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THE
CANADA SCHOOL JOURNAL

—DEVOTED TO—

The Interests of Education and the Teaching
Profession

IN THE

DOMINION OF CANADA.

*Recommended by the Minister of Education for Ontario.
Recommended by the Council of Public Instruction in Quebec.
Recommended by the Chief Supt. of Education for New Brunswick.
Recommended by the Chief Supt. of Education, British Columbia.
Recommended by the Chief Supt. of Education, Nova Scotia,
Recommended by the Board of Education, Manitoba.*

VOLUME IV.

TORONTO:
W. J. GAGE & CO.
1879.

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The Canada School Journal.

Vol. IV.

TORONTO, JANUARY, 1879.

No. 20.

REV. GEO. W. HILL, A.M., D.C.L.,
CHANCELLOR OF THE UNIVERSITY OF HALIFAX, N.S.

We present in this number the portrait of one of the most widely known and justly esteemed Nova Scotians of the present generation. Born in the year 1824, in the city with whose educational, philanthropic, and moral interests he is so honorably identified, the learned Chancellor is in the full maturity of both physical and mental powers. The baldest epitome of his contributions to general literature and to that of his profession, taken in connection with a record of his public services and parochial labors, would sufficiently prove the singular activity and industry of his life. Toil, however, has left but little impress of itself on his erect form, and fresh, health-indicating countenance. Nothing short of eminent natural endowments, and well-disciplined faculties sustained in their action by a high moral purpose, could enable one to work so vigorously, so constantly, and withal so *easily*, as does the Chancellor of the University of Halifax.

After receiving the elements of a good English and classical education at the Grammar School of his native city, he was matriculated at Acadia College, Wolfville, and passed through the studies of the first and second years' courses in that institution, then just commencing its career of usefulness. Then a couple of years on a pleasant farm contributed an element of variety to his early career, and no doubt aided constitutional tendencies in laying the foundation of a life of vigorous health. Determined to the ministry of the Church of England as his profession, he entered King's College, Windsor, on an advanced

standing, and, after a most successful collegiate career, graduated B.A. in 1847. From the year of his graduation until 1854, he filled the position of Curate in the influential parish of St. George's, Halifax. In the latter year, having returned from a successful mission to Great Britain in behalf of his *Alma Mater*, he received the honorable appointment of Professor of Pastoral Theology in that institution. For five years he filled the position with great satisfaction to the friends of the College. In 1859 he returned to Halifax as the Curate of the historic old church of St. Paul's, and, on the death of the venerable incumbent, in 1865, he was chosen Rector by the unanimous suffrages of the congregation. This position, which he still retains, is one of the most important centres of ecclesiastical influence in the Maritime Provinces. In



an educational journal it might not be proper to enter into those particulars which would show in how admirable a manner its varied responsibilities have been met. We may observe that the church edifice of St. Paul's has associations and a history surpassing in interest probably those of any other Protestant sanctuary in the Dominion. Built within a year of the founding of Halifax (1750), it has witnessed the changes and the progress of one hundred and twenty-eight years, and its frame of oak is still untouched by the tooth of time. Let us add that Dean Stanley is not more *au fait* and enthusiastic in all that pertains to his celebrated abbey, than is the Doctor in regard to the interesting antiquities of St. Paul's. On the establishment, in 1876, of the University of Halifax, a Degree-conferring, non-teaching institution, modelled after

the University of London, and designed to simplify and unify the collegiate system of Nova Scotia, considerable speculation arose as to the gentleman likely to be named for the important and dignified office of Chancellor. Doctor Hill's appointment thereto was accepted by all as a most felicitous solution of the problem, and under his able direction the Senate of the University has made gratifying progress in bringing into harmonious co-operation the higher educational forces of the Province.

Our space will not allow a full record of the learned Doctor's writings. We extract from the *Bibliotheca Canadensis* the titles of some of his interesting contributions to the literature of his native Province: *Old Testament History, its Chronology, Apparent Discrepancies, and Undesigned Coincidences* (1855); *Nova Scotia and Nova Scotians* (1858); *Review of the Rise and Progress of the Church of England in Nova Scotia* (Sermon, 1858);

Oration at the Inauguration of the Welsford and Parker Monument (1860); *Memoir of Sir Brenton Haliburton, late Chief Justice of the Province of Nova Scotia* (1864).

