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THE UNIVERSITIES AND THE SCHOOLS.

No one who pays the slightest attention to the progress of education in England can fail to be struck with the recently increased utility of the great English Universities as educational institutions. Oxford and Cambridge, after going on in the same groove for generations, if not centuries, suddenly sprang a few years ago into new life, and have ever since been to all appearance competing with each other in the race for such popularity as may be won by persistent efforts to come more and more in contact with the masses. The institution of local examinations, by passing which candidates can obtain a very important educational status and certificate, was a great step in advance, and fortunately it has proved an extraordinary success. The recognition of local colleges in such towns as chose to establish them was another move in the right direction. And now we have it stated that the University of Cambridge has agreed to conduct the examination of female teachers, who are trained for secondary schools by a voluntary educational association, with the prospect of Oxford joining in the work.

There is in all this an important lesson for our Canadian Universities. The old idea that these institutions, which in all countries form the apex of the educational pyramid, are to remain inert and be reached only by the few who can manage to climb high enough to get within the sphere of their influence, has been thoroughly exploded and abandoned. Henceforth they must do something more for the people who sustain them than merely educate those who are prepared to pass regularly from matriculation to graduation. They must be prepared to lend a helping hand to the educational toilers below, to widen the sphere of their influence, and take cognizance of a class of educational work not intended to prepare candidates for degrees at all. Such at least is the University theory now acted upon by both Oxford and Cambridge, and it is simply inconceivable that in Canada, where we are accustomed to boast of our progressiveness as compared with the old land, we shall lag long behind. Our Universities must throw themselves into the work of popular education, and the sooner the better, both for the cause of popular education and for themselves.

The University of Toronto has set the example in Canada of establishing local examinations for girls. It is not unlikely that others may follow in the same line, and as the Provincial University seems indisposed to go any further at present, it is highly desirable that they should do so. There is ample room for all who choose to take part in the work, though the State-endowed University enjoys some facilities for undertaking the task which others do not possess. It is to be regretted that the Senate of that institution is so averse to improved methods of working, and has such a dread of popularizing its function. Why, for instance, should the privilege of going up for these local examinations be confined to one sex? There are hundreds of boys in attendance at High Schools who are by their circumstances precluded from ever completing a University course, but that is no reason for refusing to allow them to go as far as they can. The degree of Associate in Arts, conferred by Cambridge and Oxford, would be a real distinction to all who could win it in the University of Toronto, and for those who intend to make teaching their life-work it would have as real, though of course not as great, a money value as the degree of Bachelor or Master of Arts. It would in Ontario be practically equivalent to the literary and scientific requirements for a first class Public School certificate, and might entitle the holder to qualify as a High School assistant. Even to those who never intend to teach, the examinations could not but prove beneficial. They would supply a standard to be aimed at in High Schools and Seminaries, and boys as well as girls, who could not hope to complete the larger University course, could work for the certificate showing that they have taken the narrower one.

To the University itself such an expansion of its sphere could not fail to prove beneficial. Boys who if left to themselves would never have thought of taking a full course, would frequently be prompted to do so by awakened ambition. The candidates for the University examinations have increased rapidly in number since the institution of the intermediate examination, and the consequent assimilation of the High School programme to the University curriculum. The extension of the system of local examinations, in the way above indicated, would cause them to increase still more rapidly, and prove the best means the University could use of drawing the youth of the country within its influence.

EDUCATIONAL COLUMNS IN LOCAL NEWSPAPERS.

There is no clearer proof that the interest in educational matters is spreading among the masses throughout America, than the fact that so many newspapers have "Educational Departments" in their columns. It is safe to say that their

proprietors do not act solely from motives of pure philanthropy in starting these special columns for educational matters. They find that the taste of the people is becoming so cultivated as to demand such information, and hence they hasten to supply it. This is encouraging to those who take an interest in the highest welfare of the human race. It is a practical refutation of the croaker's theory that the popular taste is growing worse instead of better. The educational columns of several of the local papers of Canada are ably conducted, and they cannot fail to secure a widespread and intelligent interest in all that pertains to the proper development of the youth of our country. In this connection, the following admirable remarks by a correspondent of the *Huron Expositor* are worthy of consideration:

"The fact that the whole population is deeply interested in education is sufficient guarantee that an occasional column on educational questions would be of general interest. I do not agree, however, that this space should become the medium for furnishing solutions and answers to a class of unworthy teachers, who have not enterprise enough to supply themselves with the ordinary professional tools in the shape of books and educational papers. They have their text-books; let them read them. For if they will not hear the CANADA SCHOOL JOURNAL, which gives solutions of teachers' and university examination papers for a dollar a year, together with a vast amount of useful information, neither would they hear though *The Expositor* gave them instruction gratis. I should object to see valuable space devoted to technical school-room matters—the parallelogram of forces, De Moivre's theorem, and other matters of that class; but as a means of intercommunication between teachers and other friends of education, I consider the assistance of the press invaluable. The friends of education are scattered and isolated; their influence is divided and weakened. United through the friendly medium of a newspaper, their influence would be multiplied and the benefits of their labors more widely diffused. I fancy there would be no difficulty in securing contributions of readable and useful matter; brief, pointed, and clear, each dealing with only one or two leading ideas at a time. One of the most valuable and interesting contributions, if it could be secured from parents and teachers, would be reports of cases which have occurred in the course of experience. A short history of successful methods of dealing with dull, unruly, or vicious children without perpetual pounding and rawhiding, would be read by everybody. Any clown can rule by force and fear, if he only has good nerves, a strong arm, and enough stupidity. Those who succeed in getting the young to educate themselves by appealing to higher motives than fear, should be able to supply examples of the superiority of moral influence over brute force. The operation of the school law, proposed improvements in any of our educational machinery from a blackboard brush to a minister, suggestions to parents and teachers, plans of study, means of self-improvement, criticisms of text-books (the most reliable ones to be had), information on general educational matters both home and foreign; these and kindred topics would furnish occasional columns full of interest to the whole reading population. The educational question is one on which we are all united, and in which we all feel profound interest. What is most wanted in Ontario at the present time is not so much further improvements in our educational machinery as an illumination of the public mind, the cultivation of higher views than mere utilitarian theories of education, the introduction of a better and more enthusiastic educational spirit. The press is one of the most potent means of accomplishing this desirable end, which will make Ontario to the Dominion what Greece was to Europe."

—Our readers will notice that this month, for the first time since the SCHOOL JOURNAL was started, we dispense with the portrait and biographical sketch on the first page. While we have reason to know that this feature of the SCHOOL JOURNAL has been greatly appreciated, it will be readily understood that material for keeping it up must in course of time become somewhat scarce. Henceforth the publishers propose to produce portraits and sketches as occasion seems to call for them, the intention being neither to discontinue them altogether, nor to issue them at stated times as heretofore. By coupling them with educational interests of importance, it is hoped that a new value will be imparted to this popular feature of the JOURNAL, which will more than counterbalance any irregularity in the appearance of the portraits.

—Many earnest teachers will be delighted to learn that the Convocation of the University of London has decided to request the Senate of the University to establish a *Degree of Education*. The following is a copy of the resolution adopted:

Resolved, That it is desirable that proficiency in the Science and Art of Education be recognized, not merely by the giving of a certificate, but by the conferring of a Degree; and this House requests the Senate either to institute a new degree for this purpose, or to add a fourth branch in which the M.A. degree may be taken co-ordinate with the three existing branches, Classics, Mathematics and Philosophy.

The following is an outline of the scheme of the examination prepared:

I. Logic, Mental and Moral Philosophy.
II. Human Physiology.
III. Educational Principles and Methods.
IV. School Management.
V. History and Literature of Education.

—Teachers and others interested in education should not forget the meeting of the Provincial Teachers' Association, to be held in Toronto on the 12th, 13th and 14th of August. The programme is an unusually interesting one.

—Hon. J. P. Wickersham submitted to the Legislature of Pennsylvania, during its last session, a bill, the main feature of which was a provision for the establishment of homes for friendless children, where they would be properly cared for, instructed in the rudiments of knowledge, trained in habits of industry and morality, and from which they should be placed in private families whenever proper persons could be found to receive them. We regret to learn that the bill was defeated.

Contributions and Correspondence.

TEACHING READING IN PUBLIC SCHOOLS.

BY PROFESSOR A. MELVILLE BELL, BRANTFORD.

There is an adage which, in days long gone by, was frequently quoted to me by my father, when we discussed theoretical professional points, and which I have come more and more to recognize as applicable to the Art of Teaching generally, namely, that "What is best administered is best." You may have a good plan, but fail by carelessness or inaptitude, to produce good results; or you may have an inferior method, and yet, by carefulness and tact, achieve comparative success. I hope to show you, from my own experience, a system of teaching Reading which is calculated to produce the best results if skilfully put in practice, and which I think cannot fail to work a large measure of improvement under any circumstances.

One of the chief drawbacks to success in teaching reading arises from the insufficient preparatory training of teachers. This is a disadvantage, however, which you can lessen or remove by your own efforts; which, indeed, you must remove, or be content with mediocrity where you might obtain distinction. The most advanced teacher is still a learner; and he should retain the learner's spirit when beyond the walls of the class-room. Within the walls, he is a fountain of supply only; without, he draws from every source the means of keeping the perennial stream of knowledge in full flow.

Your Association meetings tend greatly to this end. Here you teach and learn from each other. Here you find a range of standards for comparison. Here you have the advantage of mutual criticism; and you have also the most valuable opportunities for self-measurement, without which there can be no real progress.

The first point in teaching reading is to regulate the apparatus of speech. This involves nothing beyond the comprehension of the youngest pupils. The *modus operandi* is so simple that I may specify all necessary particulars even in this short section of a brief address. It is of course advisable that teachers should know more than they may be called on to communicate; such as the physiology of the chest, the diaphragm, the larynx, the pharynx, etc.; but for the training of their pupils it is enough to look on the whole apparatus of speech as a bellows, of which the mouth is at once the aperture and the handle. When you open the mouth you enlarge the passage to the lungs, and an influx of air from the atmospheric pressure naturally accompanies the act. Teach your pupils to open the mouth at the commencement of every utterance, and you will secure two important results at the same time: you will establish a habit of heartfelt, vocal respiration, and facilitate the acquirement of a style of sharp, distinct, and light articulation. The majority of persons—even public speakers—fail in a free opening of the mouth: they push the plastic organs—the lips and tongue—from point to point, without disengagement, and their utterance is consequently heavy and indistinct. The opening of the mouth before speech is the secret of ease, and fluency, and clearness.

Mr. Catlin, the author of a work on the North American Indians, recommends people to breathe only through the nose for hygienic reasons, and some teachers have copied the precept as if it were universally applicable. This is a mistake. There is wisdom in shutting the mouth when you pass from a heated room to a cold atmosphere, but there would be the reverse of wisdom in shutting the mouth every time you take breath in speaking, and in order to breathe solely through the nose you must close the mouth, either by means of the lips, or of the tongue and palate. Apply the theory of nasal respiration, if you can, while you are asleep—and stop snoring—or at any time when the organs are at rest, but not when they are in action in speech. You require an extra supply of air while speaking, and you want the largest possible channel for its entrance—by both mouth and nostrils. Use the jaw as the handle of your bellows, and the process will go on noiselessly and freely, replenishing the lungs by mere atmospheric pressure.

This maxillary action is apt to be overdone at first, or to be awkwardly done,—either by jerking the jaw downwards, by snapping it bitingly upwards, or by moving the head backwards. The desired action is more internal than external. The head should be perfectly still, and the movements of the jaw so light and floating as not to be in any degree obtrusive on the attention. But all art thus hides itself in facility.

"*Ars est celare artem.*"

The preparatory separation of the organs, which speech is to bring in contact, is really a mechanical necessity; it illustrates the same principle as that which raises the hammer before its downward stroke—which draws back the arms before the outward push—or bends the knees before an upward spring. Thus to pronounce the letter P—which requires the lips to be closed—we must first separate the lips in order to make their momentary contact light and graceful.

The second point in teaching reading is to make pupils pronounce the elements of speech correctly. I assume, of course, that letters are thoroughly known; but even with older people than school children it would not be safe to assume that sounds are practically familiar. Every syllable has, or should have, its definite impulse of sound, and every word its articulate boundary, delineated as clearly to the ear as the outline of the printed word is shown to the eye. This precision of utterance requires, on the part of the teacher, a perfect knowledge of the elements of speech. These are supposed to consist only of the two classes called "vowels" and "consonants," but they compose, besides, an unrepresented class of transitional effects or glides, on the use of which, although they have not been noticed by writers on the subject, a good pronunciation depends. The percussion which is heard between a consonant and a vowel in the same syllable should be regarded as a real element of speech, and as such the effect should be heard, even when no vowel follows the consonant. An example will give you a clear idea of what is meant by these consonant glides. Let us again take the letter P. This is said to be pronounced by closing the lips, but it really derives all its audibility from opening the lips after closure. The percussion of this opening is the glide of the consonant P. The same principle of organic separation applies to all consonants, each of which, when final, should be finished with a glide. Glides are thus transitions either to another phonetic element, or to a position of rest.

Your pupils, then, must be taught to pronounce every vowel with its true quality, every consonant with its glide or percussion, every syllable with a definite impulse, and every word or group of words compactly and with well-marked initial and final boundaries. The initial boundary will be given by opening the mouth; and the final boundary, if the concluding element is a consonant, by the articulate glide of organic separation. The latter, being the least obvious of the elements of pronunciation, requires special attention on the part of teachers.

The best exercise in pronunciation is the separate utterance of syllables. This would be easy but for the anomalies of orthography, which have accustomed us to an unphonetic syllabication. But in dealing with sounds we must disregard letters. Double consonants, for instance, are divided in writing syllables, but they must be treated as single consonants in pronouncing syllables. Thus we write *pos-ses-sion* as the syllables of the word *possession*, but we pronounce *pŏ-zĕ-shun*, but we must teach our pupils to analyze the sounds of words in the actual phonetic syllables. Combinations of consonants are divided in speaking—as in the word *apprehension*, which would be analyzed into *ap-re-hen-sion*—but otherwise every syllable (except the final syllable of a word ending with a consonant) will terminate with a vowel. You must not be misled, by any theory of so-called "short vowels," into supposing that you cannot end a syllable with a short vowel: you do so in every sentence. You certainly will never make your pupils pronounce well until you teach them to individualize syllables with the exact effect they receive in the concrete utterance of words and sentences. You cannot pay too particular attention to this point. A pure pronunciation is the rarest of all qualities both among pupils and teachers.

The third point in teaching reading is to distinguish the tones of the voice. Tones are not subordinate matters of mere taste and fancy; on the contrary, the tones accompanying the language are

the interpreters of its meaning. By the very same words you may express a variety of meanings, differentiated by tone alone. Tones must then be considered as essential elements of speech, and carefully discriminated. This is not a matter of any difficulty. The complete gamut of speaking tones may be taught even to infant pupils, and it cannot be acquired too soon. The voices of school children are often harsh and unnatural, while they may easily be modulated by a competent teacher.

The most insensitive ear can generally be taught to recognize all the essential parts of the expressive vocal changes. Every change is simply to a higher or lower degree on the musical scale—a higher or lower pitch, or an upward or downward progression of voice. If the teacher cannot discriminate these changes he must acquire the power, or abandon the attempt to teach reading. A blind man may as well teach linear perspective, or a deaf man singing.

The general fault in school intonation is the prevalence of a high-pitched monotony. The middle pitch should be the one most commonly used, and monotony never. The characteristic of all speaking tones is inflexion; and not even the A B C or the multiplication table should be rehearsed without inflection.

Children take a great delight in exercises of the voice, so that there is no difficulty in fixing their attention on lessons of this kind. We have only to listen to the reading of our most highly educated men to discover that the public school teachers of the risen generation had not done their duty in this particular. Let it be your aim to lay the foundations of a higher style of public and professional reading in the rising generation by the regulation of the voices of your pupils in the earliest, and in every stage of their public school career. In no department is the adage more true that "the child is the father of the man," than in the management of the voice in reading. The blemishes in the public readers of to-day are the uncorrected habits of their childhood; and the excellences of your little learners now will survive as the ornaments of their mature professional style, in the pulpit, at the bar, on the bench, or in the school-room.

The gamut of inflection consists of a rising and falling tone of each of the four varieties—high, low, simple, compound. The ear requires to be trained to discriminate these varieties. Follow this plan; read slowly to your class, and ask them whether your voice is rising or falling wherever you make a stop. When they can distinguish this radical difference, read again and ask whether your closing inflection was simple or compound. In this way you both test and train the ear, and you will find that which the ear can apprehend, the voice will readily execute. I have heard a class of deaf and dumb children produce the characteristic differences of inflection and pitch, so that even those of your pupils whose ears are dull to such effects may be made to apprehend them, and to render them satisfactory in practice.

The fourth point in teaching reading is to group the words of sentences according to their mutual relations. A child expresses ideas by single words, and the most eloquent speakers express ideas singly, although by combinations of words. Sentences are divided into clauses, which have been happily called "oratorical words," and each of these must be presented to the mind as a separate fact. For example, take this sentence: "During the recent thunderstorm, an unfortunate man, travelling on the road, was struck by lightning and killed." This would be expressed by the child narrator in the three words, "Lightning kill man." But though, in the sentential statement, more words have been used, they arrange themselves into three groups corresponding to the three single words in the child's imperfect version. On this principle the reader should deliver the words of the longest sentence. Composition is often so involved that words forming part of the expression of one idea are separated in construction; and the reader must show the mutual relation of the detached words by keeping them apart from the intervening words. The necessary ideas in a sentence are its subject and its predicate; but beside these, the sentence may include a variety of subordinate ideas expressed in adjective, adverbial or complemental clauses. In the delivery of these various members of a sentence much care is often required to show the connection of governing and dependent words, to avoid ambiguity of reference, and to bring out the intended meaning with clearness. The principle of grouping words must be recognized as one of the most important in the whole art of reading. Teach your pupils to unite no words which do not make sense together, and they will soon acquire a perception of the principle which guides to appropriate clausing.

Poetry is subject to the same rules as prose. The end of a line is not always the end of a clause. For example:

Every lady in the land
Has twenty nails upon each hand
Five and twenty on hands and feet
This is correct and no deceit.

The correctness of this statement can only be shown by clausing instead of reading by rythmical lines.

Every lady in the land
Has twenty nails; upon each hand
Five; and twenty on hands and feet.
This is correct and no deceit.

The clausular divisions of sentences furnish the natural breathing places. Punctuation is no sufficient guide for the regulation of breath. Commas are often used where a break in the flow of sound would be inappropriate, and the boundaries of important clauses frequently occur where no comma is required by the rules of punctuation. Learners would read better, if, instead of being told to "mind the stops," they were directed to "mind the thoughts, and pay no heed to commas."

The fifth point in teaching reading is to emphasize the sense. In this matter young pupils will of course depend on the direction of the teacher, although they should be encouraged to think for themselves as much as possible. It is not, perhaps, generally known that the selection of emphatic words is regulated by principles, which can be exactly formulated for teaching. The study of these principles is one of much interest, and no more improving exercise can be prescribed for advanced pupils than the application of the principles of emphasis to passages from the writings of our best authors. Many mistaken ideas have been entertained with reference to emphasis, the fundamental mistake being that *no* rules could be laid down for the reader's guidance. You can, however, not only point out the emphatic words with confidence, but you can explain the reasons for your selection to those pupils who are qualified to comprehend them. Everything is best done that is done by rule, and all teachers should make themselves familiar with the very important laws of emphasis.

I am sorry to see that in some recently published books in use in Canadian schools, this subject is treated in the old indefinite and arbitrary way. Not only are principles wanting, the application of which would secure uniformity in the teaching in different schools, but the illustrations furnished are full of violations of the natural principles. It is an old error—but still reproduced—to suppose that words are emphatic in virtue of their grammatical rank; and that "articles, pronouns, conjunctions, prepositions and auxiliary verbs" are necessarily of inferior emphasis to "verbs, nouns and adjectives." Such thoughtless teaching will be confuted by the first example that may be taken at random.

"*To be, or not to be.*" Here we have the negative particle under emphasis. Why not read "to *be*, or not to *be*?" Because any word or thought *already stated* is unemphatic. This is an absolute law, admitting of no interference from the rank of works.

"*That* is the question." Here a pronoun is the emphatic word. Why not read "That is the *question*?" Because the previous words constitute a question, and any word or thought involved in the context is unemphatic. This is another law, equally absolute and independent of the rank of words.

Whether, '*tis nobler* in the mind." Why not read "Whether 'tis nobler in the *mind*?" Because the idea of "nobleness" *implies* "in the mind"—as the estimate of nobleness cannot be elsewhere—and any word or thought necessarily implied is unemphatic. These laws are definite, easily comprehensible, and of universal application.

We have in this illustration, in the most compendious form, a complete category of the reasons for words being unemphatic. Now look at the converse, which of course will show the reasons for emphasis. Any word or thought which has *not* been previously stated, or involved in the context, or which is not necessarily implied in the nature of things, in other and fewer words, any word which is *new* to the context, is, in virtue of novelty, emphatic. Emphasis has nothing to do with the grammatical rank of words. It depends entirely on the three principles; novelty, contrast, and suggestion.

All intelligent reading must be emphasized—and although, no doubt, thoughtful readers will be generally right in their perception of emphasis, without being consciously guided by definite principles, yet this is not enough in teaching. You must be able not only to bring the expression of a thought to a focus, but to do so as it were mathematically; and to test, and, if need be, prove your results by rule and theorem.

Emphasis is one of the few points in which all good readers will nearly coincide. There is a boundless latitude for variety in other respects; but emphasis depends on the appreciation of the intended meaning—which leaves comparatively little room for difference.

The sixth point in reading is to graduate the qualities of high and low pitch, weak and strong force, slow and quick time. Uniformity in any of these qualities is a defect, and in the nature of the changes made by the reader, or dictated by the teacher, there is abundant scope for the exercise of taste and judgment.

The seventh and last point in teaching reading is to express the sentiment. This requires not only modulations of inflexion, stress, pitch, force and time, but a general suiting of the sound to the sense that shows the reader to be in full sympathy with his subject. Analogies that can scarcely be enumerated will influence the style in various ways to produce this effect. The principle may be laid down that every sentence should be so read as not only to express its meaning but to indicate the reader's sentiment in regard to it—whether of approbation, condemnation, indifference, etc. You will therefore treat as a fault in your pupils a style of reading that—however perfect otherwise—is merely mechanical; warming what is cold, enlivening what is dull, and inspiring a sympathy of manner as the highest attribute of excellence in your most advanced pupils.

I have now sketched the system which I proposed to set before you. To facilitate your recollection of it, let me recapitulate the various points to be attended to:

I. The apparatus of speech—the bellows.
II. Pronunciation—phonetic syllables.
III. Tones—gamut of inflections.
IV. Clausing—oratorical words.
V. Emphasis—definite laws.
VI. Expressive variety—pitch, force and time.
VII. Sentiment—sympathy of manner.

I know that this arrangement works well; and I cannot conceive of any method better calculated to make good readers. But many of you may have your own plans already formed and producing satisfactory results, in such case, it will be well, before attempting to modify your procedure by any theory, to bear in mind the adage to which I referred at the commencement of my address, "That which is best *administered* is best."

There is but one other point I wish to notice, in conclusion; that is, the importance, in teaching reading, of simultaneous exercise. We know how the voices of a congregation are led in singing, by a single precentor. The same influence of voice developing voice will be found in the simultaneous exercise of a class in reading. Of course the individual voices will be tested from time to time, and separate readings be occasionally prescribed; but the general exercise of a class will, with great advantage, be simultaneous. You can readily distinguish a discordant vowel or inflexion, even when twenty or thirty voices are sounding together. Your pupils in this way receive a much larger amount of exercise and the interest of the class is much better sustained than when each individual is called on for the few moments which can be allotted to him for separate reading.

THE NATURE OF THE MIND.

EDWARD BROOKS, PH. D.

Educators tell teachers that they must understand the mind in order to train the mind. Young teachers, realizing their duty in this respect, repeatedly ask the question, Where shall we find a brief and simple statement of the nature of the mind in a form which we can readily understand? In reply to such a question, which is often put to me by young teachers as I meet them at teachers' institutes and elsewhere, I present the following brief and comprehensive outline of the faculties of the mind. The terms used are those which are drawn from a careful reading of the best writers and years of experience in teaching the subject.

The MIND is that which thinks, feels and wills. It is that immaterial principle which we call the soul, the spirit, or the intelligence. Of its essence or substance, nothing is known; we know it only by its activities and its operations. The different forms of activity which it presents, indicate different mental powers, which are called the *Faculties* of the mind.

A *Mental Faculty* is a capacity for a distinct form of mental activity. It is the mind's power of doing something, of putting forth some energy, of manifesting itself in some particular manner. The mind possesses as many faculties as there are distinct forms of mental activity. In order, therefore, to ascertain the different faculties of the mind, we must notice carefully the various ways in which the mind acts.

General Classification.—The mind embraces three general classes of faculties: the *Intellect*, the *Sensibilities*, and the *Will*. Every capacity or power which the mind presents falls under one of these three heads. Every mental act is an act of the intellect, the sensibilities, or the will. The mind is thus a trinity—one substance with a trinity of powers.

The *Intellect* is the power by which we think and know. Its products are *ideas* and *thoughts*. An idea is a single notion, which may be expressed in one or more words, not forming a proposition; as a *man*, an *animal*, etc. A thought is the combination of two or more ideas which, when expressed in words, give us a proposition; as, *a man is an animal*.

The *Sensibilities* are the powers by which we feel. Their products are *emotions*, *affections*, and *desires*. An emotion is a simple feeling, as the emotion of joy, sorrow, etc. An *affection* is an emotion that goes out towards an object, as *love*, *hate*, *envy*, etc. A

desire is an emotion that goes out to an object with the wish of possession, as the *desire* of *wealth*, *fame*, etc.

The *Will* is the power by which we resolve to do. It is the executive power of the mind—the power by which man becomes the conscious author of an intentioual act. The products of the will are *volitions* and *voluntary actions*. It is in the domain of the will that man becomes a moral and responsible being.

The relation of these three spheres of activity may be illustrated in a variety of ways. I read of the destitution and suffering in a great city, and understand the means taken for their relief: this is an act of the intellect. I feel a deep sympathy with this suffering; my heart is touched with pity, and I experience a strong desire to aid in relieving their distress; this is an act of the sensibilities. I desire to express my feelings of pity and follow my sense of duty, and resolve to aid them by sending a contribution or going personally to their relief; this is an act of the will.

The Intellect.—The *Intellect* embraces several distinct faculties; *Perception*, *Memory*, *Imagination*, *Understanding* and *Intuition* or the *Reason*. This classification of the Intellect is now almost universally accepted, though writers occasionally differ in the terms they use to name the different powers.

Perception is the power by which we gain a knowledge of external objects through the senses. It is the faculty by which we gain a knowledge of the objects and their qualities. Its products are ideas of external objects and of the qualities of objects. The ideas which we possess of persons, places, things, etc., are mainly given by perception.

Memory is the power by which we retain and recall knowledge. It enables us to hold fast to the knowledge we have acquired, and also to recall it when we wish to use it. These two offices of the memory are distinguished as *Retention* and *Recollection*. By some writers these are regarded as separate faculties; and others again discard the element of retention. Besides these, in an act of the memory, there is also a *representation* of that which it recalls, and a *recognition* of it as something of our past experience.

Imagination is the power by which we form ideal conceptions. It is the power of forming mental images, by uniting different parts of objects given by perception, and also of creating ideals of objects different from anything we have perceived. Imagination is thus *the power of ideal creation*. Thus, I can conceive a *flying horse* by uniting my ideas of wings and a horse; or I can imagine a landscape or a strain of music different from anything I have ever heard or seen.

The *Understanding* is the power by which we compare objects and derive abstract and general ideas and thoughts. It is the elaborative power of the mind; it takes the materials furnished by the other faculties and works them up into new products. Its products are *abstract* and *general ideas*, *truths*, *laws*, *causes*, etc.

Intuition, or the *Reason*, is the power which gives us ideas and thoughts not furnished by the senses nor elaborated by the Understanding. Its products are called *primary ideas* and *primary truths*. The Primary Ideas are such as Space, Time, Cause, Identity, the True, the Beautiful, and the Good. The Primary Truths are all self-evident truths, as the axioms of mathematics and logic.

The Understanding.—The *Understanding* embraces several distinct faculties or forms of operation. These are *Abstraction*, *Conception*, *Judgement*, and *Reasoning*. This division is now almost universally adopted, and the same terms are employed by nearly all modern writers.

Abstraction is the power of forming abstract ideas. It is the power by which the mind draws a quality away from its object, and makes of it a distinct object of thought. Its products are *abstract ideas*, such as *hardness*, *softness*, *color*, etc. The naming of abstract ideas gives us abstract terms. The term abstraction is derived from *ab*, from, and *traho*, I draw, and signifies a drawing from.

Conception is the power of forming general ideas. By it we take ideas of particular objects, and unite their common properties, and thus form a general idea which embraces them all. The products of Conception are *general ideas*, or ideas of classes; as *horse*, *bird*, *man*, etc. The naming of general ideas gives us common terms. This faculty is often called *generalization*; but the term *Conception* is more appropriate, and is the one generally adopted by logicians, etc. The term *Conception* is derived from *con*, together, and *capio*, I take, and signifies a taking together.

Judgment is the power of perceiving the agreement or disagreement of two objects of thought. Thus *man* is one idea and *animal* is another idea, and a comparison of them gives us the judgment. "A *man* is an *animal*." Judgment is the power of comparison; it compares one object directly with another, and gives us a proposition. A proposition is a judgment expressed in words. Thus *a bird is an animal*, is an expression of the mental judgment which compares *bird* and *animal*. The term judgment is applied to both the mental faculty and its product.

Reasoning is the power of comparing two ideas through their relation to a third. It is a process of indirect or mediate comparison. It deals with three objects of thought and requires three propositions. Thus, suppose I wish to compare A and B, and perceiving no relation between them, see that A equals C, and B equals C, and thus infer that A equals B, such an inference is an act of reasoning. Reasoning differs from Judgment in that the latter *compares two objects directly*, while the former compares two objects *indirectly* by first comparing them with a third object.

The form in which reasoning is expressed is called a *Syllogism*. A Syllogism consists of three propositions so related that one of them is an inference from the other two. Two of these propositions are called the *premises* and the third the *conclusion*. Thus, in the above example, the two propositions "A equals C," and "B equals C," are the premises; and "A equals B" is the conclusion.

Reasoning is of two kinds—*Inductive Reasoning* and *Deductive Reasoning*. *Inductive Reasoning* is the process of deriving a general truth from particular truths. Thus, if I find that heat expands several metals, as zinc, iron, copper, etc., I may infer that *heat will expand all metals*. Such an inference of a general truth from the particular facts is called *Induction*. Inductive reasoning proceeds upon the principle that *what is true of the many is true of the whole*.

Deductive Reasoning is the process of deriving a particular truth from a general truth. Thus, from the general proposition that *heat expands all metals*, I may infer by Deduction that heat will expand any particular metal, as silver. Deduction proceeds upon the principle that *what is true of the whole is true of the parts*.

Other forms of Mental Activity.—Besides the faculties now named, there are two other forms of mental activities, or mental states, called *Consciousness* and *Attention*. These are not regarded as specific faculties of the mind, but as conditions or accompaniments of these faculties.

Consciousness is that power or attribute of the mind by which it knows its own states and actions. The term is derived from *con*, with, and *scio*, I know, and means a knowing with the mental acts or states. It is regarded as an attribute of the mind, and not as a mental faculty. Thus, to *know* is to know we know, to *feel* is to know we feel, to *will* is to know we will. The expressions "I know that I know," "I know that I feel," etc., are equivalent to, "I am conscious that I know," "I am conscious that I feel, etc." Consciousness is a kind of inner light by which one knows what is going on within his mind; it is a revelation of internal phenomena of thought, feeling, and will.

Attention is the power of directing the mind voluntarily to any object of thought to the exclusion of others. It is the power of selecting one of several objects and concentrating the mental energies upon it. The term is derived from *ad*, to, and *tendo*, I bend, which was probably suggested by the attitude of the body in listening attentively to a sound.

Attention is not a distinct form of mental activity, but is involved in and underlies the activities of all the faculties. The voluntary operation of any of the mental powers, as Perception, Memory etc., carries with it an act of attention. It is not a power of knowing, but of directing that which may know. It has no distinct field or province of its own, yet without it the faculties would be of little use to us. It works with them and through them, increasing their efficiency, and giving them a power they would not otherwise possess.

Conception.—The term *Conception* is often used in a general and popular sense, meaning that power which the mind has of making anything a distinct object of thought. In this sense it is intimately related to all the mental faculties. Thus I can conceive of a tree or a house which I have seen, a landscape which I may not have seen, a proposition in geometry, a truth in natural philosophy, etc. Some writers have used the term in a more specific sense, as the power of forming an exact transcript of a past perception. In Logic the term is restricted to the power of forming general ideas, as we have previously defined it.

I recommend the young teachers of the State who have not studied mental philosophy to committ this brief statement of the mental faculties to memory. It is the alphabet of the study of mental science, and when committed and thoroughly digested will make the study of any ordinary text-book on the subject comparatively easy. The following outline will present a complete synopsis of the subject:

THE MIND.

1. The Intellect.
   - 1. Perception.
   - 2. Memory. — 2. Recollection. 1. Retention.
   - 3. Imagination.
   - 4. Understanding. — 1. Abstraction. 2. Conception. 3. Judgment. 4. Reasoning.
   - 5. The Reason.
2. The Sensibilities.
   - 1. Emotions.
   - 2. Affections.
   - 3. Desires.
3. The Will.

ASSIGINACK, MANITOULIN ISLAND,
July 26th, 1879.

To the Editor of the Canada School Journal.

DEAR SIR,—The pecuniary mainstay of the Schools in this new country has hitherto been "*Aid from the Poor School Fund.*" The condition on which this was obtained was that the local Municipal Council should make a special grant to each school, and then the Department would give an equal amount of aid from the "Fund." By these means the settlers (many of whom are unable to clothe their children, to fit them for "going to school") have been enabled to keep their schools open throughout the year. This is very desirable in this severe climate, as our smaller children *cannot go* in winter, and our larger ones *cannot be spared* in summer.

It is with alarm for our schools, then, that we learn that the authorities have changed their base of distribution, and will now give no aid in cases wherein the local special assessment last year did not amount to one cent on the dollar. The Trustees here, anticipating that their powers and responsibilities were about to pass into the hands of a "Township Board" in 1879, merely levied such a rate as, including their reserve fund, would balance matters at the ' of last year; which rate did not come up to 1 cent per dollar.

If the new rule is rigidly acted on, our schools must be at once closed for six months in the year, as no natural or Christian man would dream of laying a rate of 3 cents in the $ on the struggling settlers.

It seems unwise and discouraging to be perpetually changing rules of action in the management of this Poor School Fund. For instance, the Trustees must by law apply to the Council for what funds they require to supplement the Teacher's salary, and pay current expenses for the year before the August meeting of the Council. How can they possibly do this when kept in ignorance of what "aid" they are to get from the fund, or if they will get any at all or not?

The *sudden* withdrawal of the "aid" on any ground will prove disastrous to the schools. It would be only consistent with the professed object of the establishment of the fund to give notice of a *gradual* withdrawal. As things are now managed, Trustees are constantly in danger of being forced into contracts with teachers, &c., which, mayhap, they cannot fulfil without distraining the goods and chattels of their neighbors for a local rate which the latter are utterly unable to pay.

Trusting that it may not be too late to ward off the threatened blow, and that one-half of our children will not be deprived of all educational privileges,

I am, etc.,
A MANITOULINER.

Mathematical Department.

Communications intended for this part of the JOURNAL should be on separate sheets, written on only one side, and properly paged to prevent mistakes They must be received on or before the 20th of the month to secure notice in the succeeding issue.

EDUCATIONAL DEPARTMENT, ONTARIO.

JULY EXAMINATIONS, 1879.

SECOND CLASS TEACHERS AND INTERMEDIATE.

ARITHMETIC.

TIME—THREE HOURS.

Examiner—J. A. McLELLAN, LL.D

Values.

10 1. (*a*) Divide 84.832476 by 12.784.

(*b*) The circumference of a circle divided by 3.1415926 gives the diameter nearly; what multiplier of five decimal places may be used instead of this divisor?

10 2. Show how to find the G.C.M. and the L.C.M. of two or more fractional numbers.

The G.C.M. of two fractional numbers is $\frac{1}{100}$, and their L.C.M. is $84\frac{1}{3}$; one of the numbers is $2\frac{1}{10}$, find the other.

10 3. Sterling exchange is quoted in Toronto at $109\frac{1}{8}$ for 60-day bills; what must be paid for a 60-day bill for £345 8*s*. 6*d*.?

10 4. The old wine gallon is 231 cubic inches; the cubic inch is .000016386 cubic metres, and the imperial gallon is 4.54102 litres; how many imperial gallons are there in 157 wine gallons?

10 5. There are two clocks, one of which loses $8\frac{1}{2}$ minutes a day, and the other gains $3\frac{1}{2}$ minutes a day; the latter marks a time 25 minutes in advance of the former: when will both clocks mark the same time?

10 6. A person had stock of the Dominion Bank; he received a half-yearly dividend of $4\frac{1}{4}$ per cent., which he invested in the same stock at $118\frac{1}{2}$, and his entire stock was now $16,600; how much stock had he at first?

10 7. If 5 men earn as much in a day as 8 women, and 2 women as much as 3 boys, and if 7 men, 12 women, and

20 boys earn $205 50 in 6 days, what amount will be earned in 8 days by 6 men, 10 women, and 24 boys?

10 8. If 12 lbs. avoirdupois of American standard silver, which is 90 per cent. fine, be coined into 175 dollars; and if the value of the alloy be 87½ per cent. of that of pure silver, find the value of one pound troy of the alloy.

10 9. A merchant imported 700 yards of silk and marked it to gain, as he supposed, 25 per cent.; but having neglected to take into account a barge of $125 for freight and duty, he made only $6\frac{2}{3}$ per cent. profit: find the invoice price of the silk.

10 10. (1) How many yards of painting are there in the walls of a room 20 ft. long, 14 ft. 6 in. wide, and 10 ft. 4 in. high, allowing for a fire-place 4 ft. by 4 ft. 4 in., and two windows each 6 ft. by 3 ft. 2 in.?

(2) Find the number of cubic feet in a hollow cylinder, the external circumference of which is 5 ft. 6 in., the internal circumference 3 ft. 8 in, and the length 18 ft.

1. (*a*) $6\cdot\dot{6}2\dot{2}$. (*b*) ·31830+.

2. See Hamblin Smith's Arith., Can. Ed., Art. 81.

$$(34\tfrac{1}{8} \div 2\tfrac{1}{16}) \times \tfrac{13}{16}\tfrac{3}{6} = 1\tfrac{7}{2}.$$

3. Amount $= \$\frac{40}{9} \times \frac{109\frac{1}{8}}{100} \times 45\tfrac{1}{16}\tfrac{7}{6} = \$220{\cdot}31\tfrac{1}{8}$.

4. No. imperial gals. $= \dfrac{231 \times \cdot000016386 \times 157}{4{\cdot}54102 \times 1000} = 130{\cdot}86+$.

5. They will be together when difference of time between the clocks = 11h. 35 min. = 695 min.

7 min. diff. require 1 day.
695 min. " " $99\frac{2}{7}$ days.

6. $4\frac{1}{2}$ % dividend invested in stock at $113\frac{1}{3}$ produces $3\frac{3}{4}$ %, or $\frac{3}{3}\frac{3}{4}\frac{3}{0}$ of original stock;

$\therefore \frac{33}{340}$ original stock = $16600
" " = $16000.

7. 7 men + 12 wom. + 20 boys = $27\frac{1}{4}$ boys,
6 men + 10 wom. + 24 boys = $24\frac{1}{2}$ " .

Amount earned $= \$\dfrac{8 \times 267 \times 205.50}{6 \times 274} = \$267$.

8. 8400 grs. alloy; 75600 grs. pure silver in mass;
$\therefore$ 7560 $\times \frac{8}{7}$ + 800 grs., or 210000 grains alloy worth $175;
$\therefore$ 5760 grs. or 1 lb. troy, worth $4.80.

9. $\frac{4}{7} \times$ Invoice price $= \dfrac{106\frac{2}{3}}{100} \times$ (Invoice price + $125), or $18\frac{3}{3}\frac{1}{3}$ % of Invoice price = $125 + $6\frac{2}{3}$ % of $125;
$\therefore$ Invoice price = $700.

10. (1). No. yds. painting

$$= \left\{34\tfrac{1}{2} \times 10\tfrac{1}{3} \times 2 - (4 \times 4\tfrac{1}{3} + 6 \times 3\tfrac{1}{3} \times 2)\right\} \div 27$$

$$= \frac{713 - 55\frac{1}{3}}{27} = 73\tfrac{2}{2}\tfrac{1}{7} \text{ yds.}$$

(2). $r = \frac{1}{4}\frac{1}{2} + \frac{7}{2\cdot2} = \frac{7}{8}$ feet,
$r' = \frac{1}{6}\frac{1}{0} \times \frac{7}{2\cdot7} = \frac{7}{1\cdot2}$ feet;
$\therefore$ No. cub. feet

$$= \left\{(\tfrac{7}{8})^2 - (\tfrac{7}{12})^2\right\} \times \tfrac{2\cdot2}{7} \times 18 = 24\tfrac{1}{7}\tfrac{1}{6}.$$

ALGEBRA.

TIME—TWO HOURS AND A HALF.

Examiner—J. A. McLellan, LL.D.

Values.

3 3. Resolve into factor $x^4 - \frac{1}{4}x^2y^2 + y^4$, and

5 $7x^2 - 6y^2 - xy + 19x + 38y - 36$; and prove that

4 $b^2(c+a) + c^2(a+b) - a^2(b+c) + abc$ is exactly divisible by $b+c-a$.

4 4. Apply Horner's method of division to find value of $5x^4 + 497x^3 + 200x^2 + 196x^2 - 218x - 2000$ when

4 $x = -99$, and the value of $6x^5 + 5x^4 - 17x^3 - 6x^2 + 10x - 2$ when $2x^2 = -8x + 1$.

11 5. Find what $\dfrac{\sqrt{(a+x)} + \sqrt{(a-x)}}{\sqrt{(a+x)} - \sqrt{(a-x)}}$ becomes when

$$x = \frac{2ab}{1+b^2}.$$

2 6. If a and b be any positive numbers, prove that

4 $$\frac{1}{a} + \frac{a}{1+a} > 1, \frac{a}{b} + \frac{b}{a} > 2.$$

7. Solve the equations—

4 (1) $x^{\frac{1}{2}} + y^{\frac{1}{2}} = 4$
$x^{-\frac{1}{2}} + y^{-\frac{1}{2}} = \frac{5}{8}$

8 (2) $x + 2y + z = 14$
$2x + 3y + z = 11$
$3x + y + 2z = 11$.

5 (3) $(x+1)(x+3)(x+4)(x+6) = 16$.

10 8. There are three consecutive numbers such that the sum of their cubes is equal to $16\frac{2}{7}$ times the product of the two higher numbers: find the numbers.

4 9. (1) Form an equation three of whose roots are 0, $\sqrt{(-3)}$, and $1 - \sqrt{2}$.

7 (2) If one of the roots of equation $x^2 + px + q = 0$, is a mean proportional between p and q, prove that $p^3 = q(1+p)^2$.

11 10. Two trains start at the same instant, the one from B to A, the other from A to B; they meet in $1\frac{1}{2}$ hours; and the train for A reaches its destination $52\frac{1}{2}$ minutes before the other train reaches B: compare the rates of the trains.

SOLUTIONS.

1. $=$

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

$$= \frac{(a^2+b^2)(x^2-y^2)^2 + 4x^2y^2(a^2+b^2)}{x^2+y^2)^2} = \frac{(a^2+b^2)(x^2+y^2)^2}{(x^2+y^2)^2} = a^2+b^2.$$

2. (1) $a^3 - b^3 - c^3 - 3abc = (a-b)^3 - c^3 + 3ab(a-b-c) = (a-b-c)(a^2 - 2ab + b^2 + ac - bc + c^2 + 3ab) = (a-b-c)(a^2+ab+b^2+ac-bc+c^2)$;

$\therefore$ quotient $= a^2 + ab + b + ac - bc + c^2$.

(2) $= (1+x+x^2)^3 - (1-x+x^2)^3 - (2x)^3 - 3(1+x+x^2)(1-x+x^2)(2x) =$, by preceding example, $(1+x+x^2-1+x-x^2-2x)$ (other factor) $= 0$.

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

(2) $= (7x+6y)(x-y) + 4(7x+6y) - 9(x-y) + 4\times-9 = (7x+6y-9)(x-y+4)$.

(3) Remainder is found by substituting in the dividend the value of a (say) found from $b+c-a=0$. Substituting, remainder $= b^2(b+2c) + c^2(2b+c) - (b+c)^3 + (b+c)bc = 0$.

4. (1) Applying Horner's method to divide by $x+99$, e see that expression $= (x+99)(5x^4 + 2x^3 + 2x^2 - 2x - 20) - 20$; $\therefore$ if $x = -99$, first factor vanishes, and expression $= -20$.

(2) Similarly to preceding, on dividing by $2x^2+3x-1$, we have remainder 0, which is therefore the value of the expression when $2x^2 = -3x+1$.

5. Rationalizing the denominator, expression $= \dfrac{a+\sqrt{a^2-x^2}}{x} =$

$$\frac{a + \sqrt{a^2 - \frac{4a^2b^2}{(1+b^2)^2}}}{\frac{2ab}{1+b^2}} = \frac{a(1+b^2) + a(1-b^2)}{2ab} = \frac{1}{b}.$$

6. (1.) $\frac{1}{a}+\frac{a}{1+a}=\frac{1+a+a^2}{a+a^2}=1+\frac{1}{a+a^2}$, which must be >1, if a be positive.

(2.) True if $a^2+b^2>2ab$, if $(a-b)^2>0$, and $(a-b)$ being a square is always positive, and $\therefore$ always >0.

7. (1. From 2nd equation $x^{\frac{1}{2}}+y^{\frac{1}{2}}=\frac{5}{6}x^{\frac{1}{2}}y^{\frac{1}{2}}$, $\therefore$ from 1st equation $x^{\frac{1}{2}}y^{\frac{1}{2}}=6$. Whence from 1st eq. $x=4$ or 9, and thence, from symmetry of the equations, $y=9$ or 4.

(2) Adding $x+y+z=6$, and (1)$-$(2) gives $-2x+y+z=8$; thence $x=1$. Also (3)$-$(2) gives $x-2y+z=0$; thence $y=2$; $\therefore z=3$.

(3) Taking the first and fourth factors together, and also the second and third, $\{(x^2+7x)+6\}\{(x^2+7x)+12\}=16$, $(x^2+7x)^2+18(x^2+7x)+81=25$, $x^2+7x=-4$ or -14, $x=\frac{-7\pm\sqrt{33}i}{2}$ or $\frac{-7\pm\sqrt{-7}}{2}$. If we multiply the factors out we may make both sides of the equation squares by adding 9 to them.

8. Let $x-1$, x and $x+1$ be the numbers, then $(x-1)^3+x^3+(x+1)^3=16\frac{2}{7}x(x+1)$, or $3x^3+6x=16\frac{2}{7}x(x+1)$. Dividing by x, we have $x=0$ as one root, with $7x^2-38x=24$, from which we find the other roots. These are 6 or $-\frac{4}{7}$. Thus numbers required are -1, 0, 1; 5, 6, 7; or $-1\frac{1}{7}$, $-\frac{4}{7}$, $\frac{3}{7}$.

9. (1) Irrational and impossible roots enter in pairs in equations whose coefficients are rational and real. If we restrict ourselves to such coefficients, the required equation will be $x(x-\sqrt{-3})(x+\sqrt{-3})(x-1+\sqrt{2})(x-1-\sqrt{2})f(x)=0$ or $x(x^2+3)(x^2-2x-1)f(x)=0$, $f(x)=0$ being supposed to contain whatever other roots the equation may have. Of course the words "three of whose roots" might suggest the intention that we were to confine ourselves to coefficients real and rational; if we do not do so, the equation will be $x(x-\sqrt{-3})(x-1+\sqrt{2})f(x)=0$.

(2) $\sqrt{pq}$ is $\therefore$ a root. Substituting this value for x, we have $pq+p\sqrt{pq}+q=0$, or $q^2(p+1)^2=p^3q$, or $q(p+1)^2=p^3$.

10. Let $x=$ rate (number of miles per hour) of train from A.
" $y=$ " " " " " " B.
Then whole dis. $=1\frac{1}{2}(x+y)$; and $\frac{1\frac{1}{2}(x+y)}{x}=$ 1st train's time $=$ second train's time + $52\frac{1}{2}$ minutes $=\frac{1\frac{1}{2}(x+y)}{y}+\frac{7}{8}$. Simplifying $\left(\frac{x}{y}\right)^2-\frac{7}{12}\cdot\frac{y}{x}=1$, $\therefore\frac{y}{x}=\frac{3}{4}$ Ans.

EUCLID.

TIME—TWO HOURS AND A HALF.

Examiner—JOHN J. TILLEY.

Values.

10 1. (*a*) Define straight line, segment of a circle, rectilineal angle, trapezium, superficies.

(*b*) From the XVIII. and XXVII. propositions, Book I., deduce, respectively, the proof of the VI. and of the XVII. propositions.

10 2. To make a triangle of which the sides shall be equal to three straight lines, but any two of these must be greater than the third.

10 3. If a straight line fall upon two parallel straight lines it makes the two interior angles upon the same side together equal to two right angles, and also the alternate angles equal to each other, and also the exterior angle equal to the interior and opposite angle upon the same side.

10 4. In any right-angled triangle the square which is described on the side subtending the right angle is equal to the squares described on the sides containing the right angle.

10 5. If a straight line be divided into two parts, the squares on the whole line and on one of the parts are equal to twice the rectangle contained by the whole and that part together with the square on the other part.

10 6. To describe a square that shall be equal to a given rectilinear figure.

10 7. In the ordinary figure of the 47th proposition, Book I., if the corners of the squares be joined externally, prove that the three triangles thus formed are equal to one another.

10 8. If $ABCD$ be a quadrilateral, and E the bisection of the diagonal BD, and if through E a line, FEG, be drawn parallel to AC, and meeting AB in F and BC in G, show that AG will bisect the given figure.

10 9. If A be the vertex of an isosceles triangle ABC, and CD be drawn perpendicular to AB, prove that the squares upon the three sides are together equal to the square on BD, and twice the square on AD and thrice the square on CD.

10 10. Any rectangle is half the rectangle contained by the diameters of the squares upon its two sides.

SOLUTIONS.

1. (*b*) In VI., if AB be not equal to AC, then by XVIII., ABC cannot be equal to ACB. In XVII., two of the angles must be less than two right angles, if by XXXII. the three be together equal to two right angles.

7. The angle FBD (H. Smith's or Todhunter's Euc.) is the supplement of the angle ABC. If then the triangle FBD be turned about B until F coincides with A, DB, BC will be in the same straight line, and therefore the triangles FBD, ABC are equal, being on equal bases and between the same parallels. Similarly, the other triangles may be proved equal to ABC.

8. Triangle ABE = triangle AED, and triangle CBE = triangle CED; so that $ABCE$ is half the figure. Of $ABCE$ the two parts, AFE, CEG are together equal to AFG, since AFE is common, and $AEG = CEG$. Hence $ABG = ABCE =$ half original figure.

9. $BD^2+2AD^2+3CD^2=BD^2+CD^2+2(AD^2+CD^2)=BC^2+2AC^2=$ sum of squares on sides.

10. Let $ABCD$ be the rectangle, and EC, CF the diameters of the squares on BC, CD. Then $2EC.CF=EF^2-EC^2-CF^2=AE^2+AF^2-2BC^2-2CD^2=AB^2+BC^2+2AB.BC+AD^2+DC^2+2AD.DC-2BC^2-2CD^2=4AB.BC$, or $EC.CF=2AB.BC$.

NATURAL PHILOSOPHY.

TIME—TWO HOURS AND A HALF.

Examiner—J. C. GLASHAN.

N.B.—Candidates, in order to pass, must make at least 22 marks on this paper, and at least 120 marks on the group—Natural Philosophy, Chemistry, and Book-keeping.

Values.

8 1. How are statical forces measured?

8 State the principle of the transmissibility of force.

6 By what experiments could this principle be illustrated, (1) for pressures, (2) for tensions?

7 A string, $ABCD$, is suspended from A. At the point B, a weight of 8 oz. is attached, at C a weight of 6 oz. is attached, and at D a weight of 2 oz. is attached. Find the tension of the string between A and B, between B and C, and between C and D.

8 2. Enunciate the Triangle of Forces, explaining your enunciation by means of a diagram in which the directions

of action of the forces are marked by arrows. Mark also the point of application of the forces.

4 Show that *perpendicular* may by substituted for *parallel* in the enunciation.

7 A weight of 51 lbs. hangs by two cords, AB 8 feet long and AC 15 feet long. The cords, which act at right angles to one another, are fastened to the points B and C, BC being horizontal. Find the tension of the cords. (Explain your solution by means of a diagram.)

4 8. The moment of a given force about a given point is the same, no matter at what point in its line of action the force is supposed to act.

7 Two boys carry a pail of water weighing 21 lbs., by means of a stick weighing one pound. What weight does each boy support, the pail being hung 15 inches from one boy and 21 inches from the other, the centre of gravity of the stick being mid-way between the boys.

4 4. Show how to determine (whenever possible) the position of the centre of two parallel forces.

4 How can the centre of gravity of a body be determined experimentally?

7 A uniform rectangular board, $ABCD$, is suspended from the angular point A. To the angular point B is suspended a weight of 7 oz. Given that AB is 5 inches and BC 12 inches, and that the weight of the board is 6 oz., find where the vertical line through A will cut the diagonal BD.

3 5. State the principle of virtual velocities.

3 Define the term virtual velocity.

7 With what force must a horse pull in order to draw a load of 1105 lbs. up an incline of 21 in 221 (measured along the plane), the traction being parallel to the plane? (Solve by virtual velocities.)

4 6. "Any force, however small, may, by the transmission of its pressure through a fluid, be made to support any weight, however large." Explain how this is possible.

6 Describe any machine constructed to take advantage of this principle.

7 A tube whose internal cross-section is one square inch opens freely into a water-tank whose internal horizontal section is 5 square feet. In the tube there works a piston. What pressure would be exerted on the piston by the water in the tank rising to a height of 12 feet above the level of the piston. (A cubic foot of water weighs 1000 oz.)

6 7. Describe the siphon and explain the principle of its action.

15 A siphon filled with water has its ends inserted into water contained in two reservoirs of equal dimensions, the level of the surface of the water in one reservoir being 20 feet below the surface of the water in the other. State what would take place were the vertical distance of the highest point of the siphon i. 20, ii. 30, iii. 35 feet above the surface of the water in the upper reservoir. Given the specific gravity of mercury 13.57, and assuming the mercury-barometer to be standing at 30 inches.

SOLUTIONS.

1. 16, 8, 2.

2. Not only may *perpendicular* be substituted for *parallel*, but the proposition holds if the sides of the triangle make any, the same, angle with the directions of the forces; for if a system of forces be in equilibrium, they will continue so if the entire system be shifted into any fresh position, the magnitudes and *relative* directions of the forces (on which alone the equilibrium depends) remaining the same.

$BC = 17$. Through C draw CD perpendicular to AC, and through A draw AD perpendicular to BC to meet CD in D. Then the sides of ACD are parallel to the forces, and AC, CD, DA are as 8 : 15 : 17. $\therefore$ tension of $AC = \frac{8}{17}$ of 51 = 24; tension of $AB = \frac{15}{17}$ of 51 = 45.

3. The weight of the stick is carried equally by each. The 21 lbs. is distributed between them in the ratio of 15 : 21. Hence weights carried are $12\frac{3}{7}$ and $9\frac{4}{7}$.

4. "Whenever possible" is inserted because if the forces be equal, and act in opposite directions, they form a couple, to which no single force can be equivalent, and which have therefore no "centre." Let E be the intersection of the diagonals, each of which is 18 in. Then the only forces on the system are the pressure at A and the forces 6 and 7 at E and B. Therefore the vertical through A will divide EB at a point F, so that $EF : FB :: 7 : 6$. $\therefore FB = 8$.

5. If a displacement be made the principle states that weight × distance through which it is raised in the direction in which it acts (*i. e.*, the vertical) = power × distance through which it moves in its direction. Let the power ascend 1 ft.; then the weight will ascend in a vertical direction $\frac{3}{21}$ ft. Hence power × $1 = 1105 \times \frac{3}{21}$; or power = 105.

6. The pressure on the piston will be the same as the pressure on horizontal sq. in. at the same level in the tank = $\frac{1}{1000}$ of 1000 = $83\frac{1}{3}$ oz.

7. Evidently the air is capable of sustaining a column of water 30x13.57 inches high, or $33.92\frac{1}{2}$ ft. Let A be the highest point of the siphon, B the upper reservoir and C the lower. In the first case, where A is 20 ft. above the level of B, and 40 feet above the level of C, the air pressure is able to drive the water in B beyond A, but unable to sustain the column $A\,C$ (40 ft. high); the water will accordingly descend in AC, the vacuum being instantaneously filled by water from AB, *i.e.*, there will be a flow from B to C, and the flow will go on until the water is at the same level in the two reservoirs,—30 ft. below A. In the second case the flow will start, but will only continue until the water in B is reduced $3.92\frac{1}{2}$ ft., when it will stop owing to the air being unable any longer to force the water past A, the water in AC then sinking to a height of $33.92\frac{1}{2}$ ft. above water in C. In the third case the height of A above B is 35 ft., and above C 55 feet. These columns the air cannot sustain, and accordingly the water in the tube descends from A in both directions, until there are two columns of height $33.92\frac{1}{2}$ ft. above both B and C.

Mr. H. Munro, Round Hill, N.S., objects to Mr. Magee's solution of question 1, July number, stating that Mr. Magee has solved the following problem:

If a person spends \$20 more than $\frac{3}{4}$ of his money, then \$20 less than $\frac{7}{8}$ of the remainder, and has \$28 left; how much had he at first?

And offering the following solution for the problem in question: If he spends $\frac{3}{4}$ he has $\frac{1}{4}$ left, and $\frac{7}{8}$ of remainder less $20 = \frac{7}{8}$ of $(\frac{1}{4} - 20) = \frac{7}{32} - 15\frac{5}{8}$; and he spends 20 more than this. Hence he first has left

$$\frac{\frac{1}{4} - 15\frac{5}{8} + 20}{\frac{7}{32} + 4\frac{1}{8}} = \therefore 28$$

$\therefore$ unity = \$255½.

We consider Mr. Munro's the correct solution, but suggest that an error has been made in printing the problem,—that the comma after "money" should come after "more," and that "than should be changed to "then;" Mr. Magee's solution will then be all right.

In consequence of the condition of the city finances the Board of School Trustees of St. John has notified the teachers that it may become necessary to discontinue their services and close the schools at the end of the present term. It was also stated that there were no funds to pay the teachers the amount of the salaries due up to the time of the summer vacation. This difficulty, however, was removed, so that the teachers commenced their holidays with something in their pockets; and it is believed that means will be found whereby the public school service will be carried on without interruption, though perhaps with some curtailment of expenses.

Examination Questions.

Under this head will be published from month to month the papers set at the examination for entrance into the High Schools of Ontario, the Intermediate High School Examination, the examination of candidates for Public School teachers' certificates, and the Junior and Senior Matriculation examinations of the University of Toronto. The Mathematical papers will in all cases be accompanied by analytical solutions of the more difficult problems and hints on the best methods of solving the others.

JULY EXAMINATIONS.

SECOND CLASS TEACHERS AND INTERMEDIATE.

ENGLISH LITERATURE.

TIME—TWO HOURS AND A QUARTER.

Examiner—J. M. BUCHAN, M.A.

Values.

8 1. State Milton's conception of the universe, as presented in Paradise Lost.

6 2. Give a brief synopsis of Book I. and explain the position of affairs at the time at which Book II. begins.

15, i.e. 3×5 3. Quote the descriptions of Death, Belial, Beëlzebub, and Lethe, and the simile of the Gryphon.

4. Before their eyes in sudden view appear
The secrets of the hoary Deep, a dark
Illimitable ocean, without bound,
Without dimensions, where length, breadth, and height,
And time, and place are lost; where eldest Night
And Chaos, ancestors of Nature, hold
Eternal anarchy amidst the noise
Of endless wars, and by confusion stand:
For, Hot, Cold, Moist, and Dry, four champions fierce,
Strive here for mast'ry, and to battle bring
Their embryon atoms; they around the flag
Of each his faction, in their several clans,
Light-arm'd or heavy, sharp, smooth, swift or slow,
Swarm, populous, unnumber'd as the sands
Of Barca or Cyrene's torrid soil,
Levied to side with warring winds, and poise
Their lighter wings. To whom these most adhere,
He rules a moment; Chaos umpire sits,
And by decision more embroils the fray
By which he reigns: next him high arbiter
Chance governs all.

—*Milton—Paradise Lost, Book II.*

1 (i.) *Their* (l. 890). Whose?

3 (ii.) *Ancestors of Nature.* Explain the allusion.

2 (iii.) *By confusion stand.* Explain.

3 (iv.) To what ancient philosophic theory is there an allusion in ll. 898-900?

2 (v.) *They.* (l. 900). Who?

2 (vi.) Where were Barca and Cyrene?

4 (vii.) Parse 'levied' (l. 905). Explain the meaning of 'poise.'

2 (viii.) *Their* (l. 906). Whose?

4 (ix.) Explain the construction and meaning of
To whom these most adhere,
He rules a moment.

2 (x.) Who is called 'high arbiter' in l. 909?

7 (xi.) Point out any peculiarities of Milton's genius illustrated by this passage.

5 (xii.) Scan ll. 892, 893, 900, 901, 905.

8 5. Write an account of Milton's life.

8 6. Briefly state anything you know with respect to the influence of the Puritan Revolution upon literature.

18, i.e. 3+3+3+3 7. Give the propositions made by Moloch, Belial, Mammon, and Beëlzebub at the council. Who utters these words:

2+4 Who shall tempt with wand'ring feet,
The dark, unbottom'd, infinite abyss?
Give the part of his speech which follows.

ENGLISH HISTORY.

TIME—TWO HOURS AND A HALF.

Examiner—S. ARTHUR MARLING, M.A.

Values.

10 1. Derive and explain the terms 'villain,' 'sheriff,' 'confiscation,' 'homage,' 'knights templars.'

10 2. State the chief differences between the Saxon and the Norman rule in England with respect to (i.) the government of the country; (ii.) the condition of the people.

10 3. Mention the chief clauses of the Magna Charta.

10 4. Tell the principal events of the reign of Edward I.

10 5. Write concise historical explanatory notes on the Restoration, the Battle of Culloden, the Declaration of American Independence, the Corn Laws, the Crimean War.

10 6. Tell briefly the part played in English history by Cromwell, John Hampden, Charles James Fox, John Wilkes.

10 7. "The Queen reigns, but does not govern." Discuss this statement.

10 8. Say what you know about Lord Sydenham's administration in Canada.

10 9. What led the Romans to interfere in the affairs of Macedonia, and by what steps did Macedonia become a Roman Province?

10 10. Give a brief account of the "Social War" in Italy.

BOOK-KEEPING.

TIME—ONE HOUR AND A QUARTER.

Examiner—J. J. TILLEY.

Values.

6 1. Toms has $500 in Ontario Bank, and wishes to draw it by check, to be given to-day, in Toronto. Write check.

6 2. Smith gives Jones his note at 3 months from to-day for $125. Write note, with amount of stamp required.

6 3. Brown of Toronto draws, to-day, a sight draft for $75, on Wilson, of Whitby. Write draft.

18 4. Journalize each of the above transactions, giving the entry for each person interested.

10 5. A merchant in Cobourg wishes to send through the Bank a sum of money to a merchant in Toronto; explain how this may be done, in two ways, without expense to the Toronto merchant.

10 6. John Wilson bought from R. Henry of Oshawa, March 14th, 1878, 12 yds. cotton @ 15c. per yd., 6½ lbs. tea @ 90c. per lb., 285 lbs. flour @ $2.50 per cwt., and a suit of clothes $15. Make out bill in proper form and receipt it.

15 7. Journalize the following, giving my entries:
(a) I buy 200 bbls. flour from Scott at $6 per bbl., pay $500 in cash, give my note for $300, balance to remain on account.
(b) Scott buys from me 200 yds. broad-cloth @ $2.50 per yd., pays $500 in cash, gives his note for $300, balance paid by an order on Hoskin, which Hoskin accepts.
(c) Scott and I exchange notes.

9 8. In making out your statements preparatory to closing your Ledger, where do the following items appear: Mdse. on hand, Cash, Money in Bank, Bills Rec., Coal for use of Store, Balance of Interest, Any Real Estate?

CHEMISTRY.

TIME—ONE HOUR AND A HALF.

Examiner—J. C. GLASHAN.

N.B.—*In order to pass, Candidates must make at least 22 marks on this paper, and at least 120 marks on the group—Natural Philosophy, Chemistry and Book-keeping.*

Values.

4 1. What is understood in chemistry by the expression an "element" or an "elementary body?"

4 How could you show that air is not an element?
4 What is the difference between a mechanical mixture and a chemical compound?
4 How could you show that Nitrogen Monoxide is a chemical compound?
4 2. Describe any method of preparing Oxygen.
4 Write in symbols the reaction that occurs when Oxygen is prepared from Potassium Chlorate.
4 You are given three vessels, and are told that one contains Oxygen, one Nitrogen Monoxide, and one common Air: how would you determine which vessel contains the Oxygen?
4 What volume of Oxygen will 8 ounces of Potassium Chlorate yield; a cubic foot of Hydrogen at 60° F. and 30 ins. Bar. weighing 37 grains? (K = 39.1.)
4×4 3. How may Nitrogen, Nitric Oxide (NO), Nitrous Anhydride (N_2O_3), and Nitrogen Peroxide (NO_2) be severally obtained from Nitric Acid or a Nitrate?
4. 4. How could you distinguish Carbon Dioxide from Nitrogen?
4 The gas that sometimes collects at the bottom of deep wells is said to be Carbon Dioxide. By what experiments could you test the correctness of this statement?
4 How could you distinguish between Marsh Gas and Hydrogen?
4 Between Olefiant Gas and Carbon Monoxide?
4 5. In what respects does Sulphur resemble Oxygen?
4 By what other means, besides burning Sulphur, can Sulphur Dioxide be prepared?
2×4 Explain its action with solutions (1) of Potash, (2) of Chlorine.
6 6. How much Phosphorus is contained in 120 lbs. of bone-ash consisting of 88.4 per cent. of $Ca_3(PO_4)_2$ and 11.5 per cent. of $CaCO_3$? (Ca=40.)
6 What volume of Hydrogen is contained in one ounce of Microcosmic Salt $NaNH_4HPO_4,4H_2$? (37 grains of hydrogen to the cubic foot; Na=23.)
8 7. What is the simplest formula that can be assigned to a substance containing

Carbon, 54.5
Hydrogen, 9.2 } per cent?
Oxygen, 36.3

5 8. The chimney-glass increases the brightness of the flame of the common coal-oil lamp; why does it do so?
5 If you drive a current of air *into* the flame of an ordinary candle, the flame appears less bright than it did before the introduction of the air. Explain why this is the case.

ENGLISH GRAMMAR.

TIME—THREE HOURS.

Examiner—J. M. Buchan, M.A.

Values.

1. "I laugh, when those who at the spear are bold
And venturous, if that fail them, shrink, and fear
What yet they know must follow, to endure
Exile, or ignominy, or bonds, or pain,
The sentence of their conqueror."

5 (i.) Divide into propositions, and state which are subordinate.
15 (ii.) Parse each subordinate proposition as if it were a single word.
6 (iii.) Parse 'to endure,' and 'sentence.'
7 (iv.) Give the derivation of the words in the last two lines.

2. "Know
I come *no enemy, but to set free*
From out this dark and dismal house of pain
Both him and thee, and all the Heavenly host
Of spirits, that in our just pretences armed
Fell with us *from on* high; from them I go
This uncouth, *errand sole*, and, *one* for all,
Myself expose, with lonely steps to tread
The unfounded deep, and through the void immense
To search with wandering quest a place foretold
Should be, and, *by* concurring signs, *ere* now
Created, vast and round, a place of bliss
In the purlieus of Heaven, and, therein placed,
A race of upstart creatures, *to supply*
Perhaps our vacant room, *though* more *removed*,
Lest Heaven, surcharged with potent multitude,
Might hap to move new broils."

—*Paradise Lost*, *Book II*, ll. 821-837.

60 (i.) Parse the italicised words.
(ii.) Parse the following phrases as if each were a single word:
9 'Of pain' (l. 823), 'with lonely steps to tread the unfounded deep' (ll. 828 and 9), 'in the purlieus of Heaven' (l. 833).
5 (iii.) *Both* (l. 824). Give the arguments for and against parsing this word as a conjunction when used in this way.
2 (iv.) *Void immense* (l. 829). In what different ways may each of these words be parsed?
3 (v.) Explain the meaning of 'by' in l. 831.
3 (vi.) Supply the ellipsis after 'removed' in l. 835.
5 (vii.) Discuss the relation of the phrase 'to move new broils' in l. 837 to the verb 'might hap.'

27 3. Make improvements in the following sentences where necessary.

A word before is worth two behind.

It is proved in the first book and twenty-ninth proposition that when a straight line falls on two parallel straight lines it makes the alternate angles equal.

I don't know as I can give it in the words of the book.

Perseverance is indisputable to success.

Let $\frac{a}{b}$ equal to x.

Many of our readers are probably familiar with the Britannia Tubular Bridge, which spans the Menai.

The teacher should encourage cleanliness by all the means in his power, and if he sees that diseases are concealed by the hair or clothing, or that attempts are made to do so, he should see the parents about it.

The temperature is not gradual.

Among the advantages of using steam for warming a building may be reckoned the more equitable distribution of heat.

5 4. Should a meeting of the members of a church for purposes of enjoyment be called a social or a sociable? Give reasons for your answer.
13 5. Explain clearly what you mean by the term indirect object. Point out the indirect objects in the following sentences, and parse all the words in the objective case which are neither direct nor indirect objects:

He made him a coat.
He made him king.
He ordered them to hang the rascal.
He ordered the rascal to be hanged.
Let us not forget this.
I saw him run.
The master taught the boys Latin.
He fought a battle.
He ran a mile.
It measures a mile.

15 6. Point out the ambiguity in

He measures six feet.
He thinks he is beaten.
The duke yet lives that Henry shall depose.

Just at this moment I met a man who seemed a suspicious sort of fellow and turned down a lane.

I am not bound to receive any messenger you may send.

GEOGRAPHY.

TIME—TWO HOURS.

Examiner.—G. W. Ross.

Values.

4 1. Define Equinox, Steppes, Great Circle, and Isothermal lines.
4×4 2. What is the form of the earth's orbit? How do you account for the warmth of Summer in our hemisphere,

although the earth is further from the sun than it is in Winter?

10 3. In what country, or countries, would you be most likely to find the giraffe, the ostrich, the condor, the reindeer, the chamois?

20 4. Outline the west coast of North America, indicating the islands near the coast, the rivers emptying into the Pacific Ocean, and the principal cities and towns on the seaboard.

10 5. Name the States bordering on the lakes between Canada and the United States, and mention at least two cities in each.

12 6. Name six rivers in Asia running south, also the waters into which they empty.

12 7. Over what railroads, and through what large towns or cities would you pass on a trip from Ottawa to Barrie?

24 8. Where and what are Sitka, Cobequid, Lepanto, Cayenne, Socotra, Aral, Kertch, Wight, St. Louis, Canso, Tweed and Chudleigh?

COMPOSITION.

TIME—ONE HOUR AND A QUARTER.

Examiner—JAMES HUGHES.

Each candidate may choose any one of the following topics:

1. Physical Education.
2. The Trials of a Teacher.
3. The Triumphs of a Teacher.
4. "A soul without reflection, like a pile
   Without inhabitant, to ruin runs."

The value of this paper is 75 marks. The Examiners, when valuing the composition, will take into consideration, among other things,

The purity and clearness of the language used.
The grammar.
The punctuation.
The spelling and the use of capitals.

Practical Department.

NOTES ON THE PHILOSOPHY OF EDUCATION.

BY M. M'VICAR, LL.D.

I. THE TEACHER'S WORK.

The teacher's work may be included under two heads, viz., teaching and management. In the present article it is proposed to give simply in outline the laws and principles which should be regarded in one department of the work of teaching, viz., *presentation*. Teaching includes three kinds of work which run parallel and interweave into each other, viz., *presentation*, *testing* and *drilling*. The last two may be made the subject of a future article.

PRESENTATION.

Presentation may be defined as that part of the teacher's work which consists in placing the *subject* taught in *such relation* to the *mind* of the *pupil* that he must become *conscious* of the *real*, that is, of every element in the subject just as it exists.

Accepting this view of presentation to be correct, it will be evident that to teach successfully strict regard must be had to the following fundamental laws and the conclusions named under each.

First Law.—Words either spoken or written are simply symbols or instruments through which the mind records its consciousness and experiences for future use, and through which one mind can make known its consciousness and experiences to another mind.

Hence it follows:

1. The perception of objects must precede their names.

2. The perception of facts must precede the statement of causes, principles, or laws.

3. Clear and distinct concepts must precede definitions.

4. A clear and distinct perception of the steps in a process must precede the statement of rules or formulas.

5. The meaning of words can only be broadened as the experiences of the person using them are broadened by the actual study of the realities which they represent.

Second Law.—The mind must gain through the senses its knowledge of everything external to itself.

Hence it follows:

1. In every case where possible the real things should be present to the sense when studied or taught.

2. When the real thing cannot be present to the sense, as in geography and similar subjects, models should be used, and where this cannot be done drawings and pictures should be used.

Third Law.—The mind perceives wholes first, then parts, then differences, then similarities.

Hence it follows:

1. Our perceptions of any object of study are at first vague and indefinite. They are made distinct, definite and comprehensive by comparison or the perception of differences by which the whole is analyzed into distinct parts or elements.

2. To study any subject it must be resolved into such parts or units as the mind can view in one act or take in as a whole. These units or parts vary in breadth or size according to the strength of the mind for which they are intended.

Fourth Law.—The mind proceeds from the simple to the complex, from the known to the unknown, from the particular to the general.

Hence it follows that subjects of study should in all cases be arranged:

1. So that what is complex is preceded by the simples of which it is composed.

2. So that the unknown is made manifest through its relations to the known.

3. So that a sufficient number of particulars must be examined before general propositions or statements are required.

Fifth Law.—The mind is developed and strengthened in proportion to the effort put forth.

Hence it follows that the pupil must do every kind of work for himself. He must perceive, think, reason, investigate, and discover for himself; he must also express in his own words his perceptions, thoughts, reasonings, investigations and discoveries.

Sixth Law.—The mind can only exercise a definite amount of energy at any one time. This amount increases only as the mind is developed.

Hence it follows:

1. That undeveloped minds such as that of the child can give attention to only one thing at a time.

2. That in all explanations only one step should be presented at a time, and that step should be held before the mind until it is so sharply defined that it requires but little energy to hold it while a new step is undertaken.

3. Illustrations should be simple and familiar in order that the mental energy of the pupil may not be diverted from the very point illustrated.

To teach in conformity with the foregoing laws, the teacher must pursue substantially the following course:

1. He must so thoroughly master the subject to be taught that each element in it is clearly defined in his own consciousness, and that all the elements, in their proper relations to each other, are held in the mind as a unit.

2. He must make himself perfectly familiar with the subjects necessarily connected with the subject taught, or on which the subject taught depends.

3. He must hold clearly in his mind the connection the subject to be taught sustains to the pupil's previous work, and its bearing also on his advanced work.

4. He must before appearing in class analyze each point or subject into separate dependent parts or units adapted to the peculiar stage of progress made by the pupil. These parts he must hold in the order of their dependence in his own mind as a unit.

5. He must present the parts or units into which he has analyzed a point or subject in the order the mind of the pupil must proceed to become conscious of the real. He must hold the pupil to examining and again analyzing the parts presented into other parts or elements, and to observing the relation of these parts to the whole, and to each other, and thus form clear and well-defined concepts.

6. He must guide the pupil in constructing the perceptions and concepts obtained through analysis into the wholes of which they form parts, and thus enable him, after a point or subject is mastered in its parts, to hold all these parts or elements together in his own mind as a unit.—*School Bulletin.*

NOTES OF A LECTURE AND OUTLINE OF AN OBJECT-LESSON.

BY MRS. REBECCA D. RICKOFF.

THE MAPLE-LEAF.—ARRANGEMENT OF FACTS.

And now for the orderly arrangement of facts. After the leaf has been examined and talked about, and the desirable points dwelt upon, the teacher begins to gather up such statements as have been accepted and as she desires to incorporate into this lesson. She leads the children to tell her in what order she must place them upon the board. Allow me to impress upon you, teachers, that it *must not* be the teacher who makes this orderly arrangement, but the school under her guidance,—and not a few bright pupils either, but the whole school. Better a poor arrangement that is an honest index of the work of the whole school, than a better arrangement in which only a few have taken part. The teacher writes upon the board, under the direction of the children, the outline of the lesson.

In placing the children's statements upon the board, the teacher accepts whatever fact a child may give her, even though the language may not be good. But while she tells him that he is right, she asks him if he cannot tell it in a better way,—give a more correct word, give the new word, etc. If he cannot, she permits others to help him. Thus she makes the children give immediate application of all the new words and phrases as they are learned.

It is quite important that all this should be written upon the board as this part of the lesson goes on, in order that the children may see it grow. Perhaps, when it is done, the teacher leads them to see that it can be improved upon, and so, under their direction, alters it until it is at least fairly good. When it is finished to the satisfaction of all, it should be left upon the board. It might, perhaps, be a good plan to have the children copy it.

If the teacher has tact, she will find little difficulty in leading the children to tell, as the first important fact, that the leaf has two distinct parts,—the leaf-blade and the stem. These she writes upon the board in this form:

Leaf,—
  Leaf-blade.
  Stem.

Then she leads them to give her the other names of the stem, until it stands thus:

Leaf,—
  Leaf-blade.
  Stem; foot-stalk; petiole.

In this way she works with the school until the result stands upon the board in some such form as the following. This outline is more elaborate than an ordinary school would be likely to give with profit, in two lessons. But I have put into it for your use all the desirable points that would be at all likely to come up, or that it would be well even to accept for this first lesson. From them you can each select such as seem best adapted to your school and the time you have to give to the subject.

Be careful not to crowd the children with facts, nor obscure their ideas with too many words.

The Maple-leaf,—
  Leaf-blade.
  Stem; foot-stalk; petiole.

Leaf-blade,—
  Appearance,—
    Upper side (sunny-side), bright green; smooth, glossy.
    Under side (shady-side), lighter green, dull; downy.
  Shape,—
    Hand-shaped.
  Parts,—
    Ribs; veins; veinlets; (net veined).
    Five ribs; five points; five divisions.

Cut or tear into parts,—each part like a distinct leaf { One middle part (division) / Two right-hand parts. / Two left-hand parts. } Compare as to size.

  Edge,—
    Notched like a saw; saw-edged (serrate).
Stem,—
  Long, slender (bends easily), limber; has a foot.
Motions,—
  Waves in the wind (depends on stem and shape of leaf); waving.
    "The maple-tree shakes her little hands."

SUGGESTIONS.

Let each child lay his leaf upon his slate, and draw a correct outline of it. Then, with the leaf before him, let him put in the ribs and veins. This fixes the form in his mind.

When the children themselves bring leaves, let them tell where they were obtained.

Let some particular tree near the school-house be selected, and have the children make observations upon it, and report them at a given time at school. Let the tree become to them as a thing to love, a companion to the school. Let it be "our tree," "our dear tree," "our beautiful tree." Let them watch its leaves, and note how they change and fall. Do they come down one by one, a few each day, or does some sudden wind send them down in showers?

Let them bring specimens of its beauty, tell how they fell, where they fell, and describe them as they hold them. Let them tell how the leaves look as they lie scattered beneath the tree.

Later, when they are brown and dry, let them tell how they look, and how the wind tosses them and frolics with them.

When they are hidden by the first snow, lead the children to think of it; let them feel the pathos of it. Then ask them if now they must give up the tree? if there is left nothing more for them to notice?

And now they will find the bird's nest that was hidden by the leaves; they will notice the bare branches against the sky; perhaps they may learn to know the form of the maple-tree so well that they will be able to distinguish a maple-tree wherever they see it, even without its leaves.

Again, let the children bring some branches from the maple-tree into the school-room; let them break off the leaf-buds, open them, and see the young leaves folded away in their winter blankets; and so set them to watching for its earliest budding in the spring.

Will not all nature be henceforth more beautiful and dear to these children, for the sake of this one tree?

STRAIT JACKETS.

BY W. A. BEER, KNOX, PA.

I have no strait-jacket incidents to relate. I shall not even attempt to describe that instrument of torture, which has so frequently adorned the body of the madman. but I shall try to show you that a man can make a strait-jacket of another's way of doing things; and this is the instrument of torture that now demands our attention.

The points which are likely to be made strait-jackets are:

I. *General Management.*

II. *Course of Study.*

III. *Spelling.*—Spelling around the class. Pointing out a pupil to spell a word. Spelling by commencing at the middle of the class, and spelling up and down the class. Spelling in concert.

IV. *Reading.*—Have the pupils read stanza after stanza, until a lesson or chapter is finished. Let one read until called down for making a mistake, then another read, etc., etc. Drill the class until they are familiar with one paragraph, then let them read it in concert, then by twos, then singly, then commit to memory and declaim it. Have some favorite piece, ar d drill only on one paragraph each day. Let the class choose sides, and correct each other. Let each scholar in the class have a blank book, in which he shall write one rule each day, which has been dictated by the teacher, then commit it to memory. Read a paragraph to the class, then have one of the best readers read it. Teach the pronunciation of words by pointing off their syllables.

V. *Geography.*—The teacher asks questions, pupils answer. Teach by map-drawing, outline, or topic. General and special outlines. First method for descriptive geography—mountains, rivers, other bodies of water, islands and capes, capital, and other important places. For what noted. Second method for same—position, form, size, relief, drainage, climate, vegetation, products, animals, inhabitants, employments, constitutions, important places. Then an outline for map questions, to accompany this. Teach by having the pupils write letters describing a trip, or by having them tell what they can see from a certain mountain, etc.

VI. *Arithmetic.*—Have pupils commit rules and definitions; have the pupils solve the problems in the book. Teach by outline or according to a prescribed "course of study."

VII. *Grammar.* Have the pupils commit rules, definitions, etc. Teach wholly by parsing and analysis. Teach by "language lessons."

VIII. *Writing.*—Teach by setting copies without giving attention to *system*. Teach according to some system, from copy-books, from the blackboard.

IX. *History.*—By topic, by question and answer, by uninterrupted recitation, by written recitation, by reciting from maps, by volunteer recitation, by historical essays.

Now, fellow-teachers, many of these methods are excellent, but don't make a strait-jacket of them. If you have a good method of teaching some branch, don't buckle it around you so tightly that you cannot feel the sharp corners of other methods, with which other teachers occasionally give you a gentle reminder.

If you are a college graduate, don't stick to the old college curriculum; and don't think that other teachers don't know anything because they have never been to college.

If you do carry the sheepskin from a normal school, don't forget to consider that, perhaps, that young man who has never been out of his own county may have a much better way of teaching spelling, reading, arithmetic, or grammar, than you have.

Now, some one may ask: "Do you belong to that class of individuals that would deride the 'method teacher'?" "Are you of that class that say, 'all that is necessary to become a good teacher is to attend a good school, learn how to study, go ahead, profit by experience, and rely on innate gumption'?" No, I do not belong to either of those classes of individuals. I believe in gumption. It is a good thing to have; but it will not teach a man intuitively to teach geography, arithmetic, or grammar. We must learn how to teach from those that know. We must know how to deal with the mind—how it grows, its diseases, and how to treat them. To know these things, and what to do with them, we must understand "methods." We must receive instruction in them, and then try to use them. No, I do not decry methods, nor their use, but I do decry their abuse, the making of hobbies, the putting on of a great, ugly strait-jacket.

I do not oppose methods, and I would not bestow the royal title, teacher, on those that do; but I would say, in the language of another, hang the mill-stones of self-conceit about their necks, and drown them in the depths of the sea of their ignorance.

We must observe methods; and of these the first should be general methods. We have general methods, special methods, and personal methods.

General methods underlie the whole science of instruction, and are for all times, places, and persons.

General methods require no proof; they admit of no discussion; but they are as firm and unchangeable as the science of instruction itself.

Notice a few general methods:—(1.) Self-evident, as: Never tell a child what he already knows, or what he can just as easily find out himself. That method is best which leads the pupil to investigate for himself. Attention must be cultivated as a basis of memory. Obedience is a fundamental law of teaching. (2.) Not self-evident: A knowledge of how we think, and how our pupils think. What the mind is, and how it acts. How to impart knowledge in the fewest words. How to influence the mind and mould the character.

These, fellow-teachers, are general methods. The last ones belong to the philosophy of education, and call forth the highest powers of thought.

With regard to special methods, their name is legion. Every teacher has special methods. They are held up in our institutes, and our normal schools have thousands of them. There are special methods of teaching this branch and that, special methods of keeping order, special methods of regulating whispering, etc., etc. Some of them are good, but many are worse than trash.

How self-conceited some teachers are on their special methods. They seem to imagine that they could revolutionize the world with them if they only had a chance. I say, away with the teacher who will get up, in an educational meeting, and bore his auditors by setting forth his or her special methods; for I tell you, teachers, I must wear my own shoes while teaching, for I cannot stumble along in yours, just because yours happen to fit you better than they would me. Each teacher should be a law to himself—should be himself and nobody else.

Now, a word about personal methods. They are inborn. Here is just where gumption comes in. Without our own thoughts and actions, consolidated into personal methods, we are not ourselves. Who is the teacher that fails? It is he who does not depend upon himself. It is he who goes to institutes and fills two or three notebooks with outlines of how to teach, then goes into the schoolroom and starts the school-machinery, and runs it just so, merely because that is the way Mr. A. or Miss B. would do it. If I try to act as you do before a class, I shall fail to teach that class satisfactorily, because your actions are natural, while mine are simulated. Our peculiarities, which happily are possessed only by ourselves, are helps to us, if they are the legitimate offspring of true human

nature. These peculiarities cannot be communicated; they must be a part of our natural being. What we are, a wise Creator has made us; and if we try to rebuild the structure which he has built, we make a great blunder.—*Barnes's Monthly.*

METHODS OF INSTRUCTION AND TEXT-BOOKS IN ARITHMETIC.

BY S. T. PENDLETON.

Time will only allow the statement, as the results of experience, of important heads, each of which might be a text for a chapter of discussion, and such prominent illustrations, criticisms and suggestions as seem pertinent to the subject, as follows:

1. GENERAL PRINCIPLES FOR TEACHING ANY SUBJECT. (*a*) From the known to the unknown, (*b*) passing gradually through similar ideas drawn if possible from the pupil, (*c*) by short and easy steps, or steps that the pupil can take; (*d*) one thing at a time and that thoroughly, (*e*) but by a variety of ways and illustrations, (*f*) with practical application (*g*) and constant reviews.

2. OBJECTS. From objects to the concrete, then to the abstract. Use objects most in elementary instruction and the beginning of subjects; but go back to the concrete or objects whenever the abstract is not understood. The work, then the rule and principles drawn from the scholar and corrected by the teacher and text-book.

3. ORAL AND TEXT BOOK INSTRUCTION. Use oral instruction almost entirely in the lower grades, but oral instruction combined with the text-book in the upper grades. We should teach the *subject* not the *book*. The instruction should *vary* with the school and pupil, and hence not be always like the book.

Text-books frequently hide the essence of the subject in the simplicity of words and points of detail of a full and formal treatise. We should teach *objectively*, that is keep an end in view, and work towards it by the *essential* steps.

A teacher, however, ought to have several arithmetics, and give many examples not in his text-book, or examples made up by himself—give extra examples and even *catch* examples to train and interest the class. Tyndal says he was very successful in teaching geometry by giving out almost entirely problems and theorems for *original* solution and demonstration. The teacher, in the lower grades especially, has to make up a great many examples to suit his circumstances, and because arithmetics do not generally contain a sufficient number of examples graded to suit each point, so as to *drill* thoroughly on any particular point.

Perfect accuracy should be required.

4. CONTENTS OF TEXT-BOOKS. In general the text-book on arithmetic should contain—

a Oral and mental questions, graded, objective, concrete, abstract and practical, with analysis; also oral drills and practical questions combining all the operations gone over, and questions leading to operations.

b Written questions, graded, abstract and practical, with analyses of operations and of practical questions, and full (the fuller the better) forms of slate work as models for the pupil; also questions abstract and practical, combining all the operations and classes of questions gone over separately, with leading questions to draw from the pupil the several operations required in practical questions, questions of cost and price, &c.

Each set of written, should be preceded by its corresponding set of mental questions.

c Definitions and rules, plain and correct; reasons and principles.

d Nature of terms in the fundamental rules; as, which are of the same name, which abstract, which concrete; contents shown not to be an exception to the multipher s being abstract, &c.

e General principles common to several subjects.

f Formula.

5. ILLUSTRATION OF GRADED INSTRUCTION. I will give one limited illustration of this.

Multiplication. First, by one figure.

By the figure 2.

1. 2+2=2 twos=2 times 2=? } 2nd line of the multiplication
   2+2+2=3 twos=3×2 =? } table made by the pupil.
   &c., &c., &c.
2. 2nd line of table made backwards by pupil.
3. 2nd line of table reversed by pupil, as 3×2=2×3=? &c., &c.
4. 2nd line of table made out of order.
5. Drill out of order. Teacher test by pointing at the 9 digits.
6. 2nd line of table, with preceding line made out of order.
7. Drill out of order on the 2nd and 1st lines.
8. Practical mental questions; as, 3 apples at 2 cents each, =? Analysis.
9. Written examples without carrying: $\frac{21121}{3}$, &c.
10. 3×2+1=? 7×2+1=? &c., to prepare for carrying.
11. Practical mental, in the same way; as, 3 apples at 2 cents each and 1 pencil for a cent=?
12. Abstract written examples with carrying: $\frac{9873}{2}$, $\frac{21212}{3}$, &c.
13. Practical written questions on the same; as, 2 houses at $3,850 each, =?
14. Oral drill, 9×2+5—3=? combining the operations taught.
15. Practical mental questions in the same way; as, "Paid for 9 apples at 2 cents each, and 1 orange at 5 cents, out of 25 cents; how much was left?"
16. Abstract written questions, combining the operations taught:—9856+5485+859×2=?
17. Practical written questions of the same character; as, "Bought four houses, one worth 9856 dollars, another 5485 dollars, and 2 others worth 859 dollars each; how much did all cost?"

In teaching *Addition*, &c., use the same general methods given above for multiplication.

Notice to ask the reverse questions 8+2, 2+8, always, and the key, 4+2, 24+2, 94+2.

In *Short Division*, we notice some additional points, as, in the 2 column. 3×2=? 2×3=? 6÷2=? 6÷3=?
4×2=? 2×4=? 8÷2=? 8÷4=?
&c., &c., &c., &c.

In such an example as $8\overline{)746792}$, we might use to advantage the $\overset{2237}{\overline{)93349}}$ preliminary drill:

8)74	8)26	8)27	8)89	8)72
9+2	3+2	3+3	4+7	9

There are two essential steps in short division, a multiplication and a subtraction, as 8×9=72, 74−72=2. A teacher may have to put in extra steps, as, if a class succeed poorly in adding 6 numbers, go back and get them thorough in adding 2 numbers, as $\frac{86434}{21822}$; then get them thorough in adding 3 numbers, &c.

If a class do badly in a multiplicand of 8 figures, drill them in a multiplicand of 3 figures; when thorough on that, use a multiplicand of four figures, &c. So in division; try dividends of 2 figures, then of 3 figures, then of 4 figures, &c., &c.

We would use intermediate steps when necessary. A class might be so bright as to learn thoroughly several steps a day.—*Read before the Educational Association of Virginia.*

REPORT OF THE SUPERVISORS OF THE BOSTON SCHOOLS.

We give below a few extracts from the exhaustive report of the work done in the Boston Schools during the year com-

mencing September, 1878. Intelligent teachers will find in these extracts food for thought and many valuable suggestions.

CLASSIFICATION AND PROMOTION.

"The mode of government and the principles and methods of classifying and promoting pupils seem to us, in general, good. It has been questioned whether the monthly written examinations of the various classes may not put too great physical and mental strain upon some of the pupils. But something of the sort is a necessary evil (in so far as it is an evil), and the teachers may be trusted, we think, to use their judgment and discretion in the matter. It is much better than an elaborate system of marking the daily recitations."

"The requisition that each room shall have a definite number of pupils interferes somewhat with proper classification, especially in the smaller schools; but we do not, on the whole, regret the necessity of promoting pupils who have been a reasonable time in one class, even if they are not in all respects equal to the best. Such promotion frequently encourages dull pupils, and they take, if not a high mark, a respectable position in the class."

"Promotions depend upon the record of daily work and the results of examinations. Real interest in study is discernible, and the higher motives are undoubtedly the more influential. As far as observed, the conditions are favourable to the building up of good character. The influence of all the teachers is certainly strong in this direction."

MERIT AND CHECK SYSTEM.

"In regard to 'mode of government,' we would specially commend the freedom from dependence upon the 'merit' and 'check' system, so prevalent in our schools, and so pernicious in its mental and moral influences. The quick, ambitious pupils are spurred on unduly, while those of slow development are discouraged by it. We doubt if many pupils can be inspired with true 'motives to study' while striving for percentage and rank; and, in our opinion, the teaching ability is lessened when a conscientious teacher is endeavoring to estimate fairly the value of each pupil's recitation."

EMULATION.

"Emulation organized into a principal means of inciting youth to greater study must seriously impede, although it may not prevent, the working of the higher active principles of human nature. Instead of being allowed to keep its humble place and to do its simple and healthful work, emulation is made king. Its sway is terrible. Rank, and not scholarship, is its end. It incites the quick and sensitive to outstrip each other in the race,—too often fatal; it causes others to strive for what they cannot attain, and at last fills them with discouragement, or, what is worse, with indifference."

The supervisor in English Language reports as follows:

"The instruction in language since the adoption of the new programme has undergone a marked change. It begins in the lowest class of the primary schools, and, by a system of graded exercises, both oral and written, pupils soon acquire the power of expressing their thoughts fluently, and writing so correctly as to do great credit to themselves and their teachers. The study of technical grammar is postponed to a much later period than formerly, but the critical *use* of language in the oral lessons, and in daily written exercises, has been attended with the happiest results. Grammar, thus taught, has become to the pupils what it has always professed to be, without, however, fulfilling its promise,—the means of enabling them 'to speak and write correctly.'"

The examiner of Oral Instruction, Geography, and Natural History reports:

"Much progress has been made during the year in the department of oral instruction. Happily the present course of study sets apart time for that fundamental training which is secured by right methods of oral instruction; and many teachers have found a pleasant stimulus to their own culture, and much interest and profit to their pupils, in the hours given to this part of the programme. They have found neither 'perpetual telling' nor 'lecturing' expected of them, but have needed only to present proper objects or subjects for observation and thought, and their scholars, younger or older, have been eager to study them, 'to learn their own facts,' 'to arrive at their own conclusions,' and to tell what they had learned; thus securing that mental activity, and that facility of expression which are essential to progress in every branch of study."

Of Reading, Spelling, and Foreign Languages the examiner says:

"The introduction of the *Nursery* as supplementary reading in the primary schools has already produced a marked improvement in the reading. Great good has also been done in the grammar schools by allowing the pupils to read the entertaining and instructive books that have been used for the last three years in the Public Latin School.

"Since the withdrawal of the spelling-book from the schools, spelling has been taught in various ways; the words in the reading and other lessons have been spelt, often in sentences and in connection with the language-lessons. Time is saved by this rational process; some wearisome drill is spared to scholars and teachers; and it is confidently believed that the results in this branch will be better than ever before.

"In the high schools more attention has been given, in almost all the classes in the foreign languages, but particularly in classes of beginners, to translation and reading, and less to grammatical drill. Of course there is a time for thorough grammatical drill, but this is not when one is at the threshold of a new language. Some practice should precede theory and rule."

Of the teaching of Writing and History the examiner says:

"Most commendable progress has been made in the important branch of writing. In the primary schools the pupils are not subjected as formerly to the uninteresting task of copying printed or script letters from the book, but are now, even in the lowest classes, writing words and sentences quite legibly from dictation and from copies on the blackboard. Writing is very profitably employed in teaching reading. The pupils of many primary classes originate and write sentences that would do credit to pupils in the grammar schools.

"Pupils are enjoying the much-needed and profitable practice of off-hand writing, in addition to the more special instruction of the regular copy-book. Instead of being any detriment to their handwriting it is of great benefit, giving, as it does, character to the writing and facility in its execution.

"Marked improvement is visible on every hand in the methods and means employed in prosecuting the study of history. Teachers are becoming more and more independent of, and superior to, the text-book."

The examiner of Mathematics reports that,—

"The 'memorizing' of figures and names and numbers is giving place to the acquisition of ideas of numbers by means of objects, and to the simple expression of those ideas by words and figures. Dead figures have come to life, and the boys and girls are learning arithmetic by *using* it. On the whole, there has been this year an improvement in the aims, the methods, and the results of mathematical study and instruction in the public schools."

The supervisor in Bookkeeping and Physics says:

"Due attention has been paid in the grammar schools to bookkeeping by single entry. The principles upon which it rests have been made clear, and considerable practice given in their application.

"The introduction of the study of elementary physics earlier in the grammar-school course has been attended with fair success. The results reached are the more satisfactory, the more the teaching has been by the 'experimental method.'"

—"Cramming" scholars in the public schools was somewhat severely discussed recently by the Ministerial Association of Dayton, O. Several members agreed that children should not spend so much time in study out of school-hours; and it was suggested that the clergymen should shortly, in connection with the physicians of the city, give the subject a more careful consideration.—*N. Y. Tribune.*

—Mr. Thorburn, Head Master of Ottawa Collegiate Institute, offers $40 for the best history of the County of Frontenac.

—Barrie High School now employs four masters, has an attendance of over 120, and is in a very efficient state.

PERSONALS.

The scholarships are awarded as follows :—

Classics.—Alex. Crichton, St. Catharines Collegiate Institute.

Mathematics.—Geo. Ross, Hamilton Collegiate Institute ; John McKay, St. Catharines Collegiate Institute, four months ; Brantford Collegiate, nine months.

Modern Languages.—Alice Cummins, Hamilton Collegiate Institute.

General Proficiency—H. H. Langton, Upper Canada College ; E. W. Hagarty, Toronto Collegiate Institute ; J. C. Robertson, Goderich High School ; H. Boms, St. Mary's High School.

Alex. Crichton stood first in general proficiency, but was not entitled to hold a scholarship, having gained one in classics. John Squair (from Bowmanville High School) was marked third in general proficiency, but could not take the scholarship, owing to his being over the age prescribed by the statute—twenty-three years.

Dr. Jacques has consented to a re-appointment as President of Albert College and University. The institution will not, therefore, lose the advantages of his scholarship and experience.

Mr. Sidney Hunton, of Ottawa, who won the Gilchrist Scholarship last year, has carried off the first prize in mathematics in London (England) University.

Rev. Dr. McCaul, President of Toronto University, and Prof. Croft, of the same institution, have retired with a superannuation allowance. They have long been connected with the University, and have done much to secure for it its widespread reputation.

Mr. Alex. Tassie, formerly classical master of the Galt Collegiate Institute, was recently presented by the pupils with a silver ice pitcher and goblet on his retirement from the position which he has held in the institution for several years past with such credit to himself.

Mr. Rufus A. Coleman, B.A., has been appointed to the position of classical master in Stratford High School, in the place of Mr. S. Percy Davis, M.A., who has taken a situation in Pickering College.

Prof. McCoun, of Albert College is making a geological survey of a portion of the North West Territory.

Mr. Johnston, in resigning his position in the Agricultural College, may well look back with pride over the work he has accomplished.

In an article on the Bibliography of Hyper-Space and Non-Euclidean Geometry, in the first number of the second volume of the *American Journal of Mathematics*, there occurs a notice of a paper by Prof. George Paxton Young, which was published in the *Canadian Journal* so far back as 1860. After stating the object of Prof. Young's paper—which was to prove that, if Euclid's axiom regarding parallel lines be supposed to be not true, a definite relation can be established between the area of a plane triangle and the sum of the angles—the writer of the article goes on to say :—"This paper was drawn up without the slightest knowledge whatsoever that anything had ever before been written or spoken on the subject." Thus the name of Prof. G. P. Young must be added to those of Lobatchewski and Bolyai as an independent discoverer of the possibility of a pseudo-spherical geometry. The proof, which is in the style of Euclid, is thoroughly elementary, even more so perhaps than Bolyai's, and, like his, is applied to but two of the three geometries of surfaces of constant curvature ; the assumption of Euclid's sixth postulate in the very first proposition shutting out spherical geometry. Omitting this proposition, the proof is easily extended to pan-geometry. It is worthy of notice that the proof begins with the very proposition with which Legendre attempted, in the twelfth edition of his Elements de Geometrie, to found a demonstration of the theory of parallels." —*Globe.*

Notes and News.

ONTARIO.

Military Drill is taught to the pupils of Trinity College School, Port Hope.

Sidney Hunton, the young Canadian who succeeded in winning the first prize in mathematics at London, Eng., University, writes to his mother at Ottawa as follows: "I have finished with University College for this session. The prizes were distributed last Wednesday by the Earl of Kimberley. I am glad to be able to say that I did better in my examinations than I expected to do, and got the first prize in the senior class of mathematics. Prof. Henrici gave me a standard French work on mathematics, in two stout octavos, very finely bound, and marked with the college arms. I was very proud of being a "colonist" (as they call us) that day. There are a good many fellows here from the different colonies, New Zealand, Cape Colony, India, etc, and I think about half the prizes were taken by them." Hunton is twenty one years old.

At the last meeting of the First Division of Wellington and City of Guelph Teachers' Association, the following resolution was passed, viz. : *Resolved*—That in the opinion of this Association it is desirable that the Provincial Convention of Teachers, which is held annually in Toronto, should be composed wholly of delegates appointed by the various Local Associations, to represent them at such Annual Meeting, and that a copy of this resolution be forwarded to the Secretary of the Provincial Association and other Associations for their consideration.

Toronto School of Medicine.—This popular School of Medicine opens its thirty-seventh session on Wednesday, October 1st. The splendid new lecture room, the new museum, and the various other improvements that were completed last fall, make this institution second to none in Canada, in the facilities for obtaining a sound medical education. As heretofore, a large roll of students will doubtless reward the faculty for their efforts to provide every convenience and comfort for the study of medicine in all its branches.

Pickering College has been established by the Society of Friends in Canada. The College is located in the Village of Pickering, quite near the Duffin's Creek Station of the Grand Trunk Railway (twenty-two miles east of Toronto), and only five miles west of the Town of Whitby. The object of its founders is to secure to its students as thorough an education as can be obtained outside of a university or of a professional school, and at the same time to surround them with all the moral influences and guarded care of a well-conducted home. The following is its staff of teachers : John E. Bryant, M.A., Gold Medallist of the University of Toronto, Mathematics, Physics, and Commercial Branches ; S. Percy Davis, M.A., Gold Medallist of the University of Toronto, Classics and Natural Sciences ; Lydia N. Bowerman, Graduate in Arts of Earlham College (Society of Friends), History, English and Mathematics ; Antoinette Reazin, Graduate in Arts of Earlham College (Society of Friends), Modern Languages. Messrs. Bryant and Davis have already made their mark in the High Schools of the Province. Mr. Bryant is principal.

The following extracts from the reports of County Inspectors will be of general interest :—

Halton.—The number of children between 7 and 12 years that did not attend school for the full four months required by law, was 725—decrease 178, or nearly 24 per cent. of the number enrolled between the years specified. This is an improvement of fully four per cent. It is gratifying to observe even a slight increase in the number of those complying with the law in regard to four months' attendance. The highest salary paid a male teacher was $600 ; the lowest salary paid a male teacher was $367—increase $32. The average salary of male teachers by townships, including incorporated villages, was $443.39 increase, $13.22 ; of female teachers, $288—increase, $5. Thirty teachers received less than $301 per annum ; 26, between $301 and $401 ; 22, between $401 and $501 ; and 6, between $501 and $601.—*Inspector Little.*

Lanark.—The following remarks in relation to County Model School training are to the point :

The course of training pursued, and the experience in the "art of teaching" acquired in this model school attendance, is already making itself felt in the several schools in which these teachers are engaged, and as the system is yet in its infancy, it may be confidently expected that it will improve. The public have at least some guarantee that the new teacher does not enter upon his pro

fession an entire novice in that art, but that he has been introduced to his work armed with the opinions and methods of those whose experience enables them to speak with authority in matters pertaining to the science of teaching. And here let me remark that I cannot conceive of a more secure protection than exists for the trustees in the engagement of a new teacher, who has not acquired for himself a recognized reputation, than the certificate which is now issued. Setting forth, as it does, both the *literary* and the *professional* standing of its holder, with special prominence being given to that all-important qualification embraced under the item "Aptitude to Teach," it introduces the teacher to the public in no disguised garb of scholarship, but in his two-fold capacity of scholar and teacher. Trustees have still further access to the professional qualification of the teacher in applying, through the Inspector, for the candidate's record at the Model School, as set forth in the "Final Report" of the head master. It cannot be admitted, nor could it be reasonably expected, that all who are sent out by this *fiat* of the board of examiners are equally qualified for the work in which they are to engage, but their characters are written. Let the certificates be examined carefully before engagement, and subsequent disappointment may be avoided.

Writing.—Perhaps there is more ground for complaint here than in any other subject of instruction; and I am not prepared to say that the teacher is altogether to be blamed. The tendency of frequent written examinations is, I think, injurious to finished mechanical execution in this art. Be that as it may, I think that we should be able to exhibit greater proficiency in copy-book exercises generally. The use of that admirable practical series of copy-books of "Beatty's," close personal supervision on the part of the teacher, and blackboard and slate exercises on "principles," accompanied with constant admonitions on the value of neatness and taste: these and other points which will readily suggest themselves to the thoughtful teacher, will, if persisted in, without doubt remove the cause of complaint. Each page of the copy-book should have value attached to it, and the books should be carefully arranged in the teacher's desk. If, in addition to the foregoing hints, the trustees were to call for the copy-books on examination day, a further incentive might be given to all to aim at increased proficiency in the exercise.

In connection with this subject I may observe, that during the year I have been urging upon teachers the importance of "exercise books" for the advanced classes. We are deficient in written records of pupils' work; children have little or nothing to show in this line. In this respect, as in the copy-book exercise, we seem to have lost rather than gained under the present generation of teachers. I look, however, for more satisfactory results in both "copy-books" and "exercise books" for the future, and will no doubt be able to report progress in a year to come.

There are 32 libraries in the county.—*Inspector Slack.*

The result of the recent local examinations for women at the University of Toronto has been declared. The subjects of examination are divided into the following groups: 1st. The classics of the junior matriculation; 2nd. The mathematics of the junior matriculation; 3rd. The English History, and Geography, and French or German of the junior matriculation. Following is the list:—

Aitken, Jemima, Port Dover, group III; Armstrong, Sarah, Brantford, group III.; Bold, Maachahe, Welland, group I.; Buchanan, Elizabeth, Port Dover, group III.; Craigie, Agnes, Port Dover, group III.; Devereux, Annie, Brantford, group III.; Hart, Jessie, Brantford, group III.; Harding, Maggie, Port Dover, group III.; Harding, Mary, Port Dover, group III.; Irvin, Emily J., Woodstock, groups II. and III.; McCoy, Maggie, Hamilton, groups II. and III.; Myers, Alice, Guelph, groups II. and III.; Nichol, Maggie, Port Dover, group III.; Roos, Emma Rosina, Berlin, groups II. and III.; Sinclair, Mary, Port Dover, group III.; Stewart, Maggie, Hamilton, group II.; Waldon, Emma Julia, Berlin, groups II. and III.; Whitwam, Martha Milissa, St. Thomas, groups II. and III.; Widder, Maud, Brantford, group III.; Workman, Minnie, Port Dover, group III.

Honour List.—English—Class II.—1. Buchanan, E.; 2. Bald, B.; 3. Walden, E. J., and Whitwam, M. M. French—Class II.—1. Whitwam, M. M.; 2. Craigie, A., and Workman M.; 4. Walden, E. J.; 5. Roos, E. R. German—Class I.—Roos, E. R., and Walden, E. J. Class II.—McCoy, M. History and Geography—Class II.—Buchanan, E.

HASTINGS.—Want of punctuality, irregularity of attendance, and absenteeism for long periods, are the greatest hindrances to the advancement of popular education. They cool the enthusiasm of our best teachers, mar their most wisely-directed efforts to perform their most important work—*the formation of character*—act with baneful influence on the irregular attendant and absentee, and retard the progress of the whole school. The most efficient instructors complain, with justice, of these evils, and the least efficient constantly cite them as the sole cause of their failures. They cannot, in a country like ours, be entirely removed. Distance from school, the poverty of parents, bad roads, and the necessity for the child's assistance at home, are reasons for absence from school which cannot always be answered. But the indifference of parents and teachers, and the unattractive, uninteresting, and unprofitable character of much of the work done in some of our schools are fruitful sources from which a large part of the evil springs. These causes can and should be removed. Intelligent care in the selection and retention of teachers is the best, though not the only remedy.

During the last session of the Ontario Legislature a number of very important changes were made in the School Law. No weighty objection can, perhaps, be made to the majority of these amendments. Some of them, however, are retrogressive in their character, and will, I fear, injure our school system. By frequent amendments and additions, the School Law and Regulations have now become a volume of considerable size. I think I will have the sympathy of many when I venture, with all respect, to hope that our Legislature will now, so far as educational legislation is concerned, take a much-needed season of relaxation from their arduous labors, and thus afford to Trustees and School Officials generally an opportunity for becoming acquainted with the duties and responsibilities imposed upon them by law.—*Inspector McIntosh.*

The following regulations have been made by the Dominion Government respecting military drill in educational institutions:

1. Owing to the limited means available, the organization of such Companies will be confined until further orders to Universities, Colleges, Normal and High Schools.

2. The total number of Companies to be organized at present is not to exceed 74, of which there may be in Ontario 34, Quebec 24, in the Maritime Provinces 13, in Manitoba 2, and in British Columbia 1.

3. These Companies are intended to be instructed in military drill and training only, and upon no account to be employed in active service.

4. Rifles and accoutrements will not be furnished to any University, College, or Normal School in which the Company will consist of less than forty regularly enrolled students attending thereat.

5. The rifles will be Snider-Enfield or other approved pattern, with bayonet and scabbard complete.

6. The accoutrements will consist of a waist belt, with ball bag and bayonet frog.

7. Suitable books to be used for military instructional purposes by each Company will be supplied by the Department of Militia and Defence.

8. The services of a drill instructor will be supplied and paid for by the Government during one month in each year, or such further time as may be deemed advisable by the Department, to assist in the instruction of each Company. Each month may be divided into two equal parts if considered advisable.

9. The exact dates when services of such instructor will be available will be arranged and notified so soon as it is ascertained how many Companies will be organized, and which will be the most suitable times to meet the circumstances of each Company and convenience of the authorities of University, College, or School.

10. Special provision will be made for instructors in British Columbia and Manitoba.

11. Applications for permission to form Companies under the above regulations are to be forwarded to the Deputy Adjutant-General in the respective military districts for consideration at headquarters, Ottawa.

It is further provided that school authorities must supply members of Companies with uniform clothing of a pattern and colour to be approved by the Government, but if a special uniform has been adopted at the school it will not be objected to if suitable for military drill.

Harriston proposes to have a High School.

St. Thomas is extending its Public School accommodation.

One hundred and eighteen candidates presented themselves at the Third Class Teachers' Examination in Lanark Co.

Ottawa School Board has decided to have drill taught in the Public Schools of that city.

The graduates of Toronto University residing in Brantford have

organized a Branch Alumni Association, with J. Howard Hunter, M.A., as President.

There are 6 teachers in the Guelph Separate Schools.

QUEBEC.

At present there is a scarcity of news in educational matters. Teachers and pupils are alike enjoying their much needed holidays, preparing and bracing themselves for further work at their close. For the time being the interest in this Province in all questions of education is centred in the Legislature now in session. There are rumors that great changes are contemplated in the Department of Public Instruction, as that the present inspector of schools is to be done away with and a Minister of Public Instruction appointed, &c., &c.; but there has been no intimation from the Government itself of any such intention, and the rumor itself is possibly due to political partizanship.

A deputation from the Protestant School commissioners of Montreal and St. Henri has been sent to the Legislature at Quebec to endeavor to secure a change in the School Act with respect to the distribution of school rates paid by corporate companies. At present these rates are divided between the Roman Catholic and Protestant School Boards in the same proportion as the population of the different creeds in such school district or municipality. The change sought in the School Act is that the rates be distributed in the same ratio as the proportion of Protestants and Roman Catholics in the said corporation. Some are of opinion that the school rates derived from joint stock companies should be divided between Protestant and Roman Catholic School Boards in the same proportion as the stock held by the different parties.

At the last meeting of the Protestant Committee of the Council of Public Instruction, held on 28th May last, the following recommendations for legislation were adopted :—

(1.) That any Bachelor of Arts of any British or Canadian University on presenting his diploma and paying the usual examination fee shall be exempted from the matriculation examination of the College of Physicians and Surgeons, and shall be duly registered as a student in medicine.

(2.) That any student having matriculated in Medicine in any university in the Province of Quebec shall, in like manner, be exempted, provided that the subjects of examination in such university shall have been previously submitted to the Council of the College of Physicians and Surgeons and approved thereby.

The committee are requested also to confer with the Superintendent of Education and the sub-committee of the Catholic committee, and such other bodies as may be necessary, with reference to similar provisions as to entrance on the study of the legal, notarial and other professions.

The committee are thus desirous of promoting the cause of superior education by encouraging all who wish to study for any learned profession to take a purely literary course first and graduate in Arts before entering on their professional studies proper. To save time and trouble for teachers in academies it is also desirable that the matriculation examinations for universities and the entrance examinations for the different professions should, as far as possible, be assimilated.

The University School examinations, under the superintendence of McGill University, Montreal, and the University of Bishop's College, Lennoxville, for certificates of the University and the title of Associate in Arts, were held towards the end of May last in Montreal and Lennoxville. Local centres may be appointed elsewhere on application to the Principal of either University, accompanied with a satisfactory guarantee for the payment of necessary expenses. Judging from the increase of numbers from year to year of those availing themselves of these examinations, and the additional institutions sending up pupils, these university examinations are growing in favor with the public. No fewer than 35 pupils from the following institutions received after the last examination the title of Associate in Arts, viz :- 11 from the Montreal High School, including the two highest on the list, 12 from the Collegiate Institute, Hamilton, Ont., the third, fourth, fifth and sixth on the list; seven from Bishop's College, Lennoxville, 1 from Lachute College; 2 from the Girls' High School, Montreal, and 2 from Dunham Academy.

Ten pupils also received junior certificates. 4 from the Collegiate Institute, Hamilton 5 from the Senior School, Montreal; and 1 from Berthier Grammar School. Such examinations are extremely useful, awakening a wholesome rivalry among the schools, connecting them more closely with the universities, tending greatly to elevate the standard of education, to introduce the best as well as a uniform system of text-books, and to create an interest in, and a desire for, a university course.

NEW BRUNSWICK.

The Encœnia of the University of New Brunswick, which happened this year to be the fiftieth anniversary of the foundation of the college, took place on the 26th of June. His Honor the Lieutenant-Governor was present, and occupied a seat beside the President. In the absence of the Classical Professor, who was to have delivered the usual oration in praise of the founders, Dr. Jack, the president, gave an oral address, in which he urged the claims of the institution for more liberal support from the people. The orator on behalf of the Alumni was W. Pugsley, A.B., B.C.L., whose subject was "University Education and its Influences upon Life and Character." Fourteen young gentlemen received the degree of B.A., and two that of M.A. The Douglas gold medal, for the best English essay on a given subject, was carried off by W. D. McLeod, who also graduated with honors in mental and moral sciences, and obtained a prize and honor certificate for proficiency in French. The winner of the Alumni gold medal, for the best Latin essay, was H. B. Pickard, of the junior class, who also obtained an honor certificate in mathematics. J. T. Horsman, A. Wilkinson and H. V. B. Bridges were the winners of the class scholarships; and C. P. Hanington gained the much coveted prize for proficiency in Natural Science.

Just before the Encœnia three vacancies in the Senate of the University were filled by appointment of the Hon. J. C. Allen, Chief Justice, Allan A. Davidson, Q.C., M.P.P., and Boyle Travers, M.D.

At the meeting of the Associated Alumni, held June 25th, the following officers were elected; President, A. B. Atherton, M.D.; Vice-Presidents, Wm. Crocket, A.M., Wm. Pugsley, A.B., B.C.L., H. S. Bridges, A.M., Secretary-Treasurer, J. A. Vanwart, A.M.; F. E. Barker, A.M., D.C.L., and Wm. Pugsley, A.B., B.C.L., were elected to represent the Alumni in the University Senate. It was resolved that in future graduates of not more than one year's standing as well as undergraduates, may compete for the Alumni gold medal.

Council—F. E. Barker, D.C.L., Rev. G. G. Roberts, A.M., Geo. E. Coulthard, A.B., M.D., G. H. Lee, A.M., C. A. Macdonald, A.B., G. W. Allen, A.B., and Loring W. Bailey, A.M., Ph.D.

The Senate appointed Mr. John Fletcher, B.A., of Toronto University to the vacant chair of Classics.

At St. Joseph's College, Memramcook, the terminal exercises were held on the 25th of June. Mr. E. J. McPhetim, of Chicago, a member of the graduating class, delivered an oration on "Ideal Education," which is said to have been an exceedingly meritorious production. The valedictory address was given by Mr. J. P. McInerny, of Kent County.

The semi-annual examination of the St. John Grammar School took place July 9, in the presence of a number of visitors, including the Mayor, several clergymen and other gentlemen of note in the city. The corporation gold medal, given annually for the highest general standing, was awarded to John McIntosh; and the Parker medal to Wilnes Duff, as the best in mathematics.

Several teachers' institutes have met during the past two months, viz., those of Queen's, Sunbury, Kent, Charlotte, Gloucester and St. John Counties.

The Queen's County Institute met at Gagetown, June 12th and 13th, when the following subjects were discussed, in written papers and orally:—Etymology; Canadian History; the importance of the study of English grammar; Elocution; the value of the study of English classics, the higher branches of study, and how best to instil in the pupils a desire to excel; and the different results produced by classical and mathematical training. Practical lessons were given in vulgar fractions, geography, physical and vocal training, and the analytical method of solving geometrical problems. The officers elected were: Rev. B. Shaw (Inspector), President, Mr. J. Edgar Henry, Vice-President; Mr. A. C. Belyea, Secretary-Treasurer; Messrs. L. A. Curry, M.A., and J. Leslie Smith. At the evening session Mr. Curry delivered a public lecture on the subject of Education.

On the 26th of June the Sunbury Teachers' Institute met at Fredericton Junction, and elected its officers as follows:—Mr. Geo. S. Allen, President; Miss Ida Barker, Vice-President; Mr. G. H. Bulyea, B.A., Secretary-Treasurer; Dr. J. H. Bridges (County Inspector) and Mr. G. H. Miner. Mr. Bulyea read a paper on "Stimulating and directing the energies of the pupil the chief functions of the teacher," which was followed by a discussion.

Exercises in reading, with criticisms by the members generally, constituted the remainder of the first day's work. On the second day Dr. Rand, Chief Superintendent, and Mr. H. C. Creed, of the Provincial Normal School staff, were present and added much to the interest of the proceedings. A paper on "The best method of teaching English Grammar and Analysis" was read by Miss Carrie Alexander. A series of physical exercises was performed at intervals, under the direction of Mr. Creed. There was a discussion on the question "How writing may best be taught." Inspector Bridges read an address on "The importance of earnestness in the teacher's work," which was followed by remarks from several gentlemen. A practical lesson in reading was given by Mr. Creed; and Mr. Allen, the President, dealt with the subject of "Time Tables," exhibiting a specimen table on the blackboard. Before the close of the institute the programme for the next annual meeting was decided upon, and a vote of thanks was tendered to the gentlemen from Fredericton for their presence and hearty co-operation.

The Kent County Institute held its second annual meeting at Richibucto, July 3rd and 4th. Mr. Inspector Wood was re-elected President; Mr. G. A. Coates was chosen Vice-President; Mr. C. H. Cowperthwaite, Secretary-Treasurer; Mr. C. L. Barnes and Miss Gifford, additional members of committee. The subjects brought before the institute were as follows: A lesson on Fractions, by Miss Ellen Chrystal; a paper on "Written Description," by Mr. Harnett; one on "Grammar," by Mr. H. Powell; a lesson on Oral Grammar; a paper on "Penmanship," by Mr. Daniel Gillis; another on "Grammar," by Miss Annie Chrystal; a reading exercise, and a paper on "Music," by Mr. Coates. Discussions followed the several lessons and addresses; and there was also a discussion on school management, opened by Dr. Rand, whose presence contributed greatly to the success of the meeting, and who delivered a public lecture in the evening of the first day. In the last session the programme for next meeting was arranged; the question-box was opened, and the teachers sang "Auld Lang Syne" before separating.

Three institutes met simultaneously on the 10th July, namely, those of Charlotte, Gloucester, and St. John counties—at St. Andrews, Bathurst and St. John respectively. Friendly greetings were exchanged between them by telegraph.

The Charlotte County Institute was favored with the presence of both the Chief Superintendent and Dr. Jack, President of the University, who attended all the sessions and took part in the discussions. The election of officers and Executive Committee resulted as follows: Mr. J A. Freeze, A.B., President; Mr. Arthur M. Smith, Vice-President; Mr. Geo. J. Clarke, Secretary-Treas.; Mr. J. F. Covey, A.M., and Miss Addie Hanson. A committee on by-laws had been appointed at the first annual meeting, but it was now agreed that the 23rd regulation contains all that is necessary in the way of rules. A paper on "The importance of instructing pupils in the subjects specified in Regulation 22" (relating to morals), written by Mr. James Vroom, who was not present, was read by Mr. Covey. Prominent among the topics in the discussion which followed was that of tale-bearing. The subjects of the other papers read and discussed were "The teaching of grammar and analysis," by Mr. A. M. Smith; "The place of written examinations in a school curriculum," by Mr. Freeze; "Thoroughness in teaching," by Mr. Inch. The discussions were marked by earnestness, and by the practical experience and sound judgment displayed.

At the opening of the St. John County Institute, held in the Victoria school building, Mr. Freeman, the chairman, called upon Dr. Bennett, Superintendent of the city schools, who spoke a few words of counsel to the teachers. The executive committee and officers chosen for this year are Mr. H. S. Bridges, A.M., President; Mr. Wm. Wills, Vice-President; Mr. G. U. Hay (re-elected), Secretary-Treasurer; Mrs. Carr and Miss Kerr. At the subsequent sessions the following papers were read before the institute: "The best way of securing accuracy in primary school work," by Mr. John Montgomery; "Mechanical drawing in the public schools," by Mr. W. C. Simpson; "The best methods of teaching composition," by Mr. D. McIntyre; "What constitutes perfect order in the school-room?" by Mr. H. S. Bridges, "The teaching of geometry," by Mr. Coyngrahame. A committee was appointed to prepare a suitable expression of the feelings of the institute in reference to the death of the late inspector, Mr. Duval. Resolutions were adopted expressive of respect for Dr. Coster, and sorrow at the affliction which has caused his withdrawal from active labor. The attendance of teachers was large.

NOVA SCOTIA.

The public exercises connected with the close of the scholastic year of Acadia College took place on the 4th and 5th of June. These, as well as the brilliant display at the convocation at King's a fortnight later, were interesting enough to deserve a timelier notice at the hands of your itemizer.

The exercises of Graduation were preceded by the formal opening and dedication to learning and literature of the handsome collegiate edifice erected to replace the old Acadia, which was swept away by fire in December, 1877. At this interesting ceremonial, Hon. Doctor Parker, of Halifax, presided, and delivered an address replete with inspiring historical reminiscences. Among the marked features of the occasion were speeches from the two veteran ex-Presidents, Doctors Cramp and Crawley. Dr. Rand, Chief Superintendent of Education for New Brunswick, also spoke, and the concluding prayer was offered by the venerable Doctor Tupper, father of the Hon. Minister of Public Works.

An evening was devoted to an exhibition combining both literary and musical features, by the students of the Herton Academy. This institution—largely a feeder to Acadia College—was represented to be in a very flourishing condition under the principalship of Prof. J. F. Tufts.

At the public Graduation Exercises on the 5th, thirteen young gentlemen were admitted to the degree of B.A. The following list gives the names and residences of the graduates:

Arthur W. Armstrong, Wolfville; Henry B. Ruggles, Bridgetown; Chas. D. Rand, Canning; Ralph Hunt, Dartmouth; H. Albert Spencer, Cape Breton; Willard P. Shaffner, Annapolis; Horace L. Beckwith, Halifax; Fred. A. Hobart, Windsor; Granville B. Healy Round Hill; A. J. Denter, Digby; G. O. Forsyth, Greenwich; R. G. Haly, Yarmouth; Charles K. Harrington, Sydney, C.B.

The Associated Alumni met in annual session and elected their official staff for the year as follows:

President—Rev. J. W. Manning, B.A.
Vice-President—J. W. Longley, M.A.
Secretary-Treasurer—William L. Barss, B.A.
Directors—R. N. Beckwith, Esq.; H. H. Bligh, M.A.; B. H. Eaton, M.A.; A. Caldwell, M.A.; H. C. Creed, M.A.; Prof. D. F. Higgins, M.A; Hon. Neil McLeod, B.A.

Counting in the thirteen who graduated, the graduates of Acadia number 178. The first class graduated in 1843; 25 have since departed this life.

The Anniversary Exercises were felicitously terminated by an elegant collection in the spacious refectory of the institution, under the auspices of the Associated Alumni. Humor, learning, eloquence and patriotism shone forth in numerous post-prandial addresses.

The Encœnia, or Annual Convocation of the University of King's College, Windsor, was held on the 25th of June. On the preceding day the Associated Alumni held their session, Henry Pryor, Esq., W.C.S., President, in the chair, and a large number of the Alumni being present. After the report had been disposed of, the election of Governors took place to fill the vacancies made by the death of Dr. McCaulay and Mr. Fred Allison and Mr. Poole.

The following were elected:

Hon. Senator Almon, Mr. Wiggins, of Windsor; Rev. Dr. Jarvis, of New Brunswick; and Rev. Mr. Hodgson, of P. E. Island.

Vacancies in the Committees of the Associated Alumni were filled by the appointment of Hon. S. L. Shannon, Mr. Jos. Cameron, Mr. W. B. Sutherland, and Mr. J. A. Shaw; A. J. Cowie, M.D., was elected President, and Dr. T. Trenaman, of Halifax, Vice-President.

At noon the regular proceedings of the Encœnia commenced, and the Alumni and the Governors of the College took their seats on the platform. The President, Rev. Dr. Dort, took the chair, with His Lordship the Bishop and Sir William Young on his right, and His Excellency Sir E. A. Inglefield on his left. On the platform were Rev. Chancellor Hill, Hon. Dr. Almon, P. C. Hill, Esq., Col. Laurie, T. B. Akins, D.C.L., Rev. John Ambrose, Rev. Dr. Nichols, Henry Pryor, D.C.L., Rev. Heber Bullock, the Professors of the College, and other members of Convocation. The body of the building by this time was packed with an audience embracing as much of the culture and refinement of the Province as we ever recollect having seen together in Windsor.

The Reverend President proceeded to deliver an encœnial oration, at once scholarly and practical, elaborate and pointed.

Various prizes were announced and presented. The Graduating Class consisted of Messrs. Thomas Fraser Draper, Charles Whidden Brown, Francis Gordon Forbes, who received the Degree of Bachelor of Arts, and Mr. R. Fitzgerald Uniacke, who received the Degree of Bachelor of Engineering. The Degree of D.C.L. was conferred on Rev. H. Bullock, and that of B.D. on Rev. Mr. Partridge.

The most conspicuous ceremonial feature of the occasion was the conferring of the Degree of D.C.L. on His Excellency, Sir Edward A. Englefield, Admiral in Command of the British America Squadron. The President announced briefly (in Latin) the reasons for conferring the Degree, after which His Excellency was introduced to the President by Rev. Dr. Hill, Chancellor of the University, Halifax, Drs. Akins and Pryor, the last named of whom addressed the President in a Latin speech, of which we give a somewhat literal version :

"I present to you, illustrious President, the renowned Admiral of the British Fleet, Edward Augustus Inglefield, Knight Commander of the Bath, Fellow both of the Royal Society and of the Royal Geographical Society. He has seen much service off the Coast of Syria, and in the bombardment of Acre. For five years he has been head of the Dockyard of Malta. He has thrice, by ship, braved those Arctic regions which have proved so fatal to British navigators, nor did he leave those terrible shores until he had, with unwearied toil, untiring perseverance, and wonderful courage, prosecuted the search for the illustrious Franklin, the hero and also the victim of Arctic exploration. If his search was futile, we may add, in the words of the poet—

'Yet might was the attempt in which he failed.'

On account of his distinguished efforts in this service he was, on his return home, admitted by the Queen, who knows how fitly to recompense valiant services, to the order of Knight Commander of the Bath. How great were the sufferings of the Admiral and his companions in those frightful regions, how important were the additions they made to science by their discoveries, is known to the world ; for Inglefield has shown a literary talent, trained and polished, in his very clear and correct account of his voyage. No man of taste who has read his narrative will refuse to acknowledge that a leader so distinguished by the power both of Mars and Apollo is worthy not only of civic honors, but also of the laurels which attend service in either."

His Excellency responded to the honor in a singularly appropriate speech of acknowledgment. Other addresses followed from His Honor the Administrator of the Government, Sir Wm. Young, His Lordship Bishop Buincy, and Rev. Chancellor Hill. The whole proceedings indicated a revival of interest in University education on the part of the friends of King's College.

The Senate of the University of Halifax held a session on Friday, the 27th of June. The business transacted was chiefly of a formal character. The learned Chancellor made the gratifying announcement that at the forthcoming First B.A. examinations, students would present themselves from all the affiliated Colleges of the University except Acadia. The growth of the University in the direction of Law and Medicine was also represented as gratifying. Hon. Mr. Stairs was unanimously re-elected Vice-Chancellor, and F. C. Sumichrast, Esq., Registrar. A committee consisting of the Chancellor, the Superintendent of Education, and the Hon. Senator Poner, was appointed to make arrangements for the formal presentation of candidates for Degrees at the Annual Convocation of the University in September.

The Annual Examination for Teachers' Licenses was held on the 22nd to 26th ult. Under the new and wholesome regulations of the Council of Public Instruction, the number of candidates is understood to have been much beneath that of recent years

A Teachers' Association for the County of Kings, organized under the recent regulations of Council, is called for this month. The call is said to have been signed by every teacher in the county in actual work. Several other associations will be constituted during the summer and autumn.

PRINCE EDWARD ISLAND.

The Government recently appointed Mr. John Murray and Mr. Peter Curran, Inspectors of Schools.

The closing exercises in the schools and colleges throughout the Province passed off with more than usual *eclat* at the close of the past session.

At the examination held by the Commissioners of the Inland Revenue Department of the Dominion of Canada in Charlottetown, Messrs. John Andrew McDonald, District Inspector, and S. A. Nash, Collector, passed very creditable examinations. The subjects in which the candidates were examined embraced Mensuration, Computation of Commodities in bulk, Book-keeping by Double Entry, Inland Revenue Laws, Malting and Malt Guaging, use of Hydrometer, Slide Rule, Petroleum inspection, Distillation, &c.

The following candidates obtained certificates at the Midsummer Examination, 1879 : First Class—Isabel McNeill, Minnie Larkin, Ernest Crawford. Second Class—James M. Campbell, Ellie Roberts, Belle Longworth, Grace Reed, Emma Haslam, Wallace Crawford, Harvie D. McEwen, A. P. McLellan, Frank S. Coffin, Wm. Montgomery, Emily Boswell, Elizabeth Bowen, Theodore W. Clarke, Christopher Munro, Norman A. McNeil, Alexander Campbell, Barclay Johnston, Owen McManus, George McLeod, Philip J. Wright, Angus A. McDonald, Patrick Cosgrove. Third Class—Caleb Schurman, Jesse T. Canfield, Hugh McDonald, Donald K. McKenzie, Kate A. McLeod, Donald Martin, Martin Martin, Alex. McLeod, Andrew Mooney, Mary Ada McNeill, Sylvanus J. Martin, Hannibal Moore, Patrick F. Doyle, John E. Buchanan, Frederick F. Haley, Charles Toper, James Morrison, Annie Murphy, Eliza J. McFarlane, Jane Warls, Clara, Kilbride, Maggie Kilbride, Annie Commiskey, Cecily Gleason, Bernard D. McLellan, Maggie Cosgrove, Janet Bears, Lizzie Flanagan, Marion McQuarrie, Isabella McAdam, Annie J. McDonald John Sheriff, Anna B. Mutch, John Bryenton, Donald Bears.

The schools of the city of Charlottetown are in a very efficient state. They exhibit, as the result of the work of the present year, a marked improvement. The number of pupils on the roll for the half year ending June 30th was 1,545, and the daily average attendance 1020·41. A great deal of emulation has been excited among the pupils by gold and silver medals offered for proficiency in the different subjects by Messrs. Longworth, Hodgson, DeBlois, Haviland, Brecken, and by Mrs. E. J. Hodgson. The competition for these medals and for other prizes was exceedingly active among both boys and girls. It is a curious fact, that in the competition the girls were the most successful. Miss Bella McLennan carried off the medal for proficiency in the English branches against all comers ; and, in the endeavor to obtain other prizes open to both sexes, the girls proved themselves rather more than matches for the boys.

MANITOBA.

There was a special meeting of the Protestant section of the Board of Education on Wednesday, July 2nd, for the purpose of taking action under the new clause in the school law which gives to each section of the Board of Education the power to divide the Province into inspectoral districts, and to appoint inspectors. The meeting adopted the following as the duties of inspectors :—

It shall be the duty of each of the inspectors appointed by the Protestant section of the Board of Education and he is hereby empowered :

1. To visit at least semi-annually each school within his inspectoral district ; to examine the schools, school-houses and premises ; to inspect the school register, and generally to ascertain if the provisions of the school law and regulations in force under it are carried out and obeyed ; and to transmit to the superintendent a report of such inspections at the close of each school year, at least, and oftener if required by the Board.

2. To report to the superintendent any serious breach of the law or regulations.

3. To advise with the teachers of his district in all that may tend to promote their efficiency, and the character and usefulness of their schools.

4. To render any assistance that may be required at teachers' examinations ; to aid the superintendent in carrying out a uniform system of education, and to do all that is in his power to give effect to the school law and the regulations of this Board.

5. To report to the Board when required in regard to the erection or readjustment of a school district, and visiting such district if necessary.

The following were then agreed upon as the Inspectoral Districts for the year ending January 31st, 1880, viz. :—

1st. The Counties of Selkirk and Liggar, and the sub-division of Marquette.

2nd. The sub-divisions of Portage and Westbourne.

3rd. The sub-divisions of Dufferin and Mountain.

4th. The County of Provencher.

The following are the Inspectors for the year ending 31st January, 1880:—

District No. 1.—The Superintendent of Education for Protestant schools.

District No. 2.—Rev. W. Halstead, Portage La Prairie.

District No. 3.—Rev. W. R. Ross, Campbellville.

District No. 4.—W. Hespeler, Esq., Winnipeg.

There was a very successful meeting of the Selkirk County Teachers' Association on Saturday, 5th July, at which Mrs. Chisholm, Miss Affleck, R. Browne, M.A., and others read papers. The meeting instructed the Management Committee to arrange for a conversazione to be held during examination week.

The public schools of the Province have just concluded the first term of the school year, and examinations have taken place in connection with a large number of them. The Winnipeg daily papers have given a good deal of space to the report of the examination of the city schools. They are being conducted in a very efficient manner, and there has been during the past term a marked increase in the attendance. The distribution of prizes took place on Friday, 11th July, and the attendance of prominent citizens and their interest in the proceedings were very gratifying to the teachers and friends of education.

The following special prizes were presented:—

Free Press Prize, $30 cash, for highest general proficiency; won by Miss Estelle Roblin, of the Fifth Class.

Gold Medal, presented by the *Times*, for highest average in promotion examinations; won by Master Jacob Doupe, of the Fourth Class.

Prize (Chambers' Encyclopædia of English Literature) for the best essay on "What we owe to books," presented by Messrs. Parsons & Richardson; awarded to Miss Edith Belch, of the Fifth Class.

Prize for regular attendance (toilet set), to girls of the Fourth Class only; presented by Mr. James Stewart awarded to Miss Eliza Ellis, of the Fourth Class.

Nine prizes (handsome books) for good conduct, presented by the Inspector of city schools, Rev. J. F. German, M.A.; presented to: 1st, Ashael Adams, 2nd, Bella Merritt, both of the 5th class, Central School; 3rd, Maria Killoch, 4th class, Central School; 4th, Jessie McIntyre, 3rd class (girls) Central School; 5th, Arthur Chapman, 3rd class (boys), Central School; 6th, Maggie McLaren, 2nd class (girls), Central School; 7th, Harry Parr, 2nd class (boys), Central School; 8th, Wm. Archibald, North Ward School; 9th, Annie Spence, South Ward School.

The promotions were made upon the same papers as those from which the prizes were awarded, the pupils requiring 60 per cent. of marks to pass.

BRITISH COLUMBIA.

The school districts now number 45, and contain 51 Public Schools and one High School The pupils enrolled during the year were 2,198, and the average daily attendance 1,395.5. The cost for each pupil on total attendance has been $22.02, and that for each on average attendance $34.60. The total amount expended in education during the year has been $48,411.14. The total cost of education is borne by the general exchequer. The lately appointed Chief Superintendent of Education, C. C. McKenzie, Esq., suggests, in his official report, the devising of a plan by which at least some portion of the cost might be borne by the several electoral and school districts directly benefitted. He says, "Under the present mode of support, besides the want of self-reliance thereby encouraged, a carelessness in taking advantage of the opportunities conferred is easily observable on scanning the percentages of non attendance and irregularity. The school costing the parent little or nothing, is undervalued and consequently neglected."

The inspection of the schools is not so thorough as it should be to insure efficiency, but the character of the country must bear the blame for this, except in the cases of sections in the centres of civilization. The examination of candidates for admission to the High School is now the only really comparative test of greater or less efficiency as between school and school, and also the only test by which it can in any way be predicted of a school whether it is efficient or not.

Two examinations of candidates for certificates to teach were held simultaneously at New Westminster and Victoria, and of the 25 who presented themselves all obtained certificates, namely: Two a First Class Grade A; three a First Class Grade B; one a Second Class Grade A; seven a Second Class Grade B; eleven a Third Class Grade A, and one a Third Class Grade B. One of these, educated in the Public and High School of this city, obtained the third place on the list in order of merit, proving himself not unworthy to compete with teachers of large experience in this and other Provinces, and thus showing that, so far at least as education is concerned, this Province is able to educate its own teachers, provided advantage is taken of the means ready to that end. There are now 58 teachers employed in the Department, of whom six have been entirely educated in the Public Schools of the Province. Their salaries average $61.12 per month, and run as follows:—one at $125, three at $100, two at ninety, one at $80, one 75, six at $70, 1 at $65, twenty at $60, three at $55, seventeen at $50, one at $45, two at $20. The total value of school property in the Province, including sites, buildings, furniture, &c., is $78,000. The High School of Victoria is managed by two teachers, and has an average attendance of over 50. The average attendance at the Public Schools of the city of Victoria is over 600.

Readings and Recitations.

"TOO RICH TO AFFORD IT."

"I don't want to go to school any more, father."

Mr Palmer raised his eyes in surprise to the face of his first-born, a lad of about fifteen.

And a bright intelligent face it was, though it was a little clouded now by a feeling of dubiousness as to how his words would be taken.

"Why don't you want to go to school any more?"

"Well, sir, I'm tired of studying, and—I don't see any use in it."

"Think you know enough, that you don't need to learn any more?"

The boy coloured a little at that quizzical look and tone.

"I know as much as George Lyman does, and he left school three months ago. He says that he ain't going away to school when his father has got plenty of money."

Mr. Palmer turned upon his son's face a look of grave surprise.

"Did George Lyman say that, Walter? His father is a poorer man than I thought him."

"You are richer than Mr. Lyman is, ain't you father?" asked the boy eagerly.

"I hoped I was, but that remains to be seen."

"Mr. Lyman is rich, too, father; every one says that he is."

"That remains to be seen also. So you have quite made up your mind that you do not want to go to school any more, my son?"

"Yes, sir."

"You needn't then."

"Oh, thank you, father!" cried Walter, his face brightening.

"Wait a minute," said Mr. Palmer, as the boy caught up his hat preparatory to making a dive through the open door. "Come back, I have something more to say to you. You have nothing to thank me for—except, perhaps, my good intentions. Considering it as the best gift I could bestow, it was my intention to give you a thorough education. But there is a homely and true saying: 'One man can lead a horse to water, but ten cannot make him drink.' So, though I have by no means changed my opinion as to the value of an education, I consent to your leaving school, because, if you feel as you say you do, it will be only time and money thrown away. But I want you to understand clearly one thing: that if you do not go to school you will have to go to work. I can't afford to have you idle."

Walter's countenance underwent a very perceptible change.

"Do you mean that I must go out at day's work like Dan Baker and Sam Blake?"

"I mean that you must have some steady employment, some trade or business which will give you just so many hours' work as surely as the sun rises."

"Why, father, George Lyman and Will Broomley don't have to work; and they say they don't mean to, either. George told me that he heard his father say that you were the richest man in the county."

"I might be the richest man in two counties, and yet not be rich enough to afford to have my boy idle."

Mr. Palmer smiled as he saw Walter's puzzled look.

"This is a hard thing for you to understand, my son, and I might talk to you from this time until sunset and not make it any more clear to you. To-morrow is Saturday, and you know I always take you somewhere that day. This time it shall be to Plainfield, where an old schoolmate of mine is living. A visit to him and the place where he lives will serve better to explain my meaning than anything I can say."

The next morning Walter and his father started out bright and early, in the open phaeton, drawn by a pair of well-matched mettlesome bays, which bore them swiftly along the smooth, hard road.

Plainfield was fifteen miles distant, and the way thither through such a beautiful country was so entirely new to Walter that he forgot all

about what his father had said the day before, until the carriage stopped in front of a gloomy stone building.

"Are you going to stop here, father? Why, it looks like a prison!"

"It is a prison," said Mr. Palmer, who had been unusually grave and silent during their ride, as Walter remembered afterwards.

"But I thought you were going to see an old schoolmate of yours?"

"Here is where he lives."

Walter followed his father silently up the steps which led to the heavy massive door of the main entrance.

"Did you ever think that any of your schoolmates might find a home in some such place as this? or even that you might?" said Mr. Palmer, as he pulled the bell, whose clangor broke harshly upon the strange silence that reigned around.

Before Walter could reply the heavy door swung back, and they were ushered into the warden's office.

He was a heavily-bearded man with a stern, almost forbidding countenance; but he shook hands with Mr. Palmer, whom he had met before, bestowing on Walter a pleasant word and smile, the latter giving his face quite another aspect.

"I came to enquire about John Jackson, the forger," said Mr. Palmer, after a few preliminary words. "He is an old schoolmate of mine. I remember him as a high-spirited boy, rather headstrong, and fonder of play than study, but with many genial and pleasant traits of character. How is he getting along?"

"Very well. Had he been competent I should have given him a place as book-keeper, made vacant by a convict whose time was up. As it was, I had to put him in the shoe-shop. He is quiet, but he takes it pretty hard, as such chaps are apt to who have always had plenty of money and nothing to do. It is not in strict accordance with the rules, but if you would like to see him I'll have him sent out."

Mr. Palmer assented, and in a few minutes a grave, quiet man entered, whose closely-cut hair and peculiar dress gave him a very strange look to Walter, who had never seen anythinglike it before.

He seemed glad to see Mr. Palmer, though there was a visible constraint in his manner which showed that he felt keenly his changed position and surroundings.

Of the two, Mr. Palmer seemed the most affected. His voice broke a little, as he said:

"I am glad to see you, Mr. Jackson; but sorry, very sorry to find you here."

"You can't be more sorry than I am to find myself here," said the man, with a forced smile.

Then, as if anxious to change the subject, he turned to Walter.

"I needn't ask whose boy this is?"

"It is my eldest son, Walter. He is just about the age we were when we used to go to school together, in dear old Bridgeville. Have you forgotten all about those days, John?"

Whether it was these words, or the sight of that fresh, innocent face, for a few moments Jackson struggled silently with the tender and subduing recollections that rushed over him; then breaking down suddenly, he covered his face with his hands.

Walter had never seen a man weep before, and those sobs and moans were something he never forgot.

"I wish I could!" said the wretched man, lifting up his pale, tear-stained face. "I wish I could forget what I once was, all that I might have been, and what I am! I sometimes think that it is a horrible dream; that I shall some day wake and find it so!"

"How did it happen?" inquired Mr. Palmer, as soon as his companion was calmer. "When I last saw you, your prospects were bright—apparently brighter than mine."

"It can be summed up in two words," was the gloomy response: "Idleness and bad company. If my father had trained me to habits of industry and self-reliance, I had not come to this. But he loved me, and I am glad that the grave has hid from him all knowledge of the shame and misery of the son whom his ill-judged, short-sighted kindness ruined. As you know, I would not study I thought there was no need for me a rich man's son—to do that. I can remember how I despised the dull, plodding fellows who are honored men to-day. My father's death put me into possession of wealth, of which I never earned a dollar, and of whose use and worth I knew nothing. How it went I hardly know; but I awoke one morning to find myself poorer than the lowest clerk in the establishment that my father had built up with so much care and labor, but which had now passed into the hands of strangers My fair weather friends, who had helped to spend my money, urging me to every conceivable folly and extravagance, left as soon as they found that there was no more to spend. I knew nothing about getting money by honest work, but money I must have; so I turned my attention to the various ways of getting money without work. The rest needs no telling."

Here the warden entered; and with his heart somewhat cheered and strengthened by Mr. Palmer's words of encouragement and sympathy, Jackson returned to his dreary task.

The warden now took them around through the various workshops, cells, etc., kindly explaining to Walter all that he did not understand.

When they visited the shoe-shop, Walter saw Jackson sitting there among the rows of busy, silent men, not one of whom dared to lift his eyes as they passed by.

"How many of these men," inquired Mr. Palmer, as they returned to the office, "have ever been trained to any useful trade or business?"

"Not one in ten."

The spirited bays in their glittering harness were champing their bits and tossing their heads impatiently outside the high walls; and Walter experienced a feeling of relief as he found himself once more in the pure, sweet air and bright sunshine.

"How dreadful it must be to have to live in such a place as that!" he said, as reaching an eminence, he gave a backward glance at the building, which looked so grim and solitary in the distance.

"It is the necessity that is dreadful, my son. Miserable as these men are, they are happier there, where they are obliged to be orderly and industrious, though only through the fear of punishment, than if they were allowed to follow, unrestrainedly, the devices of their foolish and evil hearts."

There was silence for some minutes. Then Mr. Palmer said:

"You asked me a question, yesterday, Walter, and this is my answer, a better answer than any words can frame. The world calls me a rich man, and so I am. I am able to afford you many advantages, all the opportunity you can ask for moral and mental culture; but I am not, and never shall be, rich enough to afford to have you idle. Strange as it may seem, I am too rich to afford it. I have a mill, filled with industrious operatives, whose living from week to week depends on its skilful and prudent management. I have houses full of tenants, whose health and comfort depend largely upon whether their landlord is a just and faithful man. These and other interests may some day be entrusted to you. Many a father has learned to his sorrow, that to have a boy idle is something that rich men cannot afford."

"I think I will go to school Monday, father," was Walter's only response to this.

HOW HE SAVED ST. MICHAEL'S.

'Twas long ago—ere ever the signal gun
That blazed before Fort Sumter had wakened the North as one;
Long ere the wondrous pillar of battle-cloud and fire
Had marked where the unchained millions marched on to their heart's desire.
On roofs and glittering turrets, that night, as the sun went down,
The mellow glow of the twilight shone like a jeweled crown,
And, bathed in the living glory, as the people lifted their eyes,
They saw the pride of the city, the spire of St. Michael's, rise
High over the lesser steeples, tipped with a golden ball,
That hung like a radiant planet caught in its earthward fall;
First glimpse of home to the sailor who made the harbor round,
And last slow-fading vision dear to the outward bound.
The gently-gathering shadows shut out the waning light;
The children prayed at their bedsides as they were wont each night;
The noise of buyer and seller from the busy mart was gone,
And in dreams of a peaceful morrow the city slumbered on.

But another light than sunrise aroused the sleeping street.
For a cry was heard at midnight, and the rush of trampling feet;
Men stared in each other's faces, thro' mingled fire and smoke.
While the frantic bells went clashing clamorous, stroke on stroke.
By the glare of her blazing roof-tree the houseless mother fled,
With the babe she pressed to her bosom shrieking in nameless dread;
While the fire-king's wild battalions scaled wall and capstone high,
And planted their glaring banners against an inky sky.
From the death that raged behind them, and the crash of ruin loud,
To the great square of the city, were driven the surging crowd,
Where yet firm in all the tumult, unscathed by the fiery flood,
With its heavenward pointing finger the church of St. Michael's stood.
But e'en as they gazed upon it there rose a sudden wail,
A cry of horror blended with the roaring of the gale,
On whose scorching wings updriven, a single flaming brand,
Aloft on the towering steeple clung like a bloody hand.
"Will it fade?" the whisper trembled from a thousand whitening lips;
Far out on the lurid harbour they watched it from the ships.
A baleful gleam, that brighter and ever brighter shone,
Like a flickering, trembling will-o'-the-wisp to a steady beacon grown.
"Uncounted gold shall be given to the man whose brave right hand,
For the love of the periled city, plucks down yon burning brand!"
So cried the Mayor of Charleston, that all the people heard,
But they looked each one at his fellow, and no man spoke a word.
Who is it leans from the belfry, with face upturned to the sky—
Clings to a column and measures the dizzy spire with his eye?
Will he dare it, the hero undaunted, that terrible, sickening height,
Or will the hot blood of his courage freeze in his veins at the sight?
But see! he has stepped on the railing, he climbs with his feet and his hands,
And firm on a narrow projection, with the belfry beneath him, he stands!

Now once, and once only, they cheer him—a single tempestuous breath,
And there falls on the multitude gazing a hush like the stillness of death.
Slow, steadily mounting, unheeding aught save the goal of the fire,
Still higher and higher, an atom, he moves on the face of the spire;
He stops! Will he fall? Lo! for answer, a gleam like a meteor's track,
And, hurled on the stones of the pavement, the red brand lies shattered and black!
Once more the shouts of the people have rent the quivering air;
At the church door mayor and council wait with their feet on the stair,
And the eager throng behind them press for a touch of his hand—
The unknown saviour whose daring could compass a deed so grand.

But why does a sudden tremor seize on them as they gaze?
And what meaneth that silent murmur of wonder and amaze?
He stood in the gate of the temple he had periled his life to save,
And the face of the unknown hero was the sable face of a slave!
With folded arms he was speaking in tones that were clear, not loud,
And his eyes, ablaze in their sockets, burnt into the eyes of the crowd.
"Ye may keep your gold, I scorn it! but answer me, ye who can,
If the deed I have done before you be not the deed of a *man*?"

He stepped but a short space backward, and from all the women and men
There were only sobs for answer, and the mayor called for a pen,
And the great seal of the city, that he might read who ran,
And the slave who saved St. Michael's went out from its door a man.

—*Mary A. P. Stansbury.*

SPRING WORK: MOTION SONG.

AIR—"LIGHTLY ROW."

[1]Plow the land, [2]plow the land;
Hold the handles with each hand;
Furrows keep straight and deep,[3]
[4]Firm and steady stand.
[5]Quickly turn around we may,
[6]Plowing back the other way;
Plow the land, plow the land,—
[4]Farmers understand.

[6]Sow the seed, sow the seed,
[7]Little birds will come and feed;
[8]Never mind, you will find
Much they leave behind.
[9]Soon the tender blades will spring,
Just as green as anything,
[6]Sow the seed, sow the seed,
[5]Pleasant work, indeed.

[10]Now we rest, now we rest,
[11]After labor that is best;
First you know, green will show,
[6]Where the grain we sow.
[8]Soon you'll see a welcome sight,
Field so pretty, green and bright,
[11]Spring-time through, glad are you
[12]Farmer's work to do?

(1) Stand; reach out both hands. (2) Let them fall on the plow-handles, bending forward. (3) Throw them out straight before. (4) Stand very straight. (5) Turn around. (6) Move the right hand as in sowing seed. (7) Drop the ends of the fingers briskly on the desk. (8) Wave both hands out. (9) Raise both hands slowly. (10) Be seated. (11) Fold hands. (12) Seat-mates turn face to face.

—*Good Times.*

Teachers' Associations.

The publishers of the JOURNAL will be obliged to Inspectors and Secretaries of Teachers' Associations if they will send for publication programmes of meetings to be held, and *brief* accounts of meetings held.

RUSSELL.—A successful meeting of the Russell Teachers' Association was held at Bear Brook on Friday and Saturday, the 9th and 10th of June. Rev. Thomas Garrett, B.A., President, opened the meeting by presenting in a very able address the benefits which would accrue to education by teachers making use of all honorable means to rise in the profession. He then called J. C. Glashan, Esq., Inspector of Ottawa P. S., to the chair, and with a few appropriate remarks requested him to conduct the Association. The following subjects were discussed by the teachers: "How to make lazy boys learn," "Good Order," "How to teach case," "Factoring in Algebra;" "The A B C of Arithmetic," "The A B C of Grammar," and Question Drawer, by Mr. Glashan, whose lectures were of a very high order, fully elucidating how to cause pupils to know the "why" as well as the "how." "Factoring in Algebra" was very fully discussed by Mr. Glashan and Rev. T. D. Phillips, Math. Mas. Ottawa Collegiate Institute. On Friday evening Mr. Glashan gave an excellent reading and Rev. T. D. Phillips delivered a very able lecture on "London and London Life" to a large and appreciative audience. The election of officers for ensuing year resulted as follows: President, Rev. Thos. Garrett, B.A, I P.S, Vice President, J. H. Hill; Sec.-Treasurer, Niles G. Ross; Committee of Management, Messrs. A. R. Cochrane, Wm. Macutcheon, J. H. Hill, F. R. Pratt and John Pushman. The Association will meet again in September at Plantagenet Mills.

Official Department.

NORMAL SCHOOL PROFESSIONAL EXAMINATION.

LIST OF THOSE STUDENTS WHO PASSED.

The following is a list of those students who passed the recent professional examinations in the Toronto and Ottawa Normal Schools:—

Toronto Normal School.—Abbs, Adair, Anderson, Andrews, Armstrong, Ballard, Banks, Bartlet, Beall, Beatty, Best, Birnie, Blatchford, Jennie F. Brown, Buie, Caldbeck, Cannell, Campbell, Christian, Chute, Cleghorn, Clement, Clemmer, Connolly, Cooley, Copeland, Crasweller, Crewson, Cusack, DeCaw, Dibb, Drummond, Eckardt, Ego, Farquharson, Fessant, A. H. Finch, Foster, Girardot, Graham, Julia A. Hall, Harding, Hicks, Hipple, Hooper, Hutchieson, Isaac, Ivy, Johnston, Kilpatrick, Emma F. King, Lizzie King, Knox, Eva Lee, Richard Lees, Logan, Lynch, Markle, Marshall, Martin, Megaw, Messecar, Middleton, V. Minshall, Mitchell, Morrison, Morton, Mounsey, Mullock, McBrien, McDiarmid, McFarlane, Annie McKenzie, Gracie McKenzie, McKinlay, McPhail, Oliver, O'Neill, Ovens, Palmer, Porter, Reid, Richards, Anna Robertson, Katie Robinson, Bella Ross, Helen Ross, Sharp, W. H. Shaw, Sherk, Slater, Slee, Smith, Emily Spencer, Mary Spencer, Sproule, Stock, Stroubel, Stubbs, Sutherland, Thornhill, Treadgold, VanDerlip, Watt, Weeks, Weir, Whitebread, Wilson, Yeandle, Young.

Ottawa Normal School.—Aldous, Appelbe, Aiken, Belliss, Bisset, Boggs, D. Bowerman, J. P. Bowerman, Britton, B. H. Browne, C. E. Browne, Mary Browne, Brunton, Budd, Emma Bullard, Evelyn Bullard, Burgess, Clark, Coveny, Davidson, Day, Dunbar, Duncan, Dunlop, Fairlie, Fisher, Forster, Fulton, Garratt, Gerolamy, Griffin, Hambly, J. R. Harper, P. H. Harper, Hart, Hastings, Henderson, Hodgins, Hoover, Hornibrook, Jones, Karley, Kaylor, Leyes, M Mackay, Martin, Miller, Moffat, Moir, Moore, Morrison, Mott, McArthur, William McCoy, McCutcheon, A. McKay, McMurchie, McNabb, McRory, Nicol, Northcott, Peer, Pickering, Poole, Rodgers, Ross, Sample, Sandison, Sawyer, Sayers, Shaver, Shaw, Siegman, Hugh Simpson, Sadie Simpson, E. M. Sipprell, Standing, Steacy, Stewart, Straith, Teetzel, Thomas, J. E. Thompson, Libbie Thompson, Thornton, Townsend, Turnbull, Turney, Van Amburgh, Lucy A. Webster, J. A. Webster, Weir, B. F. White, Widner, Wilson, Wray, Yeaman, Young.

REVIEWS.

GREENE'S ENGLISH LANGUAGE. *Boston: Houghton, Osgoode & Co.* This book is not intended to be a grammar. It discusses the grammatical and logical principles of the English language, but does this in a somewhat original manner. The exercises and illustrations are ample and appropriate. The language student will find the work to have genuine merit.

THE CULTIVATION OF THE SENSES. *Philadelphia: Eldredge & Bro.* 50 cents. These enterprising publishers propose to issue a series of manuals for teachers, five in number. They were originally published in England at the request of the Literature Committee of the National Education Society. If the other numbers are as excellent as the first volume, every teacher should be in possession of them. They would make an admirable series for a Normal School course.

MAGAZINES.

ST. NICHOLAS for August. Prominent among the many interesting and beautifully illustrated articles of this number is the account of the doings of

"Nan, the Newsboy," and his two companions in New York. There is a fine picture of these three young heroes who form the Volunteer Life-Saving Association of New York. The doings of "Hercules Jack" will be of interest to the boys. "The Baby's Morning," "Happy-Go-Lucky," and "Jack-in-the-Pulpit," will delight the very young folks; while "Lawn Tennis," "The Child-Life of Goethe," and "The Aquarium at Brighton," will please those of all ages.

The delightful magazines, *The Sunday at Home* and *Peep-Show*, published by Strachan & Co., London, arrived just a we were going to press.

SCRIBNER'S MONTHLY, August. The brightest number of the year is the holiday number. It contains 160 pages of brief poems, sweet stories, and articles on travel, biography, science, etc. The illustrated articles are: "Whistler in Painting and Etching," "Summer Entomology," 'A Peep into Antwerp and Holland," "Haworths," "The Cook of the Confederate Army," "John Greenleaf Whittier," and "Over the Narrowest Gauge." 35 cents a number.

THE ATLANTIC MONTHLY, August. The choice articles are: "The Future of Invention" (worth the price of the number); "Rural England," by R Grant White; "Recent French and German Essays," "The Latest Literature of Art and Preaching." There is the usual quantity of standard fiction.

APPLETON'S JOURNAL for August has several excellent papers. A very fresh and interesting article, entitled "Moose-Hunting in Canada" by the Earl of Dunraven, is likely to be widely read in this country, and to greatly stimulate the zest for this sport. A wholly different kind of paper is Matthew Arnold's "Wordsworth," which is full of suggestion and admirable criticism. From Mr. Grundy's "Pictures of the Past" are selected "Reminiscences of Patrick Branwell Bronte," and "Leigh Hunt and his Family;" there is a paper on "The Comedie-Francaise," just now so generally discussed; also an article on "The Mirabeaus;" then follow some capital "Wandering Thoughts about Germany;" "A Cornish Saunter," full of entertaining descriptions of a strange country; a New England story, by S. G. W. Benjamin, entitled "Out of the Depths;" suggestive extracts from the writings of the German philosopher Schopenhauer, under the title of "Schopenhauer on Men, Books, and Music;" and translations, by Swinburne and others, of a number of poems by Gautier.

Gleanings.

THE SCHOOL HOUSE.

Parents who have comfortable houses will frequently allow their children to attend school where everything is wanting to advance the interests of education, to say nothing of civilization. Let us mention a few:

For fifty children, there should be a house with school-room, and comfortable sittings for the children, and it will be profitable also to provide a gallery or class-room, in which a monitor may aid the pupil.

For one hundred children, there should be a house with two class-rooms with comfortable sittings (one for an elementary and one for an advanced division), and trustees are recommended to provide a gallery, also to employ a monitor.

For one hundred and fifty children, a house having one gallery and two good class-rooms with comfortable sittings, or a house having a gallery and two apartments, one for an elementary and one for an advanced department, with a teacher and two assistants. If one commodious building cannot be secured, two houses may be provided in different parts of the district, with a teacher and assistant in each.

Trustees and school boards should pay attention to the following particulars in the erection of school houses, viz.:

1. The school-house should be but *one story high*, in rural sections.

2. A separate room should be provided for every fifty pupils enrolled in the school. By means of sliding doors, these separate rooms could be thrown into one on special occasions.

3. Provision should be made for one or more gallery or class-rooms in every school, according to its size, as heretofore prescribed.

4 Separate entrances, with outer porches to the school-house, or room, for boys and girls, should invariably be provided, where the number of pupils is over fifty.

5. The entrance porches should be external to the school-house.

6. The external doors of the school-house should open outwards.

7. The school-rooms must be well ventilated.

8. The light should be admitted to the school and class-room behind or at the left of the children, and either from the east or north, but in no case should the children face it.

9. The window sashes should be made to move up and down on pulleys, and the sills should be about four feet above the floor.

10. Each school-house should be provided with a bell.

11. If the house be brick, care should be taken to make the walls hollow, but air-tight, otherwise the walls will be damp inside.

All furniture and apparatus, such as desks, seats, blackboards, maps, library, books, and other furniture necessary for the efficient conduct of the school should be furnished.

1. The closet should be masked from view, and its approaches equally so.

2. There should be little or no exposure to mud or wet weather in reaching it.

3. There should be no unpleasant sight or odor perceptible.

4. The apartment should be well finished.

5. It should be kept entirely free from cuttings, pencilings, or markings, and scrupulously clean.

6. There should be, at least, two closets attached to each mixed school, and they should be so separated that neither in approaching nor occupying them, can there be either sight or sound observed, in passing, or from one to the other. This cannot be effected by a mere partition; nothing can secure the object but considerable distance, or extra heavy brick or stone walls resting on the ground. It is a serious error ever to omit this precaution.—*N. Y. School Journal.*

WHAT IS EDUCATION?

"I call that education which embraces the culture of the whole man, with all his faculties—subjecting his senses, his understanding, and his passions to reason, to conscience, and to the evangelical laws of the Christian revelation."—*DeFellenbergh.*

Education is a proper disposal of all the circumstances which influence character, and of the means of producing those habitual dispositions which insure well-doing.—*Mackintosh.*

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

"To educate the intellect is to unfold, direct, and strengthen it, that it shall be prepared to be, through all its future course, a zealous and successful *seeker after truth.*"—*Alonzo Potter, D.D.*

"In a more restricted sense we mean by education the shaping of the individual life by the forces of nature, the rhythmical movement of national customs, and the might of destiny in which one finds limits set to his arbitrary will."—*Rosenkranz.*

Evolution of Education.—The catechism once formed the entire outfit of the school. Education meant, then, *to believe.* The reaction followed, and education meant next to *know.* This, too, was found hollow, and education was next taken for teaching us how and what *to be*, which again ended in a moral formalism, and in a refined sentimental self-seeking. We expound education as the art of preserving the race by training us what *to do. To believe, to know, to be, to do*, and finally the synthesis of all the four, form the complete evolution of education springing up in the order of human faculties, perception, reason, emotion and the will.—*Boyce.*

"The educational abomination of desolation of the present day is the stimulation of young people to work at high pressure by incessant and competitive examinations. Some wise man (who probably was not an early riser) has said of early risers in general that they are conceited all the forenoon and stupid all the afternoon. Now, whether this is true of early risers, in the common acceptation of the word, or not, I will not pretend to say; but it is too often true of the unhappy children who are forced to rise too early in their classes. They are conceited all the forenoon of life, and stupid all its afternoon. The vigor and freshness, which should have been stored up for the purposes of a hard struggle for existence in practical life, have been washed out of them by precocious mental debauchery—by book gluttony and lesson-bibbing. Their faculties are worn out by the strain put upon their callow brains, and they are demoralized by worthless, childish triumphs before the real work of life begins. I have no compassion for sloth, but youth has more need for intellectual rest than age; and the cheerfulness, the tenacity of purpose, the power of work which make many a successful man what he is, must often be placed to the credit, not of his hours of industry, but to that of his hours of idleness, in boyhood. Even the hardest worker of all, if he has to deal with anything above mere details, will do well, now and again, to let his brain lie fallow for a space. The next crop of thought will certainly be all the fuller in the ear and the weeds fewer."—*Prof. Huxley.*