trustees of the public and separate schools of the city, town or incorporated vil-lage in which a high school is situated shall on or be-fore the 1st day of June each appoint an examiner, for the purpose of such examination. The Inspector or inspectors of public schools of the inspectoral district within which the high school is situated and the prin-cipal of the high school shall be *ex-officio* members of such board.

(3) The persons qualified to be appointed examiners shall be persons holding certificates as first class teach-ers actually engaged in teaching, provided always that any person actually engaged in teaching who is the holder of a second class provincial certificate and who has had five years experience as a teacher may be appointed examiner, where a first-class teacher is not available within such high school district.

(4) The Board of Trustees and the Board of Examiners may agree upon the sum to be paid annually for the examination of such pupils, but in the absence of any agreement, examiners shall be allowed the sum of one dollar per pupil for conducting such examination and this allowance shall include the travelling expenses of the examiners, presiding at the examination reading and valuing the papers of candidates and reporting the results to the Education Department.

results to the Education Department. (5) The board of education, or the trustees of the high school district within which the examination is held shall on the requisition of the chairman of the board of examiners pay all the expenses of the exam-ination at such h gh school, and such expenses shall be deemed to be part of the cost of maintenance of such high school. At affiliated schools the travelling and other expenses of the presiding examiner shall be paid by the county council.

(6) Any pupil passing the entrance examination may be admitted to a high school provisionally, but it shall be competent for the Minister of Education to consider the appeal of any candidate with regard to the reading



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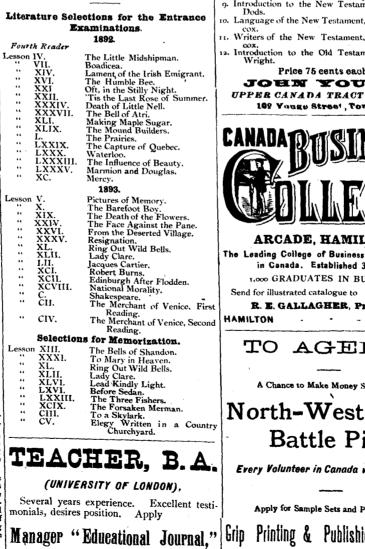
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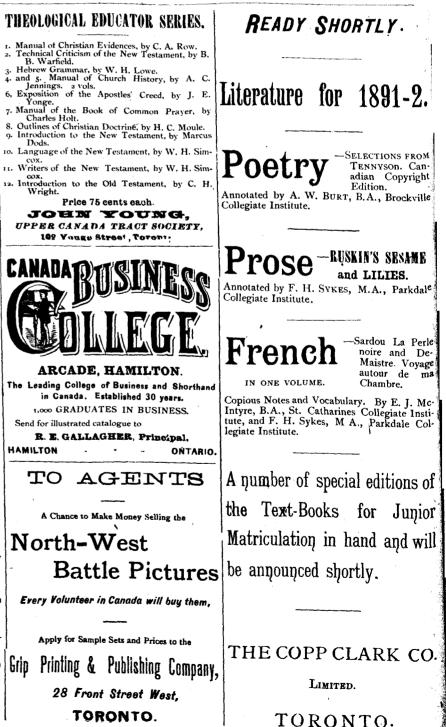
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and valuation of his papers or on the report of the high school inspectors, to confirm, or diallow the a mission of any pupil, or to require of any pupil urther tests of proficiency in a y of the prescribed subjects of exam-nation. R.S.O. c. 225, 5, 41.

(7) County pupils whose examination has he in con-firmed by the Mi ister of Education shall have the right to attend any high school aided by the council of the county in which their parents or guardia s re ide. Resident supils shall have the right to attend the high school of the district in which their parents or guar-diaus reside. Non-resident pupils may attend any high chool at the discretion of the trustees of such school.



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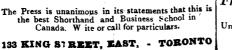


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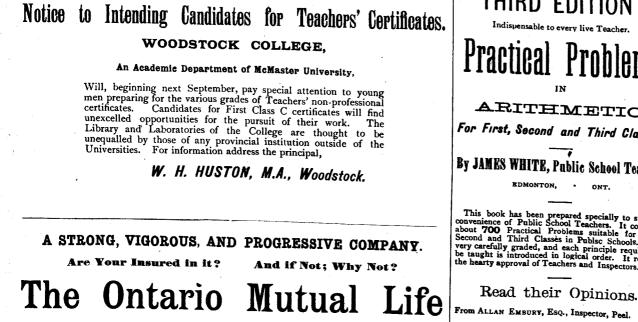
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## ANNUAL REPORT.

The twenty-first annual meeting of The Ontario Mutual Life Assurance Company was held in the Town Hall, Waterloo, on Thursday, May 28, 1891. The attendance was both influential and representative, there having been (apart from the Company's agents, many of whom were present) prominent policy-holders from Berlin, Stratford, Torono, Brockville, Belleville, Calgary and other distant places. William Hendry, Manager, was present as usual and occupied a seat on the platform. The President, I. E. Bowman, Esq., M.P., having taken the chair, on motion, the Secretary of the Com-pany, W. H. Riddell, Esq., acted as secretary of the meeting. The minutes of last meeting, on motion, were taken as read and confirmed. The President then read

#### THE DIRECTORS' REPORT.

THE DIRECTORS' REPORT. Your Directors, in submitting their twenty-first annual statement for the year ending December 31, 1890, are again in a position to report to you with confidence that the business of the Company during the year was, in its essential features and general results, of a highly satisfactory character. The amount of new insurance issued is \$2,348,159, under 1,783 policies, on which the first year's premiums amounted to \$77,450.90. The total insurance in force at the close of the year was \$13,710,800. The total income for the year was \$48,958, consisting of \$400,020 from premiums and \$79,938 from interest on invest-year. The read total assets are again largely increased, and our surplus over all liabilities is \$r34.066, which will enable us to continue a liberal distribution to our policy-holders. The death losses, considering the general high rate of mortality during the year, were exceptionally low, interest income for the year being \$5,522, or \$38,653 less than during the previous year, and less than the income as compared with that of 1880, which affords satisfactory evidence of care and economy in the management. The funds of the Company, as will be seen by the financial statement contained in our pamphlet, are invested in municipal debentures, mortares on real estate and loans on our policies, which are all satisfae and invested is actorial satisfactory return to the policy-holders. The compliance with that of 1880, which affords satisfactory evidence of care and economy in the management. The funds of the Company, as will be seen by the financial statement contained in our pamphlet, are invested is municipal debentures, mortares on real estate and loans on our policies, which are all safe and invested so as to yield a satisfactory return to the policy-holders. The compliance with the public demand for this kind of insurance we have adopted a Twenty Year ordinary Tontine, and which we are confident will prove beneficial and satisfactory to those who desire a mortina

the year. You will be called on to elect four Directors in the place of Robert Melvin, of Guelph; C. M. Taylor, of Waterloo; Robert Baird, of Kincardine, and James Hope, of Ottawa, whose term of office has expired, but all of whom are eligible for re-election. The detailed Financial Statement, prepared and duly certified to by your Auditors, is submitted herewith for your consideration. On behalf of the Board, I. E. BOWMAN, President.

for your consideration. I. E. BOWMAN, President. Pamphlets containing the Financial Statement and Auditors' Report having been placed in the hands of those in attendance, the President moved the adoption of the various reports. He spoke of the favorable death rate experienced in r890, the low expense ratio, the keen competition our agents encountered from rival companies when seeking new business, the steps taken by the Board to extend the operations of the Company, the care taken to invest the Company's funds safely and judiciously and of other prominent features of the progress grailing and the prospects for the future most encouraging. The agency staff was never better equipped or more active and the new business for r891 would show that the Company was in a position to hold its own against all comers. Messrs. Kobert Melvin, and Vice-President, Guelph, B.M., Britton, Q.C., director, Kingston, and others, in brief and effective speeches, seconded the adoption of the present standing of the Company will show that it has done and can do better for its members than any of its competitors. The actual results attained for individual policy holders prove conclusively that this Company has no peer in the insurance field and that its members get their insurance at the lowest possible cost, consistent with security. The following gentlemen were elected directors for the next three years in the place of those whose Henderson, B.A., LLB., B.C.L., Ottawa, and Robert Baird, Kuncardine. Messrs. Henry F. J. Jackson and J. M. Scully, having been re-elected Auditors, and the customary wote of thanks to the Board, the Officers and the Agent, having been tendered and responded to, the meeting was brought to a close. The Directors met subsequently and re-elected I. E. Bowman, President ; year.

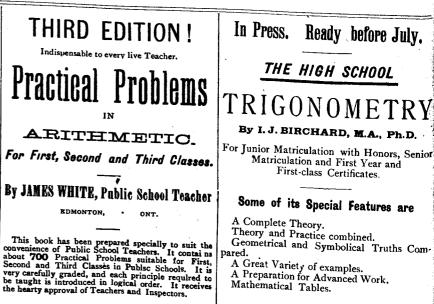
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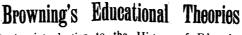
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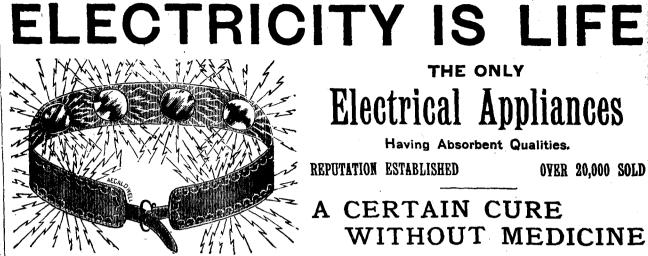
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