Doctor Hill has been for many years Chaplain of the Legislative Council of Nova Scotia. He is a Delegate from the Diocese of Nova Scotia to the General Synod of the Anglican Church in Canada, and a member of the Executive Committee of Synod. As President of the Church of England Institute, President of the Board controlling St. Paul's Alms House of Industry, and Governor of the Orphan Asylum, he fills local offices of importance. He is also Vice-President both of the British and Foreign Bible Society and of the Tract Society.

His degree (D.C.L.), conferred since his appointment to the Chancellorship of the University of Halifax, was a graceful recognition by the University of King's College of the talents and attainments of one of her ablest sons.

Cleanings.

TEACHING BY EXAMPLE.

Besides the instruction which the teacher gives directly and intentionally, and for which he is supposed to make special preparation, he also teaches many things indirectly and unconsciously, by the force of his example and his character. He is no less responsible for the lessons imparted in this way than for those given in the recitation, and a sense of this responsibility should direct him in the formation of such habits and such a character as shall exert an influence for good—silent but powerful—upon those with whom he comes in contact.

The following are some of the lessons that may be taught. (The thoughtful teacher will extend the list beyond those mentioned in this article.)

Cheerfulness.—Let the teacher begin the morning with a face "as long as the moral law," and he must expect a cloudy day; but let him enter the school-room with

"A sweet, soul-lifting cheerfulness,
Like spring-time of the year,"

and he will have sunshine. There is a contagion in a cheerful disposition, which the teacher can send into many a dark home, where it will lift the clouds and lighten burdens.

Politeness.—This includes all those acts of civility and courtesy which makes one person truly agreeable to another. It involves the treatment of every person with all the consideration that is due to one who is endowed with every attribute of the ideal man or woman. The teacher may deliver daily lectures on the subject, or conduct recitations from the best text-book on "morals and manners," yet, if in his intercourse with his pupils he is morose, boorish, or clownish, his direct instruction will be largely lost. His actions will speak louder than his words. If he gives respectful attention to the questions and recitations of his pupils, he teaches them politeness. If his movements about the room are quiet, dignified and graceful, he teaches politeness. If when he sits he does not lounge, if when he walks he does not drag, if when he speaks he does not drawl or scowl, he teaches politeness. The highest and best type of politeness is but the outward manifestation of genuine goodness of heart. If the teacher, therefore, be a true gentleman or lady, the pupils will receive effective lessons in politeness without effort on his part, and without study on theirs.

Correctness of Speech.—A very large proportion of our people do not use their mother tongue in its purity; their enunciation and pronunciation are bad; their sentences are fragmentary; their language is ungrammatical and often ambiguous; in their speech there is little of cogency or perspicuity, and much of slang. A reform is needed in the use of language, and the teacher should give line upon line and precept upon precept; but these must be supported and enforced by a consistent example. Many persons have such bad habits in the use of language that, though they may recite accurately rule after rule of grammar, yet in their next original sentence they will set all rules at naught. If all our parents and teachers used the English language in its purity, the study of grammar as an art would soon drop out of our course of instruction, and the study would be pursued only as a science. "Tis a consummation devoutly to be wished," and how, but through the teacher, shall it ever be realized?

Industry.—If the teacher is lazy, if he habitually begins school late or closes it early, if he frequently omits part of the recitations, if he lounges about while out of school, he teaches habits of idleness and thriftlessness. If, on the contrary, he is active and energetic, if he always begins and closes school on time, if he fills every recitation hour full of cheerful work, if out of school he engages in useful employment, and in proper recreation at proper times, he teaches lessons of industry, economy, thrift, regularity and punctuality.

Honesty and Integrity.—If on examination days and in the presence of visitors, the teacher calls on the brightest pupils to recite the difficult points, and frames questions for the dull ones which they cannot fail to answer, he is practising deception, and his pupils will know it. If afterwards he finds them attempting to deceive him, he ought to blame himself more than he blames them. If he habitually avoids even the appearance of evil, and his pupils know him to be what he seems to be, if his promises are always kept, if he means what he says and says what he means, if he does not affect knowledge which he does not possess, nor try to cover ignorance which he does possess, he teaches honesty.

If he is a man of incorruptibility and soundness of heart, if he is always loyal to his sense of right, if his adhesion to principles of rectitude is so strong that nothing can break it, if no motive is sufficiently powerful to move him from the strict line of duty, his pupils will see it, will admire his character, and will strive to imitate it. Example is a most powerful teacher, and

"Our lives,
In acts exemplary, not only win
Ourselves good names, but do to others give
Matter for virtuous deeds."

Common School Teacher.

WHAT SHOULD BE THE AIM OF THE MODERN TEACHER?

As soon as physiologists had discovered that all the faculties of the intellect, however originating or upon whatever exercised, were functions of a material organism of brain, absolutely dependent upon its integrity for their manifestation, and upon its growth and development for their improvement, it became apparent that the true office of the teacher of the future would be to seek to learn the conditions by which the growth and the operations of the brain were controlled, in order that he might be able to modify these conditions in a favorable manner. The abstraction of the "mind" was so far set aside as to make it certain that this mind could only act through a nervous structure, and that the structure was subject to various influences for good or evil. It became known that a brain cannot arrive at healthy maturity excepting by the assistance of a sufficient supply of healthy blood—that is to say, of good food and pure air. It also became known that the power of a brain will ultimately depend very much upon the way in which it is habitually exercised, and that the practice of schools in this respect left a great deal to be desired. A large amount of costly and pretentious teaching fails dismally for no other reason than because it is not directed to any knowledge of the mode of action of the organ to which the teacher endeavors to appeal; and mental growth in many instances occurs in spite of teaching rather than on account of it. Education, which might once have been defined as an endeavor to expand the intellect by the introduction of mechanically compressed facts, should now be defined as an endeavor favorably to influence a vital process; and, when so regarded, its direction should manifestly fall somewhat into the hands of those by whom the nature of vital processes has been most completely studied. In other words, it becomes neither more nor less than a branch of applied physiology; and physiologists tell us with regard to it that the common processes of teaching are open to the grave objection that they constantly appeal to the lower centres of nervous function, which govern the memory of and the reaction upon sensations, rather than to those higher ones which are the organs of ratiocination and of volition. Hence a great deal which passes for education is really a degradation of the human brain to efforts below its natural capacities.—From "Science in the English Schools," in *Popular Science Monthly* for September.

I hold it as a great point in self-education that the student should be continually engaged in forming exact ideas, and in expressing them clearly by language. Such practice insensibly opposes any tendency to exaggeration or mistake, and increases the sense and love of truth in every part of life. Those who reflect upon how many hours and days are devoted by a lover of sweet sounds to gain a moderate facility upon a mere mechanical instrument, ought to feel the blueness of shame if convicted of neglecting the beautiful living instrument wherein play all powers of the mind.—*Professor Faraday.*

LETTER TO A TEACHER.—Miss Q.—Don't teach my boy no more sounding of his a b b's I'll learn him that at home. And don't waist your time over the gymnasticks—he gits enuf of them over the back gate. You hav too much foolin goin on I'm aferd your skolars dont learn much. his mother mis M—

—Reading furnishes the mind only with the materials of knowledge; it is thinking that makes what we read ours. We are of the ruminating kind, and it is not enough for us to cram ourselves with a great load of collections,—we must chew them over again.—*Channing.*

SUGGESTIONS TO STUDENTS.

BE PUNCTUAL.—A total loss of interest in school duties is often directly traceable to the tardiness of the pupil.

BE NEAT.—This applies not only to your personal appearance but the room and desk which you occupy. Use your best endeavors to keep these as free from dirt as possible.

BE ORDERLY.—Use the same care with regard to your position, in both study and recitation, that you would do in the presence of ladies and gentlemen at an evening party.

BE STUDIOUS.—No good comes from idleness.

BE PERSEVERING.—He who stops for trifles never accomplishes much.

BE ATTENTIVE.—The key to many a puzzling problem is lost through inattention.

BE COURTEOUS.—It is as easy to be gentlemanly or lady-like in your intercourse with fellow-students as to be rude and boorish. Drive out all selfishness. Let memory in after years dwell only upon pleasant tones and faces.

BE HONEST.—Show yourself to be the very soul of honor in all your school life. Let no shadow of untruth ever fall upon your conscience. Let all your reports bear the keenest scrutiny. Try and merit no reproach, but if merited do not seek to avoid it by any subterfuge.

DRAWING.

Drawing in its industrial phase is a chief agent in hand culture. Its importance will be more and more felt as manual skill becomes more imperatively the demand of the times. The time for picture-making is not in the years covered by our school-work. But the study of geometric forms, the conventionalizing of natural forms, the combination of natural forms within given limits according to the taste of the designer, the accurate construction of required figures, all have their practical bearing upon the activities of life. Observation, or the use of the senses—analysis, or the application of the reasoning faculties to the forms and proportions of things observed—manual skill in representing to the eye the outlines of things observed, are all cultivated in a remarkable manner by the study of industrial drawing. The aid which the hand can render the mind is noticeable at every step in the processes in education. It is apparent in familiarizing the little child with the forms of his letters both in reading and writing, in the diagrams which are so helpful to the teacher of arithmetic and of grammar, in the map drawing without which geography is studied but to little purpose, in the outlined forms of natural objects. Drawing is a language of universal use, and remarkably concise—a few lines rapidly sketched being of more value than paragraphs of verbal description.—*J. L. Pickard.*

SOME GENERAL HINTS UPON READING.

I. Not too much Fiction.—A pupil who studies faithfully may be benefited by a moderate amount of light reading, but no one should confine his selection of books to stories and fiction. One who does so wastes time, weakens the general powers of his mind, and unduly develops his imagination. Usually select such books as are instructive, and not merely entertaining.

II. No interference with School Studies.—Never let your reading of books from the library interfere with your regular school work. If you have lessons to prepare at home, prepare them before taking up any general reading.

III. Do not read too much.—Avoid excess in reading. No matter how interesting a book may be, do not sit up late to finish it, and do not stay in the house to read when you should be taking exercise. Books should not be changed every few days. A book of 200 pages cannot be profitably read in less than a week, by an ordinary pupil who attends to his school and other duties.

—A would-be teacher in Toledo recently replied to an examination question, "Do you think the world is round or flat?" by saying, "Well, some people think one way, some another; I'll teach round or flat, just as the parents wish."

TEACH CURRENT EVENTS.—In our high schools, and in the highest grades of grammar schools, some time should be devoted each day to current news. A few pupils will be found well informed; and the large majority are lamentably ignorant of current events. Some part of the blackboard surface might be set apart as a "bulletin" upon which should be transcribed, as concisely as possible, the important news of the day. Limited space would require close scrutiny. The pupils themselves might select the editors for short terms of service, the editors being excused for the time from further work in composition. A few moments given to a general study of the outline of the news, with maps opened, would prove a fine lesson in Geography. Knowledge of the past history of the peoples or places would be revived. The pupil's course of miscellaneous reading might be modified and made more productive of good by connecting it with current events. The value of such an exercise must of course depend upon the intelligence and judgment of the teacher, and no single exercise of the school-room would more surely enlarge the former or strengthen the latter.—*F. L. Pickard.*

—The following excellent hints were given by a practical speaker at a recent meeting of the Detroit teachers: "Have a clear, well-defined idea of the kind of school you want. Have in mind an imaginary model school, but do not be discouraged if you fail many times before you attain this; each day's determined work will bring it nearer. Teach pupils how to study. Teach them how to get from a book the thoughts which it contains. Much time is wasted in getting ready for work. Too often when you enter the room there is the appearance of getting ready for inspection. Teach pupils to attend to business, to do the work assigned them at the proper time, and to do one thing at a time. In hearing recitations be interested yourself; be enthusiastic; have a soul in the work. If you are obliged to punish, do it out of school. If anything unpleasant has occurred during the day between the teacher and any of the pupils, never allow the school to close without dropping some pleasant word which will cause all to leave the room with good feeling. Cultivate in pupils, as far as possible, self-respect and self-government. Never attempt to forget out mischief without certainty of success; better let it pass than fail in the attempt. In governing your school do not lower yourself to the level of your pupils, but always be dignified and gentlemanly in your department in all the little things that pertain to the government of your school, thus silently and imperceptibly lifting them up to a higher standard."

—A teacher said to us at one of the recent county institutes: "I have always been made to feel by some professional musicians that music is such a high art that no ordinary mortal should aspire to it, much less should an ordinary teacher attempt to teach it; and, consequently, I have never attempted anything with it; but, if there is no harm in having the children in our schools read vocal music, and a regular teacher, although she cannot play upon any kind of instrument, may be permitted to give instruction in the same, I am disposed to try it." This idea that one must possess wonderful qualifications before she attempts giving musical instruction in our schools has wrought much harm in the progress of musical knowledge. Breadth of knowledge and high attainments in any department of science or art are desirable and should be sought for by every one; but because one has not reached the highest pinnacle of perfection, is no reason that he or she should not do something, even though it be to teach the principles of musical notation. Probably the most successful teacher of arithmetic in one of our primary schools would not succeed as a professor of mathematics in a university; neither is it likely that one of our greatest elocutionists or far-famed orators would accomplish a great deal in teaching a little child to speak and read its native language. So it is with music; since we cannot all be Mozarts or Beethovens, that which we can do let us do with all our might, even though it be to teach a little child a song that may aid in giving more joy to its life.—*W. L. SMITH, East Saginaw.*

—We ought to spell the word *potato* "Ghoughphtheightean," according to the following rule: *Gh* stands for *p*, as you'll find from the last letters in *hiccough*; *ough* stands for *o* as in *dough*; *phth* stands for *t*, as in *phthisis*; *eigh* stands for *a*, as in *neighbor*; and *ean* stands for *e*, as in *beau*.

The Canada School Journal

IS PUBLISHED

THE FIRST OF EACH MONTH,

—AT—

11 WELLINGTON ST. WEST, TORONTO, ONT., CAN.

Subscription \$1.00 per year, payable in advance.

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TORONTO, JANUARY, 1879.

THE MOST IMPORTANT OF THE "THREE R's."

Among the important subjects which are discussed at our Teachers' Institutes we are glad to observe that prominence is given to reading and the best methods of teaching it. It must be admitted that this—probably the most important of the "Three R's"—has been too long neglected, or, at least, has not been taught with even a fair degree of efficiency. Its value as a means of cultivation for the vocal organs, and of discipline for both intellect and heart, have not been generally recognized; and while arithmetic and kindred subjects have their enthusiastic teachers and admirers, comparatively little attention has been given to the subject which, beyond all others in the school curriculum, requires the greatest skill and thoroughness on the part of the teacher. The consequences are obvious; the graduates of the schools are neither good readers nor good speakers. Their speaking and reading are marked by imperfect enunciation and a sad lack of expression, to say nothing of the general melody of speech which characterizes the thoroughly educated reader.

The cultivation of the vocal organs ought to begin when the child begins to speak; it ought to be kept constantly in view when the child begins to read. At quite an early age a mastery of the difficult sounds of the language and the habit of distinct enunciation, as well as flexibility of voice, may be acquired. But to this end thorough teaching is essential.

With but little instruction a child may become tolerably proficient in arithmetic and algebra; but to become a good reader the aid of a capable and thorough teacher is indispensable. He must hear correct enunciation to be able by practice to acquire it for himself; he must hear a good teacher give the various vowel and consonant sounds with clearness of enumeration and fullness and melody of tone; he must hear these sounds given again and again, with an endless variety of pitch, and force, and inflection, and be taught to carefully practise them, if he is to become possessed of the power of delivering at will these elements of correct expression.

It is not enough that the teacher should speak of faulty enunciation. Lecturing will not avail—example is what is needed. The teacher may "pour out" any number of facts and principles concerning distinct articulation, proper inflexion,

modulation, &c.; but a single example correctly given would be much more interesting and profitable to the pupils. The way to good reading, like the way to many other things, is long by precept but short by example. From the very beginning of the child's course the teaching must be by example—examples of distinct enunciation, proper inflexion, emphasis, and, in a word, of all the elements of correct expression.

Some, we believe, take the ground that it is useless, or worse, to attempt to educate the child to read with expression. Let him, they say, comprehend the meaning of what he reads, and leave the rest to nature—the proper expression of the thought will come without training in the art and science of expression. We hold the opposite opinion; the power of correct expression is not a necessary adjunct of a knowledge of the subject matter. This knowledge is indeed necessary; but it is not sufficient to ensure the perfect expression of the thought. If this were so, good reading would surely be the rule, and bad reading the exception. This theory of "leaving to nature" will never make good readers—at least it never has done so. The children of our schools have been "left to nature," and nature has proved a miserable failure. The unmusical monotone of the primary school-room—the hard metallic tone, the slovenly enunciation, the utter inflexibility of voice—have become proverbial: they are the result of the "leaving-to-nature" theory.

It seems to be thought that, because the simple sentences of the primary reading book are not the vehicles of what is brilliant in thought, there is nothing to be done but to make the child familiar with the forms and sounds of the words in his simple lesson. But even such sentences as "Ned hit Tom a rap," "he ran off to-day to try and got a few nuts," &c., have a meaning, and may be delivered with proper expression. But the child, though quite understanding the meaning, does not read them correctly; he is wrestling with the forms of the words, and his expression is therefore the monotone. This is the natural consequence of his early difficulties, and, if not corrected, it becomes a habit which clings to him through all his course. The teacher should, then, from the very first, pay close attention not only to enunciation, but to pitch, emphasis, inflexion and all the elements of true expression. He is not, of course, to "lecture" on inflexion, and modulation, and emphasis, &c.; but he will find that when he himself gives expression to any of these elements, the child will follow his example with the greatest accuracy.

It is not enough that the exercise of reading should subserve the cultivation of the vocal organs and the acquisition of a good delivery; it should be made an instrument for the discipline of the intellect and the emotions. If the subject of the lesson is argumentative, let the pupils fully perceive the cogency of the reasoning, and comprehend the value of the truth it establishes; if it is poetic, let it not fail to touch the imagination; if it enforces some grand moral truth, let it come with quickening influence on the heart—and thus truth for the intellect, beauty for the imagination, and pathos for the heart shall combine their influence in the formation of a character at once of beauty and of power.

It has been said by an American educator that his country-

men are, as a nation, deficient in melody of speech—"that music of the phrase, that clear, flowing and decided sound of the whole sentence, which embraces both tone and accent, and which is only to be learned from the precept and example of an accomplished teacher." The defect here mentioned may become a national characteristic of Canadians, unless READING take a high place in the estimation of our teachers, and in the work of the school-room. Let the subject be carefully taught in all the classes of our public schools—let the work thus well begun be heartily carried on in our high schools, and we shall doubtless escape the squeaking voice, the nasal twang, the soulless expression of beautiful thought, and acquire a perfect enunciation, a power of correct expression, a general melody of speech that will make our language, which Byron libels as "harsh, whistling, grunting, guttural," scarcely less musical than "that soft, bastard Latin, whose syllables breathe of the sweet south."

PRIZES.

Prize-giving has now become amongst us what our American cousins would call an "Institution." In our own and sister provinces it has received official endorsement. In connection, with the Intermediate Examinations in Ontario prize giving, in one form or other, has been introduced for the first time into several of our High Schools. And yet, notwithstanding its official endorsement, its support by eminent teachers and educationists, and its growing popularity, we have grave doubts if it is a good and safe principle of action. Many excellent teachers who resort to it acknowledge its tendency to be dangerous, but justify themselves on the ground of necessity. Some motive of action is required, and they cannot find any other sufficiently powerful to produce the desired effect. We think other motives can be found quite as stimulating to the pupils, and far less evil in their tendencies. If such can be pointed out a favor will be conferred on those who regard the giving of prizes as an unsafe principle of action, and those who have no scruple on the point may find the influence of other motives a desirable auxiliary to the work of education.

From among the many motives of action which may be substituted for prize giving, we submit the following for the earliest consideration of teachers:—

1. *Let the pupils be taught in a judicious and skilful manner and they will love to learn.* The exercise of the faculties and the acquisition of new ideas are naturally sources of great pleasure to the mind. This pleasure once tasted will be again desired. The desire will grow into a stimulus, pure in its nature, safe in its operation, salutary in its influence, and sufficiently powerful in its effects. The world usually goes from one extreme to another. Formerly pupils received little or no assistance, except what the rod communicated. Now they receive too much. With many of our teachers the pupils are all but entirely passive in the acquisition of new ideas. The teacher does all the thinking and most of the talking. With such teaching, pupils soon find that *thinking* is quite unnecessary. If they have only sense enough to keep silent for a

moment, the whole subject will be fully explained on the black-board. The teacher who wishes to stimulate his pupils to the highest degree of exertion should guard against this error. He should never do for his pupils what they can do for themselves. When they must be assisted, the teacher should only afford them such assistance as may enable them to do the rest for themselves. But while stimulating the pupil to exert his faculties, the judicious teacher will see that all counteracting influences are avoided; that the mind is not too long confined to a single subject; that the memory alone is not exercised while the other faculties lie dormant; that the body is not kept too long in one position, and that too many new subjects are not presented to the mind in rapid succession.

2. *The teacher should aim at variety and novelty both in the subject presented to the attention of the pupils, and in the method of presenting them.*

When the pupil begins to weary of one subject, it should be changed for another. The most difficult subjects should come in the forenoon. Metaphysicians tell us that the mind is most exhausted by acquiring *new* ideas. New subjects should, therefore, come as early as possible in the forenoon. