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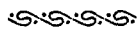
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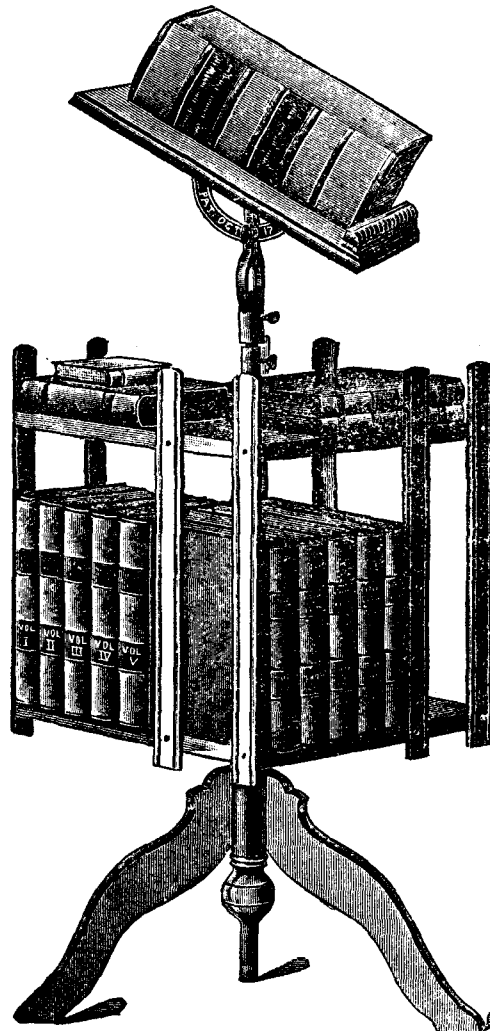
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## Editorial Notes.

### NEW YEAR'S ANNOUNCEMENT.

As our readers may have inferred from the change in the publisher's title, in last number, a change of proprietorship has taken place in THE EDUCATIONAL JOURNAL. It has been purchased by "The Educational Journal Publishing Company," and is now the exclusive property of the Company. Its financial management will henceforth be entirely in the hands of that Company. This Company becomes responsible for furnishing the paper regularly to all subscribers who have paid in advance to the former proprietor. It is also empowered to receive and collect all arrearages on subscription and advertising accounts remaining unpaid at this date.

There will be no change in the editorial management of the paper. The subscriber, who has had charge of the Editorial department ever since the paper came into existence, will continue his connection with it in that capacity. Being now relieved of all care and anxiety arising out of the financial and business management, he hopes and purposes, by devoting to it a still larger share of his attention, to make the paper more vigorous, more helpful, and, so far as it may be in his power, better in every respect, than ever before.

One important advantage that will accrue to subscribers from the changes now announced has been already foreshadowed in the valuable book-franchises

which have been offered in the last two numbers, and of which subscribers, new and old, are now freely availing themselves. These and other equally advantageous offers will be repeated from month to month. A careful study of these premium offers will, we think, convince those who make it that the subscriber who takes advantage of them may really save more than the price of the paper every year.

Among the improvements in THE JOURNAL itself which will be immediately carried into effect will be the establishment of a special ENTRANCE DEPARTMENT, which will be placed under the management of a thoroughly competent teacher—one who knows from practical experience all the requirements for the successful facing of that examination, and whose attention will be given entirely to guiding and helping teachers in preparing pupils for that examination. The page or pages containing this special Entrance matter can be printed separately and supplied to teachers in any desired quantity, either free or at a merely nominal cost. By this arrangement we hope to supply the chief practical want of Public School teachers, of all grades, more completely than we have hitherto been in a position to do. Other improvements will be made as fast as they seem desirable, for it is the fixed purpose of all connected with THE JOURNAL to make it not only *the* teachers' paper for Ontario, as it has long been, but second to none published on the continent in all the essentials of a paper for the practical educator.

THE JOURNAL wishes all its friends and subscribers, in all sincerity,

A HAPPY AND PROSPEROUS NEW YEAR,  
J. E. WELLS, Editor.

### TEACHERS, ATTENTION!

We would direct your attention to the three great offers announced on the last inside page, which we make to new subscribers, and also to old subscribers who renew, providing their subscriptions are paid up to December, 1896. Never before has THE JOURNAL been able to offer

such a premium as the "Cyclopædia of Practical Quotations." The work alone is well worth double the price that we are asking for it and THE JOURNAL for one year. Subscribers who fail to secure this premium will certainly regret it. One prominent educationist not only subscribed for THE JOURNAL, but purchased two additional copies of the Cyclopædia for Christmas presentation purposes, so highly did he value the book. The other premiums are offered at extremely low rates, and teachers who are interested in the class of work which they represent will find them very helpful indeed. Will you kindly bring these great offers before your friends in the profession who are not now subscribers for THE JOURNAL, with a strong request that they send their subscriptions at once? THE JOURNAL should be in the hands of every teacher in Canada, and we hope before very long, with your assistance, to place it there. Help us to build up the circulation, and we will see that you share in the prosperity of the paper by giving you the very best educational information and assistance obtainable.

Wishing you the holiday season's greetings, we remain,

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COMPANY.

ACCORDING to a paper read by Professor B. Lippens, at the late meeting of the Ottawa Teachers' Association, on the "Belgian School System," the Belgian teachers work under the advantages of a minimum of salary and permanent tenure. No teacher can be removed without his consent, unless by permission of the Minister of Education. Other privileges are attached to the profession, and the teacher enjoys the same social consideration accorded to the members of other learned professions. The question is well worth considering here whether, in virtue of the contributions made from the public funds for the support of our schools, the Government has not a right to enforce conditions which would at least tend to secure to teachers a minimum of salary, and some approach to permanency of tenure.

## English.

All articles and communications intended for this department should be addressed to the ENGLISH EDITOR, EDUCATIONAL JOURNAL, Room 5, 11½ Richmond Street West, Toronto

### ENTRANCE LITERATURE.

#### LESSON XXVII., "THE BATTLE OF BANNOCKBURN."

The introductory note in the Reader may suffice by way of a biographical sketch of Sir Walter Scott. If the teacher can find time and opportunity, it would be best to supplement it by reading before the class, or having read by some of the pupils some choice and tolerably full extracts from some of his other productions, say a canto of "The Lady of the Lake," or a passage from "Marmion and Douglas." If the pupils become thoroughly interested in some of his works in this way, they will get and retain much more vivid and lasting impressions regarding the poet and novelist than can be conveyed by the most graphic biographical summary.

The extract before us, in form a simple narrative, written evidently for the young, needs little elucidation. The first and chief aim of the teacher will, naturally and rightly, be to see that the class read the whole description understandingly, and that they are carefully guarded against mispronunciations and misconceptions. Both these defects will probably be found at first reading, simple as the narrative seems to maturer minds, to abound to a much greater degree than the inexperienced teacher would suppose possible. The questions and remarks which follow are mainly designed to aid the teacher in his task.

First in order will be, naturally and necessarily, a brief sketch of King Edward the Second, and his times. The relations, at the date of the battle of Bannockburn, between England and Scotland, should be presented in the clearest possible manner. Thus there is cut out, at the very outset, a good deal of work for the teacher, unless he or she happens to be a reader of history, as every teacher ought to be, and familiar with that of England and Scotland during the reigns of the first Edwards. If a suitable history, or encyclopædia, is available, as such works should be in every school, the best method is to require the members of the class to look up, individually, this information for themselves, and to prepare summaries of it for use in the class. When time does not admit of the whole work being done by every pupil, a good way is for the teacher to allot to each some particular point or character, and then to have the results presented consecutively in the class, thus enabling every attentive pupil to get a fairly complete survey of the whole field. One, for instance, might be asked to present a sketch of Edward; another, one of Robert Bruce; a third to describe the cause of the war, etc.

Let us, however, say, as emphatically as we can, that the amount of attention to be given to such preliminaries, interesting and important as they are, should be but a fraction of the whole amount of time available. Though such introductory studies come first in order, they are by no means first in importance. The main point is to read, understand, and appreciate the description itself, so as to feel its beauty and its power. Unless the children leave the lesson with a consciousness of having enjoyed it, and a distinctly stronger liking for the writings of such authors as Scott, the chief end of the exercise will not have been reached. Above everything, avoid the mistake of letting any secondary matter of any kind take the place that belongs to the literature itself. We dwell upon this point because, from a perusal of our educational exchanges and other indications, we are persuaded that this is a mistake frequently made by even clever and competent teachers.

But to the lesson. We assume that the whole description has been read without interruption, save to correct some evident misapprehension of the meaning or supply some failure to catch the thought. We suppose the class to be now led somewhat critically over the ground. We put a few points to be noted in the didactic form for the sake of brevity, taking it for granted that every teacher will act upon the sound principle that nothing is to be told to the class that can be drawn from the pupils by skilful questioning.

*The French provinces.* As the outcome of the frequent struggles with France, England at this time possessed considerable territory in France. Wales had been finally subdued and made a part of England by the king's father, Edward I., about thirty-two years before, and after ten years' valiant resistance. Ireland had been invaded by Henry the Second, during the last half of the twelfth century, and during the thirteenth century a number of the Anglo-Norman nobles, to whom large slices of Irish territory had been granted by Henry, succeeded in establishing their ownership at the point of the sword.

*Nobles and barons.* In England, at the present day, a baron is a nobleman of the lowest order in the House of Lords, and next below a viscount; but in the time here spoken of the term denoted a noble who possessed a fief, having feudal tenants under him, whom he was obliged to train and lead as a military band at the call of the sovereign.

"Noble" is a more general term, denoting men of rank.

One hundred thousand men were in those days an immense army, though many at the present day are much larger.

*Bruce.* The story of Robert Bruce, and of his relations to Sir William Wallace, will probably be more or less familiar to most boys. There is no doubt a good deal of myth in the current stories about Wallace. A sketch of Bruce, and some talk about the Douglas and the heads of other famous Scotch clans, will be in order here, if time permits.

*Address and stratagem.* The former word is often, as here, used by Scott in the sense of skill, adroitness, instead of its common meaning. Call on some one to describe one of Bruce's successful stratagems in this battle. Let the class, or some members of it, try their hands at drawing a plan of the position of the two armies, from Scott's graphic description.

*Standards, banners, and pennons.* Let the class be called upon to distinguish between these three words, referring to the dictionary, if necessary. With a rough plan of the battlefield sketched on the blackboard, the class, with the teacher's help, will be able to follow, with deep interest, the movements of the respective armies, as here described.

"*A rose fallen from your chaplet.*" What did Bruce mean by this? The class will remember that Randolph had been specially detailed with his troops to prevent the English from relieving this castle, which, it is implied, was held by an English garrison, who were being hard pressed by the Scotch. Of course, Randolph would lose a rose from the chaplet or crown which would be the reward of his bravery in the coming battle, if he failed to prevent the English horsemen from making their way into the castle to reinforce the garrison.

"*So please you.*" etc. Attention may be called to the free and easy way in which Douglas overruled the king's prohibition, as showing the relations which subsisted between Bruce and his trusted leaders. Modern army discipline would brand such an act of independence on the part of a subordinate officer, and punish it, as insubordination.

"*So terrible a blow.*" Many wonderful stories are told as illustrating the extraordinary physical strength of both Robert Bruce and his former leader, Wallace.

*Their heavy armor.* Conversationally or otherwise, some clear description should here be given of the kind of armor worn by warriors in those days. Probably some of the class will have seen in some museum specimens of old armor, and will be able to tell their classmates about it.

Define the words *gallant, van, succors, mareschal, cavalry, spoil, dispersed*, pointing out any peculiarities in Scott's use of any one or more of them.

Read carefully the last sentence, and see whether you can find anything wrong with the construction or meaning. ("Most just it is that . . . the memory . . . ought to be remembered"). Even "Homer sometimes nods, and the best writer of English sometimes slips."

THE foundation of our national character is laid by the mothers of the nation. Many a woman does the work of her life without being seen or noticed by the world. The world knows nothing, or does not think, of the fears, the pains, and the anxieties inseparable from the mother's office. So sweet and so natural a thing is piety among women that men have come to regard a woman without it as strange, if not unhealthy.—*Holland.*

## Hints and Helps.

### TACT VERSUS MISCHIEF.

Unpleasant weather is frequent at this time of the year. The atmosphere of the schoolroom becomes close and stuffy. Pupils are nervous, restless, and, consequently, confusion and mischief slyly creep in. If the teacher scolds, the trouble is aggravated; what to do is the question.

The wise teacher reads the signs of the times before the storm breaks and tactfully wards it off. Sometimes one stanza of a bright, jolly song; sometimes five minutes of energetic calisthenics; and at other times the signal, pupils turn, stand, and where room is convenient for it, a pretty march in quick time, bringing up at seats, standing erect, sit, turn, and return to studies with fresh vigor, all the little elves of mischief having been frightened away for a time. There is much nerve energy in a room full of children, and it must be directed in proper channels or it will break through restraint in the wrong direction.—*Educational Gazette.*

### TRAINING THE VOICE.

BY C. H. CONGDON.

With proper care, it is easy to establish in children a degree of musical perception which will lead them to form correct habits of voice production.

Because of their immaturity, the vocal organs of children are peculiarly susceptible to injury. Many labor under congenital defects which are frequently absorbed by those with whom they are constantly brought in contact. This, coupled with a certain degree of carelessness or oversight on the part of both teacher and pupils, leads to "ugly pronunciation, throaty or nasal delivery, and indistinct enunciation." Words are "swallowed, jerked out, and run together in a most unsingable fashion" with no attention to phrasing, accent, or rhythm. All this is encouraged by shallow, improper breathing, and improper positions of the body.

Properly managed, however, the voices of most children have one prominent characteristic—that of extreme sweetness, and the work in voice training should be directed in establishing and developing this quality.

Pattern singing, by the teacher (if she has the voice), or by pupils whose voices are pure and resonant, will aid wonderfully in overcoming the faults described above. A bad pattern is usually imitated as readily as a good one, and for this reason voices that tend to contaminate the tone of the whole class should be brought under subjection. It is a good plan to seat such pupils in front, where they will be under constant surveillance of the teacher.

Soft singing is the first principle of voice training. Harsh, strident tones are usually produced by forcing the voice; hence the teacher should allow no amount of tone beyond that which the children can produce with perfect ease.

The methods of training suited to the voice of adult singers would result in injury to children's voices if used to a great extent in the schoolroom. In singing, children have the advantage over older people. While adults are studying how to arrange the vocal organs and "place the voices" properly, children just open their mouths and sing; the tone becomes an object of thought, and the vocal organs naturally relax to give expression to the sweet melody within. In teaching children to sing, it must be remembered that we are dealing more properly with minds than with throats. We may teach them by imitation to open their mouths gracefully, but devices for "placing the voice" are, as a rule, useless in the schoolroom. Move the soul with "concord of sweet sounds," and the voice will "place" itself.

Children in their enthusiasm often sing too loud and carry the broad, open quality of the lower notes to the upper register, thus producing shouts instead of the beautiful head tones so desirable in all singing. As the voice ascends it should diminish in force, but not in brilliancy.

Many principles of voice culture, pronunciation, phrasing, etc., used in language reading and elocution, can be applied advantageously in teaching singing.

During the singing exercise, teachers should insist upon the observance of the following points,

1. An erect but easy position of the body.
2. Deep but natural breathing.
3. A clear and distinct enunciation, with careful attention to making the consonants and singing the vowels. This may be taught by pattern.
4. A light attack upon all notes, diminishing in force as the voice ascends.
5. Proper accent and perfect rhythm in song singing.
6. Correct phrasing of songs, as in language reading.
7. Examination of each pupil's voice, keeping a record of its power, range, and quality, and requiring him to sing the part to which his voice is best adapted.—*School Education*.

## ONE WOMAN'S WAY.

BY ALBERT E. WINSHIP.

One of the most successful teachers whom I know took a very hard school, one in which severe punishments have been numerous in the past and suspensions frequent. Not a child has she touched, and not a suspension has occurred. Her success lies in herself, in her ingenuity. Of something out of the usual I will speak. Every Friday afternoon she steps to the board and writes a letter to the school, making comments on the week's work, notably on the conduct and spirit of the school. Every Monday morning there is another letter to greet them, speaking of what the week ought to be, and referring to any specially interesting subject that is to come up in the lessons of the week. She might say the same things, and not have half the influence. She writes them more carefully, and they weigh more with the children and interest them more. One Monday morning she wrote that the children who would like to "work off" their checks in department for the term might come to her desk at recess. This is the way she wrote one of the results:

When recess came, and I saw the mass of faces around my desk, I felt that in an incautious moment I had summoned the army of the unemployed. I was not prepared for such a wholesale acceptance of my invitation. I began, however, in a business-like way, to inquire how many checks they wished to make up, etc. With as keen a sense of justice as I was capable of I laid out the work. To the boys I gave the task of cleaning up the yard, apportioning the work according to the number of checks; to the girls I gave the task of cleaning shelves and putting them to rights, and to one girl, who is particularly fond of little children, I assigned the duty of taking the children from the first and second grades whom she saw standing forlornly in the hall or on the school grounds, and *teaching them to play*.

The opportunity to earn a good record and wipe out past mistakes delighted the children. To be sure, a few of those who most needed the chance did not avail themselves of it, but the sentiment of the school cannot fail to affect them.

I am watching with interest the outcome. I cannot bear to give a child a check and leave him no way to work out his salvation. Doesn't that denial send people from bad to worse?

There is a lesson in this woman's experience that many another may profit by.—*The American Teacher*.

## CLOUDS—I.

Teacher.—Well, there were very fine clouds yesterday. Let me see what you have observed about them on your way home from school, as you had agreed to study them. Was the sky very blue to you all—to those who went down the brook as well as those who went over the hills?

Chorus.—Yes, quite blue.

T.—Now, what did you think the clouds were like? You?

S.—They were in great big heaps, rolling one after another very slowly over the sky.

T.—Very good. They were just "heap" clouds. They have been called that already for nearly one hundred years by people who study the weather, only they give it the Latin name, *cumulus*, which means a "heap" or "pile."

S.—Oh, yes! They were piled up in great heaps over the mountain, just enough to make one afraid.

S.—But there were many very pretty ones, small ones, white and fleecy, for all the world like fairy sheep grazing on a great blue meadow.

S.—I saw one on the horizon rise up like a great mountain with fearful precipices; and the sun touched its margin with white and gold. The gold graded into a fiery smoke, and this again into black. Domes and towers arose until it became a giant castle in the air, and then an awful roll of the blackest smoke burst forth. But this soon became gilded with gold and the castle changed into a sunlit range of mountains.

S.—I saw lightning flashes from them in the evening.

S.—I think I heard thunder, too.

T.—Very well. I am glad you are watching so closely. These "cumulus" or "heap" clouds take on themselves most interesting forms.

S.—And I saw one like a lion and it gradually changed into a pig.

S.—Don't we sometimes have thunder storms from such clouds? I think I remember seeing just such great clouds before thunder and lightning?

T.—Quite right. Very likely the electric charge of such clouds has something to do with their rounded and curious forms. But you have also noticed that they moved very slowly. Now, why do you think they should?

S.—I don't know.

T.—If we were to get three boys, who can run with the same speed, to run around the school-house, one quite near it, the other twenty yards off, and the other half a mile off, which of them would appear to pass across the window most rapidly?

S.—The nearest would appear to pass the most rapidly, and the most distant would seem to move very slowly across.

T.—Well, might it not be the same with the clouds?

S.—Yes. But are the "heap" clouds very much further off than other clouds?

T.—Those who have learned to measure the height of the clouds tell us that they may be sometimes several miles high, while the low "sheet" cloud that is so very common is generally not over two-thirds of a mile high.

S.—Oh, yes. Sheet clouds are those that spread over us in a great sheet, so that you cannot tell one part from another.

T.—Right. The Latin name is "stratus," which means a layer, or a sheet. And the people who study the weather speak of such clouds as the *stratus* cloud. You see that Latin names are all more easily pronounced than English names sometimes. They are pronounced as they are spelled.

S.—They are then spelled as they are pronounced, I suppose.

T.—Yes. I suppose you are glad of that. But I may as well give you the name of another kind of cloud which you have noticed, and which you must now be on the watch for. This is the highest kind of cloud. In summer time it may be even higher than five miles from the earth. It is like fine tufts of hair, and is so far distant that it appears scarcely to move at all. Have you seen it?

S.—I think I have often. It is a thin, gauzy, wispy, feathery cloud.

T.—Correct. You may call it the "feather" cloud; and its Latin name is *cirrus*. Now you have got the three different kinds of clouds which have been named about the beginning of this century. And they are yet the three principal kinds, although there are variations which we shall some day consider. Now give me the names of the three principal varieties of clouds, beginning with the highest.

Chorus.—"Feather," "heap," and "sheet" clouds.

T.—Perhaps you can give the Latin or scientific names, which it may not be wrong to know, as they are so easy.

Chorus.—"Cirrus," "cumulus," and "stratus."

T.—Very well. When you are coming to school and going home you may have a good time making out these three forms of clouds. I will examine you on them next lesson. After which we shall notice other varieties and then study the causes of clouds and their different forms.—*The Educational Review*.

## HEART EDUCATION.

"The value of your teaching is not the information you have put into the mind, but the interest you have awakened. If the heart is trained the rest grows out of it. Interest the heart, the emotions, for they are the fundamental facts. The mind is

evolved out of heartiness. People do not have mind worth thinking of unless they have capacity for sensitiveness. The characters of great men prove this, whether in picture or in prose. We are always coming up against the great fact that it is enthusiasm that governs the world. We have not realized the educational possibility of it. Of all things in the world, love is the most educable, the most plastic; it can entwine itself about the lowest and most indecent thing in the world and spend its energies there, or climb the heavenly ladder, as Plato said, and identify itself with all that is most worthy, most precious, and most lovely."

Longfellow has said:—

"It is the heart and not the brain,  
That to the highest doth attain."

And Plutarch expresses it thus:—

"The soul is not a vase to be filled, but it is rather a hearth which is to be made to glow."—*Dr. Stanley Hall*.

## IMMORAL OBEDIENCE.

To educate a child to yield blind obedience to authority is always *unmoral*, if not often *immoral*. Obedience is necessary as a part of government; it is valuable as a habit; but if the child is taught simply to give unquestioned obedience to the dictation of a superior power—an obedience that does not involve the activity of his own soul as intellect, emotion, and will—such teaching falls far short of the ideal. The element of personal responsibility in the child can never be developed if his individuality is continually crushed by tyrannical force. I may oppose my will to the will of the child, and I may discover that his will has strength and a power of resistance equal to mine. If it be simply a question of will against will, his chances for victory are as good as mine, unless I degrade myself by resorting to my superior animal strength. But by appealing to his intellectual power and arousing his sensibilities—by summoning to my aid the power of intellect and feeling—my will is reinforced and easily conquers. Too long have we had as our ideal of schoolroom obedience that "inspired idiot" whose pathetic story and tragic end are immortalized in our school readers—

"The boy stood on the burning deck,  
Whence all but him had fled."

Such slavery to authority is both beautiful and pitiable. Any ordinary boy instinctively regards the hero of such a tragedy as wanting in common sense. It is the work of the school to develop self-respecting, self-directing men and women, who in society and government, in church and in state, will think and act for themselves, and are not blind followers of others. Blind obedience will make a good soldier, but rarely a good citizen.

It is true, however, that blind, unquestioning obedience is better than disobedience, but it should be the aim of the teacher to bring the idea of obedience to a higher plane—to lift it out of the realm of pain and pleasure, of fear and reward. Let us educate our children so that as men and women they may be self-directing, acting under the control of an enlightened will and conscience, striving after the right and true, and rising superior to difficulty and failure. The theory of "implicit" obedience, on the other hand, gives us what Kate Douglas Wiggin aptly calls a "'goodly goose,' who does the right for the picture card that is set before him—a 'trained dog' sort of child, who will not leap through the hoop unless he sees the whip or the lump of sugar." The average teacher, unfortunately, has no conception of the far-reaching influence of schoolroom discipline. We should look beyond the work of to-day; what is the tendency of this method or that, where and how will it ultimately end? We are to develop men and women, not machines nor soldiers.—*The Educational Exchange*.

LEARN to laugh. A good laugh is better than medicine. Learn how to tell a story. A well-told story is as welcome as a sunbeam in a sick room. Learn to keep your own troubles to yourself. The world is too busy to care for your ills and sorrows. Learn to stop croaking. If you cannot see any good in the world, keep the bad to yourself. Learn to hide your pains and aches under a pleasant smile. No one cares to hear whether you have the earache, headache, or rheumatism. Don't cry. Tears do well enough in novels, but they are out of place in real life. Learn to meet your friends with a smile.

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## Editorials.

### THE VENEZUELAN QUESTION.

THE anthem of Peace and Good-will which is the appropriate message of the Christmas season was this year rudely broken in upon by the warlike message of the President of the United States to Congress, and the strange and eager acclaim with which it was received by a body which should be august and deliberative. Who would have suspected the existence of a state of feeling in the United States towards Great Britain and Canada, such as would cause the members of both Houses of Congress, almost with one accord, to hail such a message with demonstrative applause, and to set aside the ordinary rules of procedure in order to vote a large appropriation for the expenses of a commission whose very appointment is an affront and a menace to the whole British nation? Yet this is but a summary of what occurred at Washington two weeks ago, on the reading of the President's Venezuelan message.

This shock came with so little premonitory warning that it would not be surprising should some of our readers find themselves less familiar with the his-

tory of the dispute which led up to, or rather preceded, this untoward demonstration, than a teacher is, not unreasonably, expected to be with important events of current history.

The first fact to be borne in mind, in connection with the affair, is the existence of a dispute of many years' standing between Great Britain and Venezuela touching the boundary line between that republic and the colony of British Guiana, its next door neighbor.

Whether Christopher Columbus ever landed on that particular part of South America which is now the Guianas or not cannot, probably, be determined. It is, however, certain that the Spaniards settled in the neighboring countries early in the sixteenth century, as in 1580 they drove out the Dutch, who were trying to establish themselves on the banks of the Pomeroon and other rivers. At the very beginning of the seventeenth century they (the Dutch) succeeded in obtaining a footing on the river Essequibo. During the seventeenth and the early part of the eighteenth centuries the Dutch were harassed by incursions of the French, also by internal insurrections, the result being the formation of three distinct colonies, which, after some further fluctuations of fortune, were, in accordance with the strong desire of their inhabitants, constituted into the colony of British Guiana in 1796. By the treaty of Amiens, in 1802, they were restored to the "Batavian Republic," but were again surrendered to Great Britain in 1803, an arrangement which was finally confirmed at the peace of 1814. It was not till 1819, five years after, that the Republic of Colombia, of which Venezuela then formed a part, was declared independent, and not until 1831 that Venezuela separated from that confederacy and claimed an independent existence.

It is thus clear that, as Lord Salisbury says in one of his despatches in reply to Secretary Olney, Great Britain possessed the colony of British Guiana before Venezuela came into existence as an independent state. It is true, however, that the boundary between the two countries has never been formally delimited with the consent of both countries. The exact time or occasion of Venezuela's first objection to the British occupation of any portion of the territory over which she holds sway does not appear. It is said that she did so when the Schomburghk line was laid down, or, rather, when Sir Robert Schomburghk's final report was made, about 1844. But by how much reason and moderation her objections were characterized may, perhaps, be inferred from

the fact that, whereas, according to Sir Robert Schomburghk's report, the territory of British Guiana embraces a surface of about 76,000 square miles, if the claims of both Venezuela and Brazil were admitted in full, that territory would be reduced to but a little more than twelve thousand square miles—a rather serious reduction. We are not aware that Brazil is now making any complaint in the matter. A fact which, in addition to his great ability as an explorer and geographer, creates a strong presumption in favor of the approximate correctness of Schomburghk's conclusions is, that he seems to have followed the natural divisions of the territory, assigning to Guiana the region drained by the Essequibo, while leaving to Venezuela nearly all that drained by the Orinoco.

President Cleveland takes his stand on the nebulous Monroe doctrine. This, according to his interpretation, or rather, as Lord Salisbury shows, development, of it, empowers and requires the United States not only to see to it that no European power shall be permitted to plant a new colony, or extend one already existing, on this continent, or to impose the European monarchical system upon any American state—which seems to be all that President Monroe contended for, and which Great Britain is perfectly willing to accept, and, indeed, even originally suggested. The great Republic is, according to President Cleveland's contention, also to exercise a kind of guardianship over all American republics, and prevent any interference by a European power which may threaten to affect her own (the United States') interests in even the remotest way.

The President's request, which he and his predecessors have been urging upon the British Government for many years, is simply that Great Britain consent to refer all questions touching Venezuela's claim in the boundary dispute to arbitration. This request Secretary Olney, under the President's direction, changed, in his despatch of July last, into what is virtually a demand, to be refused by the British Government at its peril. Lord Salisbury's reply to this rather peremptory document is contained in two despatches, both dated Nov. 19th last. In the first he confines himself exclusively to answering Secretary Olney's long argument in support of the Monroe doctrine, as interpreted by President Cleveland. The British Premier lays stress upon two main contentions: first, that no such article of international law as the Monroe doctrine has ever been proposed, much less accepted, in any representa-

tive or authoritative council of nations. Second, that, even if admitted as a principle of international law, such principle could have no application to the Venezuelan dispute, seeing that no question either of colonizing or extending European possessions in America, or of imposing a European system of government upon an American state, is involved. In his second despatch Lord Salisbury reaffirms the position which has steadily been taken by his predecessors in office, viz., that the British Government cannot consent to refer to arbitration any claim of Venezuela to territory within the Schomburghk line, such territory having been in the possession of Great Britain for more than half a century, and being occupied by British subjects, whom Great Britain cannot hand over or abandon to the dominion of another nation, certainly not to so uncertain a protection and guardianship as Venezuela can offer.

It was on the receipt of this reply that President Cleveland wrote his now famous message to Congress, sweeping aside without formal reply Lord Salisbury's arguments, and calling upon Congress to make an appropriation from the national funds for the expenses of a commission to be appointed by himself, to determine the true boundary between Great Britain and Venezuela, the implication clearly being that, when that boundary shall have been so ascertained and determined, the United States will proceed to enforce it upon the recalcitrant power.

We should have added that Lord Salisbury, like his predecessor in office, expressed his readiness to submit to arbitration the right of Great Britain to any territory in dispute between Great Britain and Venezuela not included within the Schomburghk line, a concession which includes much territory of great mineral value.

Secretary Olney puts the British's Government's position thus :

"She (Great Britain) says to Venezuela: 'You can get none of the debatable land by force, because you are not strong enough; you can get none by treaty, because I will not agree; and you can take your chance of getting a portion by arbitration only if you first agree to abandon to me such other portions as I may designate.'"

Lord Salisbury, in his turn, states the question thus :

"But they (the British Government) cannot consent to entertain or to submit to the arbitration of another power or a foreign jurist, however eminent, claims based on extravagant pretensions of Spanish officials in the last century, and involving the transfer of large numbers of

British subjects, who have for many years enjoyed the settled rule of the British colony, to a nation of different race and language, whose political system is subject to frequent disturbance, and whose institutions, as yet, too often afford very inadequate protection to life and property. No issue of this description has ever been involved in the questions in which Great Britain and the United States have consented to arbitration, and Her Majesty's Government are convinced that in similar circumstances the Government of the United States would be equally firm in declining to entertain proposals of such a nature."

He further applies the *reductio ad absurdum* to President Cleveland's contention as follows :

"But the claim . . . is that if any independent American State advances a demand for territory of which its neighbor claims to be owner, and that neighbor is the colony of a European State, the United States have a right to insist that the European State shall submit the demand and its own impugned rights to arbitration."

It is pleasing to observe that the American press and public are now adopting a much more moderate and reasonable tone than at first, and that in a very large number of instances the Christian churches have denounced in the strongest terms President Cleveland's jingopolitics. We may happily rest assured that the British and American people are not going to enter upon a barbarous and fratricidal war.

#### MILITARISM AND PUGILISM.

IT is reported in some of the dailies that in at least one great American city the members of an important military club got together and indulged in a round of congratulation and jollification in view of the warlike message of President Cleveland and its endorsement by the United States Congress. We can well believe it. At first thought we might expect that the professional soldiers, as those upon whom the burden of hardship, privation, and danger incident to war bears with special weight, would from personal and selfish reasons, to say nothing of higher sentiments, be the foremost to dread and deprecate an outbreak of hostilities. But all observation proves that this is not the case. As a rule, it is the military classes who are the readiest to provoke war, and the most eager to rush into it. This, of course, is not hard to explain. Were there no wars there would be no chance of distinction, of promotion, of military glory. Armies may, in rare cases, be guarantees of peace. There can be no doubt that they are much more frequently the direct or indirect causes of war. Those who deliberately stimulate and

cultivate the war passion in the youth of a people assume a terrible responsibility. They use the influence which should be consecrated to higher ends to retard the progress and triumph of the highest civilization.

Akin to the demoralizing influence of military mimicries, and scarcely less mischievous, is the tacit encouragement given in so many of the English and, we fear, in some of the Canadian schools to the unmanly practice of boxing. In conversation, not long since, with a minister for whom we have the very highest regard, we were not a little astonished, we might almost say shocked, to hear him, while praising (he was a Scotchman) the extraordinary virtues of the *laws*, vigorously and frequently applied, as a cure for the depravity of the boy nature and a means of higher culture, and recalling his own school experiences in the land of the heather, express the opinion that the personal encounters between the boys, which were no uncommon occurrence in connection with those schools, "did them no harm." The tone of the reverend gentleman seemed to indicate that, in his opinion, these trials of brute strength were rather a means of good, and a thing to be encouraged on the whole. This view, we submit, places the degrading practice of pugilism—a practice which is rapidly coming under the ban of the law in all Christianized countries—in a false light. The ability to strike hard from the shoulder, on which the average Englishman prides himself, may help to make him an object of dread to less pugilistic races, but its effect upon character, individual or national, can be only bad. It fosters the arrogance which is one of the most disagreeable of British traits. It debases the moral sense by implying that questions of right and wrong can be settled by brute force, or by physical agility or endurance. It stimulates the degrading passion of anger by encouraging its frequent indulgence. It sets up a low and false standard of true manliness. It perverts the true notion of British "fair play," of which we are so fond of boasting. And, worst of all, it tends to lessen moral courage in at least an equal ratio with its development of physical courage. It often makes a noble-spirited youth more afraid of being thought a coward than of becoming a bully, or violating his highest notion of right. Alas! for the moral influence of the school when bullies tyrannize on the playground, when little disputes are settled by fisticuffs, and the weight of public opinion is on the side of the boy who would rather do wrong than suffer wrong. There is no quality which needs to be more assiduously cultivated in the schools than moral, as distinct from and often in contrast with, physical courage.



## Special Papers.

### \*ART—HISTORICAL OUTLINES: ARCHITECTURE, SCULPTURE AND PAINTING.

#### PART I.

MISS ANNIE BIRNIE.

The dictionaries define art as "skilled labor," and perhaps not a few regard works of art as something which almost anyone could do with a little training, provided he had the inclination and liking for that kind of thing. But art is more than skilled labor. It is the expression in a visible form of that which is our highest ideal, and in proportion as our conceptions are exalted, our emotions pure and intense, and our powers of expression definite and forceful, so is our art noble and beautiful. It would be a mistake to conclude that because some lack the power of embodying their ideas in some shape, they have nothing in common with the artist and his art. Many are artistic in their natures, only lacking this final gift of expression, and it is greatly owing to the recognition, sympathy and comprehension of these that art exists.

As the individuality of the artist makes itself manifest in his work, so is the culture, refinement and morality of a nation shown in the character of its art, and the history of the beginning and development of art is interwoven with the history of the rise and progress of nations.

Far back in the dusk of the early ages may be discerned the first faint shadows of those arts which in these later times are become the glory and honor of all civilization, namely, the arts of architecture, sculpture and painting.

Sculpture and painting have been designated "fine arts," as their mission is to bestow beauty and delight, while the element of utility in architecture has led to its being ranked among the useful arts. However, this is a matter for debate, and those who are notaries at the shrine of architecture declare her the superior of all other arts, and exalt her work as a witness of the truth of history, a recorder of the great deeds of the past, and a benefactress of humanity in establishing cities, promoting commerce, and creating a spirit of patriotism, in which consists the truest life and strength of a nation. To these may be added the dignity of its greater antiquity. Besides, while sculpture and painting are founded on the principle of imitation, architecture is an act of invention and bears witness to the god-like faculties with which the Creator has endowed man.

So we will turn first to architecture, the oldest of the arts, and we find that its discovery can be ascribed to no particular nation, as in all lands man has from the first erected structures for the purposes of shelter, safety, or worship, and among primeval man, when one first emerged from his cave, and bending together young trees, covering the open spaces with boughs, made his abode above ground, raising his walls skywards, an important step was taken in the history of architecture, and when trees possessing some peculiarity of shape were selected for building purposes, the era of taste was begun.

Sculpture, too, may be said to have risen literally from the dust. By a little flight of imagination back about 5000 years, we may behold some nomadic wanderer curiously inspecting the lumps of clay which have become hardened by the action of his watch-fire, and resolving to mould for himself some vessel which shall be more convenient to his purpose than the gourd shell which has been his only utensil in the past; and thus modelling in clay was begun, which in process of time has developed into the glorious art of sculpture.

Likewise painting is the invention of no particular people, for the device of picture-writing is common to all tribes of men, from the animal-like Hottentot and ignorant Esquimaux to the aborigines of our own continent.

Bible history leads us to suppose that the immediate descendants of Adam knew something of building and working in metal, and early mention is made of images; but after the dispersion of the races throughout Asia and Egypt, although a knowledge of these arts was carried with them, yet

much was lost, and in many tribes a state of complete ignorance and degradation ensued, inasmuch that a knowledge of these things was dependent on their rediscovery.

It must be admitted, however, that the races which soonest secured a permanent dwelling-place, and settled nearest to the first abode of man, seem to have retained somewhat of the knowledge of their forefathers. Thus, in Assyria and Hindostan are found the earliest specimens of picture-writing or hieroglyphics.

The earliest people to make any progress in the arts were the Chaldees and Assyrians. Herodotus tells us that Babylon and Nineveh, the first-born cities of antiquity, contained many magnificent temples, the walls of which were covered with hieroglyphics and sculpture.

The ruins of these cities, silent and forsaken for ages, teach us that architecture, sculpture and picture-writing had made distinct progress about two hundred years after the flood.

Egypt, called the mother of the arts, undoubtedly derived her knowledge from these older civilizations, and as her obelisks, sepulchres, and temples exhibit a similarity of design to those of India, we may suppose that the pathway of the arts was from Assyria, through Hindostan, into Egypt. It is probable that the rude piles of stone found not only on the plateaus of Asia, in the islands of Japan and Great Britain, but also in the new world, were similar to those erected by the patriarchs, and that these ancient piles of stone were raised as sacrificial altars, or in commemoration of some great event. From such simple monuments were evolved the sky-piercing obelisks and pyramids, and the huge temples of Egypt.

From Chaldea to India, through Egypt to Greece, may be traced the progress of the arts.

In Egypt, carried thither by a colony from Hindostan, architecture and sculpture assumed such magnificent and stupendous proportions as to fill the world with astonishment, even to the present day.

The temples, obelisks, and sculptures of Egypt were on a colossal scale. Egyptian art seems to have been dominated by a sense of the vast, the mysterious, and the eternal. They built to endure throughout the ages, and their carved sphinxes and griffins watch over the ancient ruins of their land with faces which seem to express the consciousness of some impenetrable and hopeless secret.

It is to the refined and pleasure-loving Greek that we are indebted for the lighter grace and beauty which now charm us in architecture, sculpture and painting.

Painting at this early period seems to have been the least advanced of the arts. The most ancient specimens of painting were skiagrams, or simple outlines, stained in two colors, generally yellow and sky-blue. These colors were more brilliant and indelible than any modern manufacture can produce.

The chief characteristics of early Egyptian painting are decided strokes, simple outline, and an almost comical absence of detail.

From Egypt a knowledge of the arts was imparted to the early Greeks.

About 1500 B. C., Cecrops, an Egyptian, founded a colony and built a city, which was afterwards called Athens.

At first the same colossal proportions were exhibited, and not until the fifth century from the founding of Athens do we find that the colossal style had been exchanged for the natural, and that refinement of taste had developed simplicity of design in architecture. From this period the progress of art was rapid. No doubt the struggle of the Greeks for freedom, and the establishment of the Athenian Republic, hastened the perfection to which Grecian art attained. The enthusiasm and delight with which the newborn liberty inspired the Greek found expression in those noble statues and temples, erected to heroes and to the gods, which have been the study of all succeeding generations.

The progress of architecture was marked by the materials used in the temples of the Greeks. First wood, then brick, afterwards stone, unhewn, or partly hewn, and, lastly, polished marble.

Classic architecture has been arranged under five heads, called *Orders*, named after the localities in which each first appeared.

The three classic orders of antiquity are the Doric, Ionic, and Corinthian. To these were

added, by the Romans, the Tuscan and Composite orders. The Doric and Tuscan are models of elegant simplicity. The Corinthian, the most beautiful of all the orders, is crowned with foliage, as if the marble had budded and brought forth blossoms and leaves. The Composite order, a combination of the others, is heavy and overloaded with a profusion of ornamentation. The Parthenon at Athens, of which we have all seen engravings, is a perfect example of the Doric style, while the Composite style may be found in the ruins of those triumphal arches and columns erected by the Romans.

Before proceeding farther with the history of architecture and sculpture, we will trace the development in Greece of the sister art of painting.

The Greeks, at first, like the Egyptians, used the cestrum, or hard-pointed pencil, for skiagrams, or outline pictures, drawn on some yielding surface, as plaster or papyrus. The second step was the monogram, an outline with the addition of lines within the figure, from that to the monochrom, or painting in one color; then the mezzotinto, or stained drawing, was raised to the rank of a legitimate painting by the use of many colors; and, finally, a scale of coloring, or harmony, was developed without which a painting in these later times is pronounced to be only a daub.

Although ancient writers allude to a picture entitled, "Battle of the Magnetes," which sold for its weight in gold about 700 B. C., yet it was not until about 450 years B. C. that the softer style of painting with a brush was adopted.

At first, a knowledge of composition, the art of grouping objects in a picture, was unknown, and the magic of perspective, that most wonderful of all art secrets, was not revealed; but about 400 B. C., Apollodorus, the father of painting, in Greece, was successful in chiaroscuro (ki-ah-ro-skoo-ro), the blending of light and shade, and, taking nature as his model, soon displayed all those tones of color, light and shade, which are so admired in the pictures of to-day. Many artists of this period were also sculptors.

Among the distinguished names of ancient art, one of the most famous is that of Phidias, who, exchanging the pencil for the chisel, instituted the reign of the *Grand Style*, a style half real and half colossal, in which not only the finest marble, but also precious metals and jewels were used.

About 400 B. C. the reign of the Grand Style was over, and a new era in art commenced, in which the beautiful and natural were studied, and life-size proportions were accepted as the standard of perfection. This style, called the *Graceful*, has reigned supreme ever since.

Vensis, Parrhasius, Protogenes and Apelles, are noted names of this period, and it is of these artists so many charming anecdotes are related concerning their trials of skill.

The Grecians held in the highest estimation a man who excelled in painting, or in sculpture. Works of art were judged and rewarded by the most eminent members of the General Assembly of Greece, and Socrates properly expressed public opinion when he declared that "artists were the only wise men."

(Concluded in next number.)

### PUBLIC SCHOOL "FAILURES."

If it be true that great wits are near allied to madness, it is even more true that "promising" boys are separated by the thinnest partition from "naughty" boys—when, indeed, they are separated at all. For boys who have those exceptional powers, or those exceptional developments of character that may make remarkable men of them in after-life, are necessarily unlike other boys, and, consequently, harder to keep within the hard-and-fast lines of school discipline. And, of all the evils that are wrought by want of thought, the habit of carelessly branding certain boys as "bad" is as deadly as any. To give a boy a bad name is to make virtue more difficult, and vice more easy, for him all the rest of his life. And what are the faults for which a boy is generally thus branded? Not, as a rule, for the really grave moral shortcomings, not for any but one of the seven deadly sins—and, in the case of that one, the real cause is as much weakness or ignorance as anything else. But boys are branded "bad" because of their high spirits, or their restlessness, or misapplied energy; or because they have been ill-trained, or suffered from bad examples at home, or have never been taught

\*A paper read before the East Grey Teachers' Institute, at Collingwood, October 25th, 1895.

to guard against some hereditary tendency. And boys, though they are full of fine aspirations after the beautiful and good, are yet necessarily ignorant of the exact balance between right and wrong, and, being prone to set up their own imperfect standards, they are at all times liable to temptations, the full danger of which they quite honestly fail to realize.

Herein lie the causes of that terrible pathetic "wreckage" which people have been long accustomed to consider inseparable from our educational system. Boys are expelled—it is necessary for the well-being of the school that they should be expelled; a heavy cloud of disgrace or disappointment settles upon some peaceful home, and a young life is blighted—self-respect, confidence, hope are gone. Yet the lad is a human being, probably neither better nor worse than his fellows, and with infinite possibilities of good or evil. He has a future before him, he will have to go on living, to choose a profession, to exercise a subtle but powerful influence upon the men with whom his lot is cast; he will probably marry and have children of his own. The boy is the father of the man, and he has to be reckoned with. If he is treated as a bad boy, he will probably grow up a bad man. The present writer well remembers a school-fellow of his who, being caught smoking, and treated with much severity, got it into his head that he was by nature among the blackest of the black sheep, and became, as a consequence, utterly reckless of what he did, shrinking from no wickedness that was presented to him, and recognizing no law but that of the schoolboy code of honor, which alone did not seem to him arbitrary and unreasonable.

It was that schoolboy code of honor that saved him in the end. And only men who are in such intimate sympathy with boy-nature as to be able to give all moral considerations the force of a schoolboy code can help boys when they get into disgrace—no man who holds the Calvinistic "black-sheep" theory can help them, but a man who believes in them, who treats them (to use the noble language of the Prayer Book) as "members of Christ, children of God, and inheritors of the kingdom of heaven."

To be able to make goodness intelligible and acceptable to such boys, and to combine sympathetic comradeship with that smart military spirit of order and ready obedience which every boy instinctively appreciates—these powers, founded upon an invincible belief in humanity, are what is necessary for success in the very difficult department of education which we are considering. No hard-and-fast method of mechanical routine will do for boys who have failed just because routine was insufficient for them; nor is any amount of parental care likely to restore boys whose very existence is a proof that domestic influence does not always succeed. Emigration, that forlorn hope of despairing parents, is a remedy that is a hundred times worse than the disease. Yet a change of treatment, of circumstances, a fresh start in life, are imperatively necessary. But, until recently, it was next to impossible for parents to find a school where such cases were made a special study, and a good start in life given to boys who were unsuited (as many are) for public schools, or had been withdrawn from them.

We have lately been able to study the work of a gentleman who has established such a school, and has already met with quite remarkable success. In a country house near London he has for some years been training boys who had been given up by the public schools, and he claims never to have failed—a claim that is the more remarkable since many of his pupils are grown up, and some are even married and settled down. His boys, he says, have turned out some of the best and strongest men he has ever known. As for method, he denies having any particular secret, beyond the common-sense which comes from strong personal sympathy with boys, a wide experience in educational matters both at home and abroad, and a life-long devotion to the particular work he has taken up. That his success is due to a rare instinct in dealing with boy-nature, and a strong personal character in which kindness and firmness are blended, is evident to any one who has visited his school (as we have done), and has noticed the bright alacrity and personal attachment of his boys. He is well known to many of our headmasters, and his work has been warmly commended by educational experts; but public advertisement is,

by the nature of the case, impossible. We are, therefore, very glad to put before those of our readers whom it may concern the work of a man who alone supplies at present a very real want, by carrying out the principle which Montesquieu attributes to St. Louis, and which is the secret of all moral reform: "The evil is taken away by causing one to think the good."—*P. D., in London Journal of Education.*

## Mathematics.

Communications intended for this department should be written on one side only, and with great distinctness; they should give all questions in full, and refer definitely to the books or other sources of the problems, and they should be addressed to the Editor, C. CLARKSON, B.A., Seaforth, Ont.

To all the readers of this department, greeting and Happy New Year! In accordance with time-honored custom, we present a group of problems contributed by subscribers who wish to obtain solutions. They come from all quarters; some from that fruitful island in the eastern part of our beloved Canada where the student trims his evening lamp to the soft moaning of the homeless sea as the gentle tide laps along the coast of New Brunswick; some from the foot of the Rocky Mountains where the student plies his evening task, with the long howl of the wolf sounding in the far distance; some from the western isle, where the student sits by an open window and hears the long rollers of the Pacific fall with subdued murmur on the sheltered beach of Georgia; all come from men the workers, men our brothers, ever reaping something new; and all are welcome, though some have waited six months for space to get themselves printed. We invite every reader to look them over carefully and send solutions of as many as possible. The best solutions will be selected for publication, and all will be duly acknowledged and properly credited. By helping others we shall ourselves grow stronger. We respectfully ask all our correspondents to copy with minute accuracy every mark and symbol intended for the printer, so as to prevent mistakes and obscurities. Study brevity and condensation, for our space is a limited quantity; test results carefully; write on one side of the paper only; mark your parcel "Printer's copy," and one cent will pay the postage on four ounces.

### PROBLEMS SENT FOR SOLUTION.

1. If the price of gold be 4 guineas an oz., what is the value of a gold ornament weighing 3 oz., of which 18 parts out of 24 are pure gold, allowing 3s. 4d. per oz. for the value of the alloy and 25 per cent. upon the whole for expense of workmanship?
2. A train leaves Toronto for Collingwood, 95 miles, at 13 miles an hour; another leaves Collingwood for Toronto at the same time, but goes 23 miles an hour. When will they be just 5 miles apart?
3. A. sets out from London to York and B. at the same time, from York to London, both travelling uniformly. A. reaches York 25 hours, and B. reaches London 36 hours, after meeting. Find the time in which each performed the journey.
4. A man engages to do a piece of work in 20 days for \$30. After doing  $\frac{3}{8}$  of it in  $15\frac{1}{2}$  days he finds he cannot complete it in time and he gets the assistance of another workman, and they finish it together in the allotted time. How long would the second man take to do the work, and how should the money be divided between them?
5. A., B., and C. working together can do a piece of work in 5 days; B. can do  $\frac{1}{2}$  as much as A. and C. together, and C.  $\frac{1}{3}$  as much as A. and B. together. They receive \$60 for the work. Divide it fairly between them.
6. I can buy a farm for \$700 cash down, or for \$924 to be paid in 7 years,  $\frac{1}{4}$  part of the price at the end of each year. Which method will be the most advantage to me, allowing compound interest at 7 per cent.?
7. A publican uses measures that are false to the extent of 5 per cent., but his brewer gave him in every barrel only 35 gallons. The publican buys at \$5 a barrel and sells at 4 cents a pint. What does he gain on a sale of 200 barrels?
8. A boy hires with a farmer for \$100 a year and a suit of clothes, but, leaving at the end of seven months, receives \$50 and the suit of clothes. Find the value of the clothes.
9. If \$8,800 is required in Toronto to pay £1800 in London, Eng., find the rate of exchange between the two cities.
10. To pay for a house for 3 years, I can either pay \$450 cash or \$150 at the end of each year. By how much is one method better than another, money being worth 10 per cent.?
11. Which is the more profitable, to buy lumber at \$25 a thousand on 9 months' credit, or at \$24.50 on 6 months' credit, money being worth 6 per cent.?
12. Find the depth of a circular cistern which will contain 286 gallons of water, supposing its diameter to be 6 feet.
13. The three sides of a triangle are 20, 30 and 25 respectively; find the position of a point which is equally distant from the three angles.
14. A body has a velocity of 60 feet per second towards the north, and a velocity of 6 feet per second is given to it in each of 10 seconds towards the N.E. Find the magnitude and direction of the velocity at the end of 10 seconds.
15. A lift ascends with a uniform acceleration of 2-foot second units. After it has ascended for 8 seconds a body is dropped from it. In what time and with what velocity will it reach the ground?
16. A metal ring slides down a smooth rod 9 feet long. Divide the rod into three parts so that the time of sliding down each will be the same.
17. A body is projected at an angle  $\alpha$  and velocity  $v$ . Find vertical velocity at time  $t$ .
18. A heavy particle is projected from a point with a velocity of 60 feet per second in a direction inclined  $30^\circ$  to the horizon. Find distance from point of projection at the end of 2 seconds.
19. If London exchanges with Holland at a gain of  $6\frac{1}{2}$  per cent., when the rate of exchange is 35s. 6d. per £ sterling, what is the par of exchange?
20. A vessel containing water is placed in one scale of a balance and weighs one pound; a piece of wood s. g. .24 and volume 1 cubic inch is attached to the bottom so as to be immersed. What weight will now balance the vessel?
21. If the area of a section of a barometer be 10 times that of a section of the tube, and mercury fall  $1\frac{1}{2}$  inches in the tube, what is the true variation in the height of the mercury?
22. A hollow tube is introduced into the bottom of a cylindrical vessel through an air-tight collar; a large tube, with closed top, is suspended over it, so as not quite to touch the bottom. Consider the effect of gradually pouring water into the cylinder until it reaches the level of the top of the inverted tube.
23. When a power of 10 lbs. is applied to lift a weight through 2 inches the power descends through 3 inches. What was the weight?
24. On counting out the marbles in a bag by 20's or 24's, or 30's, there are always 15 marbles left, but by counting them 25's there are none left. The least number that can be in the bag is required.
25. Place 4 posts in such position that one may be equally distant from the other three; the distance between the first and third twice that between the second and third, the distance between the first and second two-thirds that between the second and third. (This is given in the H. S. geometrical drawing book and I fail to get it.)
26. A conical tin vessel has a lid; the diameter is 24 inches (*i.e.*, of the lid) and the depth of the vessel is 18 inches. How many square feet of tin does the whole outer surface present?
27. A 20-lb. shot is projected horizontally from the top of a cliff 78.48 m. high, with a velocity of 80 m. per second. With what energy will it strike the ground?

NOTE.—This problem seems to be a sticker. Some good authorities claim that it will strike the ground with the same energy if let fall vertically downward, 78.48 m.

28. The radius of a circle is 8 feet; two parallel chords are drawn, each equal to the radius. Find the area of the zone between the chords. It will be sufficient to insert the rule for finding the area of the zone.

29. When first after 4 o'clock will the minute hand be midway between the figure IV. and the hour hand?

30. Explain any short method of reducing  $\frac{1}{16}$  to a repeating decimal.

31. A. leaves P. for Q., 39 miles distant, at same time that B. leaves Q. for P. They travel for uniform rates till they meet. B. then increases his

speed  $\frac{1}{3}$  and reaches P. in 5 hours from the time they met; while A., after resting for an hour, goes at  $\frac{1}{10}$  former rate and reaches Q. same time B. reaches P. Find rate at which each person set out.

32. The cost of manufacturing a certain article depends partly on cost of labor and cost of raw material. Wages rise 25 per cent., but a reduction of  $\frac{1}{3}$  in the cost of material enables the manufacturer to produce 16 of the articles for what 15 cost him before the change. How much does the raw material for \$100 worth of the manufactured article now cost him?

33. The sum of the squares of two numbers =  $a$  times their product and difference of their squares =  $b$  times their products. Show that A. exceeds B. by 4.

34. Assuming that we know when a number is exactly divisible by 9, how can we find the quotient without actual division?

35. Estimate the quantity of pure external air required per hour by one person, upon the supposition that the amount of carbon dioxide exhaled is 0.6 of a cubic foot per hour, and that the maximum amount of impurity admissible is 0.2 per 1,000 in addition to the 0.4 per 1,000 already in the air.

36. A man wishes to build a cart that will hold 3 cord feet; the cart is to be 3 feet high and 4 feet long. How wide must it be?

37. Suppose five candidates are examined for two scholarships, and that A. attains  $\frac{2}{3}$  of the whole number of marks given; B., twice as many as A. gets more than C., who obtained three times as many as B. gets more than D.; that D. obtained  $\frac{1}{2}$  as many as A., B., and C. together, and E.  $\frac{1}{3}$  more than the excess of the sum of A., B., and C.'s marks together over D.'s. Determine the successful candidate.

### PRIMARY EXAMINATION, 1895.

#### ALGEBRA AND EUCLID.

1. Find the factor by which  $x^3 + y^3$  must be multiplied to produce the product  $x^6 + x^4y + x^3y^2 + x^2y^3 + xy^4 + y^6$ .

2. If  $a = y + z - 2x$ ,  $b = z + x - 2y$ ,  $c = x + y - 2z$ , find the value of  $b^2 + c^2 + 2bc - a^2$  in terms of  $x$ ,  $y$ , and  $z$ .

3. Prove that four times the product of two consecutive integers differs from a square integer by unity.

4. Solve the equation

$$\frac{x+1}{x-1} + \frac{x+2}{x-2} = \frac{2x+6}{x-3}$$

5. (a) Simplify the fraction

$$\frac{(2x-3y)^2 - (x-2y)^2}{3x-5y}$$

(b) Factor  $7x^2 + 8xy - 12y^2 - 16x + 28y - 15$ .

6. Find the G.C.M. of

$$x^4 - 2x^2 + 3x - 2 \text{ and } x^4 - 2x^2 + 5x^2 - 4x + 3.$$

7. Four places are situated on a straight road in the order of the letters A, B, C, D. The distance from A to D is 34 m. Three times the distance from A to B is equal to twice the distance from C to D; and one-fourth of the distance from A to B added to half the distance from C to D is three times the distance from B to C. What are the respective distances?

8. If  $x = 2a - 3b$ , and  $y = 3b - 2a$ , prove  $(mx + ny)^3 + (nx + my)^3 = 0$ .

9. Given  $(3a - x)(a = b) + 2ax = 4b(a + x)$  to find  $x$ .

10. Two triangles which have the three sides in the one respectively equal to the three sides in the other are equal in every respect. *Eucl. I., 8.*

11. If a side of a triangle be produced the exterior angle is greater than either of the interior opposite angles. *Eucl. I., 16.*

12. *Eucl. I., 39.*

13. *Euclid I., 44.*

14. Equal triangles upon opposite sides of the same base have the line joining their vertices bisected by their common base, or the base produced.

#### SOLUTIONS.

$$1. x^5 + x^4y + \text{etc.} = \frac{x^6 - y^6}{x - y} = \frac{(x^3 + y^3)(x^3 - y^3)}{x - y}$$

$$\text{The factor is } \frac{x^3 - y^3}{x - y} = x^2 + xy + y^2.$$

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

$$\text{Also } a = y + z - 2x$$

$$b = z + x - 2y$$

$$c = x + y - 2z$$

$$\therefore a + b + c = 0; \text{ and, therefore, } (a + b + c)(b + c - a) = 0.$$

$$3. 4x(x+1) - 4x^2 + 4x = (2x+1)^2 - 1.$$

$$4. 1 + \frac{2}{x-1} + 1 + \frac{4}{x-2} = 2 + \frac{12}{x-3}$$

$$\frac{1}{x-1} + \frac{2}{x-2} = \frac{6}{x-3}$$

$$\frac{3x-4}{x^2-3x+2} = \frac{6}{x-3}$$

$$3x^2 - 5x - 6 = 0; x = 0$$

$$3x = 6; x = 2.$$

5. (a)  $(2x - 3y + x - 2y)(2x - 3y - x + 2y) = \text{Numerator of sum.}$

$$= (3x - 5y)(x - y); \therefore \text{Fraction} = x - y.$$

$$(b) 7x^2 = 16x - 15 = 7x^2 - 21x + 5x - 15 = (7x + 5)(x - 3).$$

$$-12y^2 + 28y - 15 = -12y^2 + 10y + 18y - 15 = (2y - 3)(-6y + 5).$$

Hence the factors must be

$$7x - 6y + 5 \text{ and } x + 2y - 3.$$

See *Public School Algebra*, by C. Clarkson, page 44, Ex. 60, for full explanation and numerous examples.

$$6. A = 1 + 0 - 2 + 3 - 2$$

$$B = 1 - 2 + 5 - 4 + 3$$

$$A - B = \frac{2 - 7 + 7 - 5}{3A = 3 + 0 - 6 + 9 - 6}$$

$$2B = 2 - 4 + 10 - 8 + 6$$

$$3A + 2B = 5 - 4 + 4 + 1 = 5D = 25 - 20 + 20 + 5$$

$$5D + C = 27 - 27 + 27 = E$$

$E \div 27 = 1 - 1 + 1$ , i.e.,  $x^2 - x + 1$ , which has no factors, and is easily found on trial to be a factor of A and also of B, and, therefore, their H.C.F. See *Public School Algebra*, pages 47, 87, 88, for full explanation.

7. Let  $AB = x$ ;  $BC = y$ ;  $\therefore CD = 34 - x - y$

Hence  $3x = 68 - 2x - 2y$ ; or  $5x + 2y = 68 \dots A.$

$$\text{And } \frac{x}{4} + \frac{1}{2}(34 - x - y) = 3y.$$

$$x + 68 - 2x - 2y = 12y; \text{ i.e., } 4x = 12y; \text{ or } x = 3y \dots B.$$

Hence from A,  $17y = 68$ ;  $y = 4$ ;  $x = 12$ ,  $CD = 18.$

8.  $(mx + ny)^3 + (nx + my)^3$  has for one factor  $(mx + ny + nx + my)$ ; i.e.,  $(x + y)(m + n).$

But  $x + y = 2a - 3b + 3b - 2a = 0$ . Since one factor of the expression = 0, the whole expression reduces to 0.

$$9. 3a^2 - 3ab - ax + bx + 2ax - 3bx - 7ab = 0$$

$$x(a - 3b) = 7ab - 3a^2; x = (7ab - 3a^2) \div a - 3b.$$

14. HINT.—Drop a perpendicular from each vertex angle to the base or the base produced. These perpendiculars are equal because the area of each triangle =  $\text{perp.} \times \frac{1}{2}$  common base. Apply I. 26 to prove equal triangles having each one right angle and parts of the line joining the vertices for hypotenuse.

#### CORRESPONDENCE.

TRUSTEE, West Oxford, sent a solution of No. 97, p. 59. He says: "Every family sending children to school would find THE JOURNAL a valuable addition to its literature. The boys inquire for it often before it arrives, anxious to settle some perplexing question, or to seek instruction in its pages. The plan of clubbing with other papers cannot fail to render THE JOURNAL more popular, and by a little effort on the part of teachers the subscription list might easily be doubled. In the Mathematical Department it is pleasing to observe so many able and willing workers and collaborators." These words seem to have a musical ring of good cheer. It is eminently satisfactory to THE JOURNAL to know that its pages are read and appreciated by a respectable number of intelligent trustees. There is, no doubt, an immense number of others who would support the paper if the teacher would call attention to the advantages to be derived from such a paper. Friends, make a note of this suggestion. With a larger patronage our own paper could open a special Pupils' Department that would be of great value to every progressive teacher, and make thousands of life-

long friends among the young people who will mould the public opinion of the twentieth century.

MATHETES, Toronto, sends three queries connected with the brief lecture on Subtraction, which appeared in this column Nov. 1st, 1895. The name of the writer is not given, so that we do not feel under any moral obligation to reply; and, secondly, the queries relate rather to the psychology of number than to mathematics proper. If MATHETES will conform to the well-established rule of all respectable journalism, and enclose his address, we shall be pleased to refer his suggestive questions to the "Professor."

M. JOHNSTONE, Brentwood, encloses "four problems with solutions, trusting that they may be useful to some one." He is a fair sample of the constituency to which THE JOURNAL appeals, earnest, generous, and free-hearted. He adds, "I have found the mathematical column of THE JOURNAL of great benefit, and have gained more knowledge of arithmetic from it than from any other source. I shall always be grateful for the aid which I have received." These kind words of appreciation must be pleasant to the army of contributors who have united to make this column a distinguished success; the practical proof of sincerity that accompanies them leaves no doubt behind. All honor to the true workers who are imbued with the spirit and temper of the Great Teacher. "Blessed is the man who has found his work," and knows it.

A. N. M., Dunville, says, under date of December 12: "There seems to be a fallacy in your solution of the equations  $x^2 + y = 7$ ,  $y^2 + x = 11$  (see December number). After getting  $y = -\frac{1}{2}$  on the supposition that  $x$  is a constant quantity, you proceed to regard  $x$  as a variable quantity, and to get its other values by substitution of the value of  $y$ , already obtained on the supposition that  $x$  is constant. The values obtained in this manner will not satisfy the original equations—as you pointed out—but only the indeterminate equation  $11x^2 + 11y = 7y^2 + 7x$ . The same objection seems to apply to your solution of No. 88. (See November number, p. 186.) Kindly let me know if you think this opinion is correct." It is undoubtedly correct, and we thank our correspondent for pointing out the fallacy involved. The detection of fallacies is an important part of mathematical training, and every teacher of elementary mathematics will find it extremely useful to put down plausible fallacies on the board and then set the pupils to expose them. In most treatises on logic there is a chapter on fallacies that would repay any earnest teacher for the labor of understanding the doctrine. For example, see John Stuart Mill's *System of Logic*, Book V. In this paper, a few years ago, we devoted the greater part of one number to mathematical fallacies. It is a fertile topic, and perhaps we may return to it again—when the High School arithmetic has had its day.

REMARK I. We wish to apologize in a general way to the many correspondents of 1895 whose letters had to wait for acknowledgment, often several months. For example, in rifling a certain pigeon-hole it comes to light that we have overlooked a neatly written letter, dated Nov. 28, 1895, from S. G., asking for a solution of No. 17, page 190, High School Arithmetic; and it is possible that in the mass of correspondence received we have unconsciously omitted several other important matters. If so, please repeat your questions, and practice a little forbearance. If the circulation of THE JOURNAL were quadrupled it could become at least sixteen times as valuable to each subscriber by doubling its size and by becoming a weekly. Who will help to develop it into the greatest educational paper on the continent? Will you introduce it to one new subscriber? Just give one day to a well-considered effort, and you will receive your reward. Many trustees and educated persons would support THE JOURNAL if they were asked. Send for specimen copies, and ask them.

REMARK II. During the past year the editor has conducted tuition by correspondence in Quebec, Ontario, Manitoba, and British Columbia, with successful results. The institution seems to have a real mission to those who are aiming to secure first-class certificates, and are unable to attend any school or college. Some of the congratulatory letters are preserved as omens of future success, and nothing succeeds like success."

## Examination Papers.

### EAST MIDDLESEX PROMOTION AND REVIEW EXAMINATION.

November, 1895.

#### GEOGRAPHY—2ND TO 3RD CLASS.

Time, 1 hour 45 minutes.

1. What direction from this school-house is Oxford County, Huron County, Strathroy, East Williams?

2. On the sides of an oblong, not less than three inches on each side, mark N.S.E. and W. In this map mark the school-house, and from it draw the road to your own house. Tell the names of roads marked on your map.

3. Draw a map of this county, mark and name your own township, and the other townships that touch it.

4. What river or rivers drain McGillivray, London township, and Delaware?

5. Make a drawing and write a definition of— island, peninsula, lake, river, strait.

6. What three continents from the Atlantic eastward to the Pacific? Which one is north-east, which one north-west?

7. Make three drawings and place them so as to show the shape and something of the relative distances apart and sizes of the sun, moon, and earth.

8. (a) What is the difference between a domestic animal and a wild animal?

(b) Name three domestic four-footed animals, and three wild four-footed animals, that you have seen.

(c) Name two domestic two-footed animals and two wild two-footed animals.

9. Of the following tell which are plants and which are animals: Cabbage, horse, iron, spider, water, oak, bat, earth-worm, wheat, salt, orange, boy, glass, grasshopper, sparrow, trout, hickory, fern, toadstool. (One-half mark for each one right, a half mark off for each one wrong.)

Value, 75 marks; 25 minimum to pass.

#### COMPOSITION—3RD TO 4TH CLASS.

Time, 2 hours.

Insist on neat, legible writing, and complete sentences. One mark off for every mistake in spelling.

1. Write in your own language the expanded and applied meaning of the lines:

Oh, many a shaft at random sent  
Finds mark the archer little meant;  
And many a word at random spoken  
May soothe or heal a wound that's broken.

2. Improve, giving your reasons, the arrangement in the parts of these sentences:  
I saw a squirrel run up a tree with a large bushy tail to-day.

The coffee-bean chiefly grows on equatorial islands in the torrid zone.

3. Write an account, twelve or fifteen lines, of two or three hours' stroll with pleasant companions through field and woods. In the course of the composition mention certain wild-flowers, berries, birds, mosses, ferns, creek, and the effects of the walk on mind and body.

4. On the 1st August, George Platt, Thorndale, bought of the Massey-Harris Co. a binder, for which he gave his note, payable in nine months, for \$105. Write the note.

5. COAL.—(1) Coal is useful for fuel to burn in stoves to cook food and to warm the house. (2) It is found in England and the States. (3) It is a black, hard substance. (4) It is far better than wood to burn in blacksmith shops, it makes such a hot fire. (5) Coal is dug out of holes in the ground, called mines. (6) There are coal mines in Nova Scotia. (7) There are two kinds, hard coal and soft coal. (8) Coal is better to burn on steamboats than wood, for it does not take so much room. (9) Hard coal burns without making smoke. (10) Coal was found not long ago in a place near Manitoba. (11) Soft coal is easier to light, but it makes a great deal of smoke.

(a) For how many paragraphs is there material in the above composition?

(b) What is the subject or topic of each paragraph?

(c) Referring to the sentences by number, which

sentences should go in each paragraph referred to in (b)?

(d) Combine sentences 2, 6, and 10 into one sentence, and improve the language.

(e) Combine sentences 4 and 8 in like manner.

(f) Combine sentences 9 and 11 also.

(g) In what order would you arrange the paragraphs named in (b)? giving your reasons for the arrangement you adopt.

Values—16, 10, 24, 10, 1, 9, 11, 6, 6, 6, 6.

100 marks a full paper; 33 minimum to pass.

#### HYGIENE AND TEMPERANCE—3RD TO 4TH CLASS.

Time, 1 hour 30 minutes.

1. (a) From which chamber of the heart does the lung or pulmonary circulation of the blood start?

(b) Trace the blood from that chamber until it enters the aorta (the great systemic artery).

(c) How is the blood changed in the lung circulation?

(d) How is it changed in its circulation through the body?

(e) Besides its most important use in supplying the blood with oxygen, state any other advantage of ventilating the school-room.

2. Explain the differences between the joint at the elbow and the joint at the shoulder.

3. (a) Name in order the organs of digestion, and write a note on the use or function of each organ.

(b) What kinds of food are suited to make the bones large and strong?

4. Why does the use of tobacco more injuriously affect young persons than adults?

Count 50 marks a full paper; 15 minimum to pass.

#### SPELLING—2ND TO 3RD CLASS.

1. The elephant, knowing the work was not managed much better, tried to deceive the overseer when the latter came to examine it.

2. Instead of taking vengeance on the painter, the elephant threw some water over his picture.

3. When grown people do not, on such occasions, show presence of mind, we certainly should not be disappointed when children do not show it.

4. Until the children were ready to fly,  
All undisturbed they lived in the tree;  
For nobody thought to look at the guy  
For a robin's flourishing family.

5. In those knobs of the stamens there grows a very fine, curious dust, which sticks to wasps and other creatures that rub against the stamens and pistils.

6. Axe, hoe, rake; Tuesday, Wednesday; week, month, year.

Value, 50 marks; for every error in spelling deduct 3 marks: in capitals and apostrophes, 2; in punctuation, 1. Dictate the punctuation marks.

#### SPELLING—3RD TO 4TH CLASS.

1. Look! white Indian pipes on the green mosses lie!

Who has been smoking profanely so nigh!  
Rebuked by the preacher, the mischief is stopped,  
And the sinners, in haste, have their little pipes dropped.

2. With many a curve my banks I fret  
By many a field and fallow,  
And many a fairy foreland set  
With willow-weed and mallow.

3. In that strange grave, without a name, whence  
his uncoffined clay  
Shall break again—O, wondrous thought!—before  
the Judgment Day,  
And stand, with glory wrapped around, on the  
hills he never trod,  
And speak of the strife that won our life with  
the incarnate Son of God.

4. She'll find my garden tools upon the granary  
floor;  
Let her take 'em; they are hers; I shall never  
garden more;  
But tell her, when I'm gone, to train the rose  
bush that I set  
About the parlor window and the box of mig-  
nonette.

5. Arithmetic, grammar, geography; nine o'clock, recess, holidays; teacher, scholars, trustees; village, city, province; rhubarb, cabbage, celery.

Value, 50 marks; for every error in spelling deduct 3 marks; in capitals and apostrophes, 2; in pronunciation, 1. Dictate the punctuation marks.

#### "ENTRANCE COMPOSITION."

Following is the analysis of an address and exercise on the above subject given by Mr. Keogh, Principal of the Peterboro separate school, at the Institute recently held in that town. It is not likely that the abstract does full justice to the address, but it contains hints which may be useful to many teachers.

Mr. Keogh defined composition as the art of finding appropriate thoughts on a subject and expressing them in suitable form. Entrance composition means less than the general term "composition," and Mr. Keogh read the syllabus of the work as outlined by the Educational Department for entrance classes. The subject of composition has two aspects—invention and style. With the latter, entrance work chiefly deals, though there is much to be done in the line described as invention.

Mental power is based on mental order, hence to train the mental power we must give them a training in mental order. All that can be expected in the entrance class is a beginning in this line.

The first laudable object in teaching composition is giving the pupil a good English style, then training to habits of mental order, then the ability to write a good composition. Entrance composition presupposes much knowledge on the part of the pupils along the line of grammar, and much of the work mentioned under the title of composition might better be included in the grammar period. Pupils lack variety of expression because their vocabulary is limited.

Train pupils thoroughly in literature, teach them to use their dictionaries, and the result will be a great increase in the vocabulary of the pupil.

Words are to ideas what the body is to the soul, and clear thought does not always beget clear expression.

Pupils have to be trained to express their thoughts logically, coherently, and suitably.

Choose subjects familiar and interesting to the pupils.

Mr. Keogh used the convention as a class, and by questioning its members he secured a number of thoughts on the subject, "Thanksgiving Day." These he wrote on the board as given, that they might be rearranged and serve as an outline for a written composition, to follow the oral expression of ideas.

Mr. Keogh favored completing each paragraph as it is written, rather than going over the whole composition afterwards. Pupils may read their compositions and a joint composition may be worked out on the board afterwards.

Call attention to the excellencies and defects. Have pupils write the compositions at school.

It is well to have pupils form plans of their own, occasionally select their own topics, and write compositions independently.

At a late meeting of the Toronto School Board, Dr. (Mrs.) Gullen victoriously led the opposition to the following recommendation of the managing committee, which had been referred back at a previous meeting: "That henceforth whenever a vacancy shall occur in the principalship of any of our schools containing eight or more class rooms, the same shall be filled by a male teacher holding a first-class certificate, and having at least five years' experience in teaching." Mrs. Gullen moved that the clause be struck out, maintaining, with the arguments she has frequently urged, that brute strength did not make the male any better as a principal, and that female teachers were as capable of performing the duties of the office as men. Another point was that the resolution excluded many capable teachers who do not possess first-class certificates. The matter was debated and Mrs. Gullen's motion carried in committee of the whole. Immediately, Trustee Fitzgerald moved, seconded by Trustee Bell, that the clause be reinserted. The yeas and nays were taken and Mrs. Gullen was victorious again.

## Primary Department.

### THE ROUTINE OF THE FIRST WEEKS.

RHODA LEE.

If at one time more than another patience is required in the schoolroom, it is during these first two or three weeks of the term. There is so much to be done before everything gets in the smooth-running, orderly state we desire, so many things to explain and teach.

The beginning of the term was a great trial to me when I commenced teaching, but after a few sessions I began to see how useless it was to expect the whole machinery to be in working order in two or three days. I learned not to despair even when, at the end of two or three weeks, the general orderliness of the room was not satisfactory.

Be patient. Remember that the children are unaccustomed to your ways, perhaps are strangers to the school and district. They may be trying, to the best of their ability, to please you, and yet fail utterly to reach your standard.

Be cheerful. Scolding, nagging, and punishing are the poorest tools you can use. Inspire the children with a desire to be orderly in every detail, quiet, courteous, helpful, thoughtful for the comfort of others, trustworthy—in short, to do their best in all things. In addition to the inspiration of a love of order, drill of different kinds is necessary—taking slates, standing up, coming to and going from class, position of attention, position when asking or answering questions; in regular questions, the pupil should always stand, and that without lolling on desk or seat when addressing the teacher—lining, marching, etc. All these movements should be quiet, orderly, and automatic. A command should be divided into two parts, the first consisting of a cautionary word; the second, the action-word. For instance, "Quick—march!" "Stand—up!" "Right-about—turn!" No motion is made until the second, or action-word is heard, and then all move together.

Like many other good things, this schoolroom drill has been carried to great and foolish extremes, which have been injurious to the children and of no possible benefit to the work; but a moderate amount, especially with little children, is necessary if we would avoid much confusion and disorder. Without doubt, quiet, steady, orderly habits reflect positively on character. I believe disorder would be impossible in a class in which pupils had been trained to stand, march, take and pass books, slate, etc., with uniformity and precision. The habit of prompt and exact obedience is the corner-stone of the temple of order.

It pays one to devote considerable time during the first week or two to these external matters. Thorough drill should be given in standing, marching, dismissing, distributing and collecting books, etc. This done, there will not be the same necessity for frequent reminders, such as: "Stand straight up!" "Quietly!" "In step!" "Softly!"

During the term, if the children become careless, have a ten-minute practice after four o'clock.

A word or two regarding the general work of the term. Try the experiment of making a specialty of one subject this session. It may be Composition, Vertical Writing, Geography, or any other useful subject. Make special effort in it; all branches of the school work will profit by the "hobby," if it be a good one.

Do not think that you have no time for anything beside teaching. You will do much better work if you are improving your mind in some other direction. Make time for reading, and give educational works their just share. Don't lose interest in your work. Let the New Year see rather increased interest and, consequently, better results. You may be sure that the children will meet you half-way in any whole-hearted plans for improvement or reform.

The following lines from an unknown author are suggestive, as we begin another year of school life:

#### KINDERGARTEN SONGS.

All night long the little stars blink;  
All night long they twinkle and wink;  
All night long, when we're fast asleep,  
Through the cracks in the shutters they peep, peep,  
peep,

But what do they do when the daylight comes?

When the sun wakes up and his big, round eye  
Stares and stares at the big, round sky,  
The little stars nestle right down in their nest,  
And their bright eyes close, while they rest, rest,  
rest.

And that's what they do when the daylight comes.

All day long, in the warm summer time,  
The posies blossom and creep and climb;  
All summer long, when the south winds blow,  
They nod their heads, and they grow, grow, grow.  
But where do they go when Jack Frost comes?

They wrap themselves in their faded gowns,  
And they take a trip to the rootlet towns,  
When the icicle fringes begin to grow,  
And the air is full of the snow, snow, snow.  
And that's where they go when Jack Frost comes.

And the little ones chatter the whole day long,  
Of building and weaving and lesson and song.  
And all day long, in the merriest way,  
They laugh, and they work, and they play, play,  
play.

But what do they do when the Dream-man comes?

They nod and forget all their joys and cares;  
And they fold their hands, and they say their  
prayers;

And under the blankets they gladly creep,  
And they close their eyes, and they sleep, sleep,  
sleep.

And that's what they do when the Dream-man  
comes.

—H. T. Hollands.

#### AN EXERCISE IN READING.

RHODA LEE.

The teaching of reading may be divided into three parts, viz., word-recognition, thought-gaining, and thought-expression. After a child is able to recognize words readily, he must receive a great amount of training in thought-getting before he will be able to express thought. The best training consists in giving the children short stories which they are required to read, and afterwards relate in their

own words. For this a large number of stories are necessary, as it is desirable that no two children have the same.

A simpler exercise, and one which should precede the above, consists of a short story or description written on the blackboard. After sufficient time for reading has been allowed the curtain is drawn over the story, and the children are questioned as to the facts of the narrative. Answers may be given either orally or in writing. If after the first reading the particulars do not seem to have been grasped, a second, or even third, reading may be allowed. By and by astonishingly good results will follow a single reading. This training is most important. How much some careful readers find in a single page, and how much others lose because of their inability to grasp particulars! The following lines, for which I am indebted to *School News*, Chicago, form an excellent exercise of this kind:

#### THE QUEER LITTLE HOUSE.

I.

There's a queer little house, and it stands in the sun.

When the good mother calls, the children all run.  
While under her roof they are cozy and warm,  
Though the cold wind may whistle and bluster  
and storm.

II.

In the daytime this queer little house moves away,  
And the children run after it, happy and gay;  
But it comes back at night, and the children are  
fed

And tucked up to sleep in a soft feather bed.

III.

This queer little house has no windows nor doors.  
The roof has no shingles, the rooms have no floors.  
No fireplaces, chimneys, nor stoves can you see,  
Yet the children are cozy and warm as can be.

IV.

The story of this funny house is all true;  
I have seen it myself, and I think you have, too.  
You can see it to-day, if you watch the old hen,  
When her downy wings cover her chickens again.

Write the verse on the blackboard, omitting the last two lines. Before asking the children to read, have a little talk with them concerning the various kinds of houses or homes that nature has provided or man made—nests, burrows, kennels, barns, etc., etc. Then draw back the curtain and ask the children to read and find out what kind of a house this is. After sufficient time has been allowed for reading, let them write the name of the house they think is described here. When the answers are read, test them one at a time, and see if they agree in every particular with the facts of the poem.

Allow time for another careful reading. Then ask the pupils to tell what they can about, 1st, the queer little house; 2nd, the children who live in the house. Answers will be as follows:

1st. *The house stands in the sun.*

*The little house is cozy and warm.*

*The house can move about very easily.*  
etc., etc.

2nd. *The children run after the house.*

*They have a soft feather bed to sleep in.*  
*They are very cozy and warm in their house.* etc.

A step in advance of this would be to write a story about "Mother hen and her chicks."

In classes where this is too difficult reading, the teacher might read the verses aloud, and make of it an oral reproduction lesson.

### THE GUEST.

Perhaps you have heard of Jack Frost,  
Who's travelling down from the north  
To give us a call, big folks and small,  
No matter what it may cost.

He sails on an iceberg, I know;  
And the wind is his captain and crew;  
And he reaches our shore somewhat before  
The beautiful lady of snow.

He's a reckless young fellow, is Jack!  
He has the wonderful knack  
Of pinching your ears, and bringing the tears,  
And giving your pitchers a crack.

He cries to the brooks, "Silence, all!"  
While he holds every bubble in thrall;  
And the best of skating's surely awaiting  
The boy who forgets how to fall.

But every one has his bright moods;  
And I think you may search many roods,  
And find no such wreaths as Jack paints as he  
breathes  
On the window a dream of the woods.

—Selected.

## School-Room Methods

### ALGEBRA IN THE GRAMMAR SCHOOL.

BY A BOSTON TEACHER.

The teacher who has the opportunity of teaching algebra at the same time with arithmetic is to be congratulated, especially if free to follow his own devices, unhampered by a text-book with its formidable definitions and strange-looking notation. It is surprising to find how much that is usually put in elementary text-books of algebra pupils in the upper grades of the grammar school already know, or can find out of themselves, with a few hints. Such formulæ as, interest = principal  $\times$  rate  $\times$  number of years, or  $i = p \times r \times t$ , and cube = tens<sup>3</sup>  $\times$  3 (tens<sup>2</sup>  $\times$  units) + 3 (tens  $\times$  units<sup>2</sup>) + units<sup>3</sup>, or  $c = t^3 + 3t^2u + 3tu^2 + u^3$ , are no bad preparation for handling literal quantities; negative quantities they are already familiar with in fact, though not in name; imaginary quantities, the only other point in which algebra differs from arithmetic, does not come within the scope of grammar-school work.

In algebra, as in many other things about which pupils cannot help having some knowledge, it is well not to begin at the beginning. Elaborate explanations and definitions, and much talk about  $a$  and  $b$ ,  $x$  and  $y$ , are appalling to the pupils, and make both teacher and subject seem idiotic. Now, there is something tangible about the algebraic solution of a problem, something which appeals to the practical mind of a child. This, then, should be the starting point.

I once had the good fortune to visit a bright teacher on the occasion of her introducing a class of the ninth grade to the study of algebra. It was a Friday afternoon, a time which was usually devoted to something outside of the routine work. The pupils were on the alert. They had no idea of what was coming, but expected something entertaining. The teacher announced that they would spend the rest of the day in what she was going to call mathematical recreations, and she trusted that they would find therein not only pleasure, but profit. Drawing a curtain from before the blackboard, she disclosed to the pupils a very simple problem upon which she said they would try a few experiments. The problem was as follows:

The sum of two numbers is thirty-two and the larger is three times the smaller. What are the numbers?

"If we know the smaller number, how should we find the larger?"

"By multiplying by three."

"Very well, I am going to call the smaller number 'I don't know what.' What ought I to call the larger?"

This sent a smile the rounds of the class and every one was eager to answer.

"Three times 'I don't know what.'"

"Yes; how else might we say the same thing?"

This puzzled them. She went on:

"You say that three times one dollar makes what?"

"Three dollars."

"Three times one 'I don't know what,' then?"

"Three 'I don't know what's.'"

"Now, we will put on the board what we have said thus far:

'I don't know what' = first number.

3 'I don't know what's' = second number.

Looking at what I have just written, tell me the sum of the two numbers?"

"Four 'I don't know what's.'"

"Look at the problem and see what we are told is the sum of the two numbers."

"Thirty-two."

"What follows?"

It took some time to think this out. At length one timid voice ventured—

"Four 'I don't know what's' equal thirty-two."

At this point the teacher touched lightly upon axiomatic truths, very lightly, for, of all things, she wished to avoid any unpleasant associations with this first day's work.

"Now, let us return to what we were writing a moment ago and add to it what we have just found out. We will draw a line under these two statements, and write below:

4 'I don't know what's' = 32.

If four 'I don't know what's' equal thirty-two, how much does one 'I don't know what's' equal?"

"Eight."

"We will write that. Now, look above and see what else one 'I don't know what' equals."

"The smaller number."

"Therefore?"

This time they applied their axiom more readily. "Therefore, eight equals the smaller number."

It took but a moment more to find the value of the other number, and to prove the answers correct. The teacher then commented on the cumbersome device which they had used, and said that mathematicians, in cases of this sort, took one of the latter letters of the alphabet as a starting point, usually the letter  $x$ . After a few words on the subject of mathematical conventions, she led the class through the solution of the problem again, this time representing the unknown quantity by  $x$ . You can imagine that after their minds had been prepared by that previous word there was no complaint:

"But I don't see why you use  $x$ ."

The remainder of the time was spent in the solution of easy problems, all of which could be done mentally. After half-a-dozen or so had been given out by the teacher she encouraged the pupils to make up their own questions. This was done easily and with great enthusiasm after they discovered that the answer was the starting point.

In a talk with the teacher at the close of the school, I learned that she intended to make problems the main work throughout the year, taking everything else incidentally, as far as possible. To quote her own words:

"I intend to make the associations with algebra as pleasant as possible, and, above all, to make the subject seem practical. I shall not lead them through vast tracts of addition, subtraction, multiplication, division, etc. That will come in a higher course, when there is need of great skill in manipulating literal expressions. I shall not for a moment lose sight of the fact that algebra is universal arithmetic, and those principles which the pupils have already learned in the course of their study of arithmetic I shall expect them, with very little help, to apply to algebra. Their knowledge of algebra I hope they will make frequent use of in arithmetic. Their text-book in arithmetic, note-books, and the blackboard are to be our only means of study of the new subject, except an occasional reference to the several algebras which I shall put upon the reading table."—*Journal of Education*.

### ORDER IN THE SCHOOLROOM.

BY KATHRYN LIVINGSTON.

"How shall I have good order in my schoolroom?" is the proverbial question asked by hard-working teachers.

Is this question of order the first question to be asked, or should the question, "How can I interest my pupils?" have precedence? Pupils who are deeply interested in their lessons find little time for mischief.

The teacher who talks the most about enforcing order often has the least orderly schoolroom. Good order is seldom secured by constantly talking of rules and regulations that "must be obeyed." No child enjoys commands.

If we step into a schoolroom and find the children in order, it is because each one is interested in something. If William masters a lesson before the others, then assign him some extra but interesting work to be accomplished.

It is the mistake of many teachers to threaten punishment to disorderly pupils. Do constant threatenings carry a weight that executions do? "Threaten seldom, but execute often," was an old schoolmaster's rule, and its results were gratifying.

The American boy takes a peculiar delight in being noted for his fearlessness, and a threat from a teacher becomes a challenge. His desire to accept it prompts him to dare, and he likes to see how far he can go before "something happens."

If the boy sees his teacher is annoyed and vexed, the boy has attained just what he sought, and the teacher has lost that amount of self-control. This is apparent to the boy; he loses that amount of respect for his teacher at the same time. Rarely does a teacher gain anything by a threat.

A teacher is regarded as a model. If she has a habit of talking loudly, walking heavily, and is abrupt in her manner, can she expect her pupils to be quiet, orderly, and gentle in their manner? The eyes of the pupils are always upon her, and children have quicker perceptions and arrive at correct conclusions oftener than older people give them credit for.

A teacher cannot at the same time enforce and violate a rule.

Another mistake in many teachers is in the fact that they always appear to be looking for something wrong, seem to be fearful that some rule will be violated, and show an anxiety and nervousness that bright pupils readily detect. Children do not like to feel that a teacher is looking for faults and imperfections in their characters.

A child distrusted, even once, has little encouragement to put forth his energies to merit a trust. No child is so wicked as not to feel a sense of gratification when conscious of being trusted. The class of teachers who really look for obedience will find it. Those who look for the best in their pupils will find the pupils putting forth their best efforts.

Every pupil has some commendable quality of character, and a teacher who puts forth her efforts to find out just that quality will have reason to congratulate herself; for, having once discovered it, she can conscientiously praise the pupil, and honest praise is never discouraging. Believe fully that a boy can do good work and that he can be trusted, and let him know that you believe it. This will be the means of developing more activity and integrity in him than weeks of hard drill upon lessons.

Treat any pupil with suspicion, and his force of character is weakened. The teacher who has faith in the motives and abilities of her pupils is a constant inspiration to them, a magnetic force that imparts a spirit of activity and hopefulness which must result in loyalty and success.

We would not exclude punishment as a means for establishing good order, for punishment is necessary; but, to be adequate, it must always be just, and the offender must feel the justice, otherwise its force upon him is lost. Let every pupil see the reasonableness and justice of every punishment. Bring out every manly and womanly attribute, every lofty and unselfish ambition.

The ideal school thus becomes a republic in which the prime object of government is to train the pupils to govern themselves. The school training thus becomes a training towards good citizenship, invaluable to them in future years. They learn the power of self-restraint, self-control, and self-mastery, which are the requisites of good citizenship, and one of the products of education. —*Popular Educator*.

## Book Notices.

**COLERIDGE'S PRINCIPLES OF CRITICISM.**  
With introduction and notes. By A. T. George. Boston: D. C. Heath & Co. Price 90 cents.

Under this title are here published chapters i., iii., iv., xiv., xxii. of Coleridge's "Biographia Literaria." These chapters are especially those dealing with Coleridge's early life, "Lyrical Ballads," and Wordsworth's poetry—all of permanent value in the history of English literature and æsthetics. Mr. George has supplied a suitable introduction and brief explanatory notes. The volume is beautifully printed and bound.

**WEBSTER'S INTERNATIONAL DICTIONARY.**

This is the age of great dictionaries. These are one of the hopeful signs of the times. The fact that powerful firms are spending millions in rival publications of this kind, each striving to outdo the other in the completeness and accuracy of their respective works, is remarkable. The fact that the circulation of these is so immense as to prove the existence of a demand for all, shows that the English language is not only spreading the world over with wonderful rapidity, but that it is being studied as never before by those to whom it is the language of speech.

To the teacher a good and comprehensive dictionary is simply indispensable. As we have often said in effect, it is among the first requisites of a properly equipped schoolroom. A schoolroom without a first-class dictionary is like a carpenter's shop without a square or rule.

We are often appealed to by teachers to say which is, in our opinion, the best school dictionary. We always decline to pronounce a definite opinion in favor of any one book. It is well, when possible, to have more than one. It is reasonable to suppose that each of those great works which have been produced by the labors of a large force of the ablest and most scholarly men to be found, for years, will have its peculiar excellencies, and that no one is likely to be best in all respects. Moreover, such comparisons are not only invidious, but are almost surely unreliable, as is evident from the fact that numerous good authorities are pretty well divided in respect to the comparative value of the great rival works. Each has his own favorite. Obviously no one is really entitled to declare one superior to all others until he shall have thoroughly examined each of the works to be compared, in all its parts and aspects, and qualified himself by an exhaustive study and mastery of the details of each. For this we have never had and do not expect ever to have time.

Messrs. Merriam & Co. have laid upon our table an office copy of Webster's International. We congratulate them heartily that this great work has now outgrown its mere American proportions, and aims at serving both hemispheres. It is a magnificent work. In the course of its various revisions, and especially during its last, which amounts practically to a renovation, it has thrown off its local characteristics, and fitted itself to become a standard wherever the English language is read or spoken. Its vocabulary of all kinds of terms, scientific and philosophical, as well as commercial and general, is so complete that failure to find a

word sought for, whether by the man of learning or the man of business, must be a rare phenomenon, indeed. Its system of marking pronunciation—a most important feature—is admirable in its simplicity. Definition has always been a strong point with Webster, and in this respect the International has, we believe, even improved upon its predecessors. Its series of supplements, explanatory and pronouncing gazetteers, dictionaries of proper names of various kinds, quotations, etc., make it a veritable cyclopædia, and an invaluable source of information on a thousand matters in regard to which every teacher has almost daily need of information.

## Literary Notes.

A recent issue of *The Babelot* is a noteworthy booklet containing the fragments of Sappho, in translations and imitations from many quarters. The exquisite taste in the printing of this little magazine should make all book-lovers desire a copy (five cents).

At the examination of the Institute of Chartered Accountants, held simultaneously in Toronto, and at the Ontario Business College in Belleville, on the 14th, 15th and 16th of November last, four graduates of Ontario Business College wrote in the intermediate examinations at Belleville, and all were successful; namely, Messrs. L. W. Marsh, accountant for the G. & J. Brown Manufacturing Company (Ltd.), Belleville; A. C. Baker, commercial master, Albert College; A. L. Matheson, on the staff of Ontario Business College; and M. S.

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The first issue of the *Atlantic Monthly* for 1896 opens with an unpublished Note Book of Nathaniel Hawthorne, now printed for the first time. There are also the opening chapters of a new three-part story by F. J. Stimson (J. S. of Dale), entitled "Pirate Gold." After two political articles of special interest to American readers come "The Country of the Pointed Firs," a short story by Sarah Orne Jewett; "The Johnson Club," being

an entertaining description by George Birkbeck Hill, of the meetings of Johnson enthusiasts; a sketch of provincial French life, by Mrs. Catherwood, "A Farm in Marne"; "Children of the Road," a study of child life among vagrants, by Josiah Flynt; and "The Schoolhouse as a Centre," by the editor of the magazine, a paper introducing the discussion of "The Status of Teachers" in subsequent issues. J. M. Ludlow contributes an able paper on "The Christian Socialist Movement of the Middle of the Century." There is a powerful installment of Gilbert Parker's "Seats of the Mighty," poems, and book reviews, and the usual departments. Boston, December, 1895.



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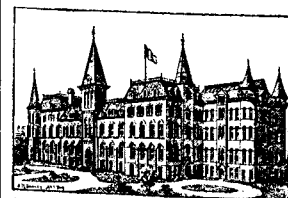
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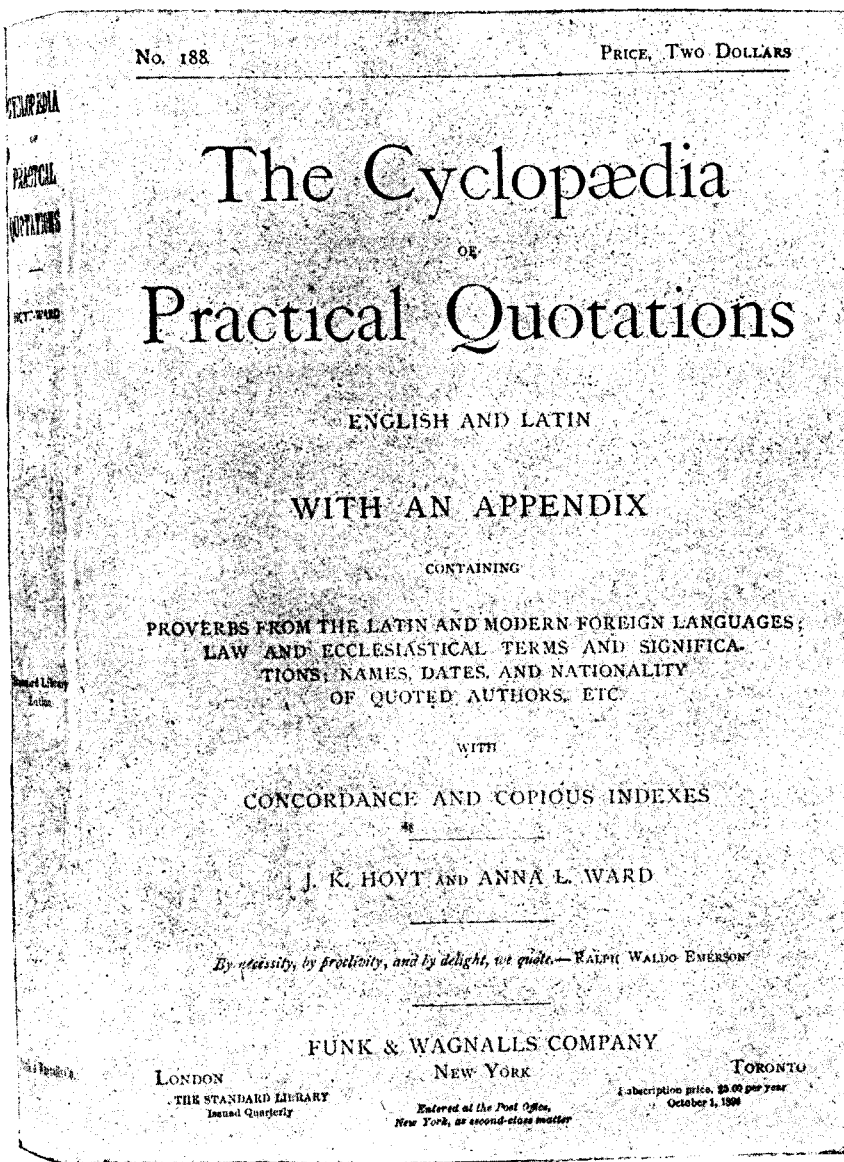
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## Official Calendar

OF THE

## Education

## Department

For the year 1896

January.

1. New Year's Day (Wednesday).  
By-laws for establishing and withdrawal of union of municipalities for High School purposes takes effect. [H.S. Act, sec. 7 (1) (2).]  
By-law establishing Township Boards takes effect. [P.S. Act, sec. 54.]

2. Polling day for trustees in Public and Separate Schools. [P.S. Act, sec. 102 (3); S.S. Act, sec. 31 (3).]

3. High Schools second term and Public and Separate Schools open. [H.S. Act, sec. 42; P.S. Act, sec. 173 (1) (2); S.S. Act, sec. 79 (1).]

7. Clerk of municipality to be notified by Separate School supporters of their withdrawal. [S.S. Act, sec. 47 (1).]

Names and addresses of Public School Trustees and Teachers to be sent to Township Clerk and Inspector. [P.S. Act, sec. 40 (10).]

15. Application for Legislative apportionment for inspection of Public Schools in cities and towns separated from the county, to Department, due.

First meeting of Public School Boards in cities, towns, and incorporated villages. [P.S. Act, sec. 106 (1).]

Appointment of High School Trustees by Public School Boards. [H.S. Act, sec. 12; P.S. Act, sec. 106 (1).]

20. Appointment of High School Trustees by Municipal Councils. [H.S. Act, sec. 12; Mun. Act, sec. 223.]

21. Provincial Normal Schools open (First Session).

28. Appointment of High School Trustees by County Councils. [H.S. Act, sec. 12; Mun. Act, sec. 223.]

N.B.—The Departmental Examination papers are not supplied by the Department, but can be obtained from the trade through Messrs. Rowell & Hutchison, Toronto.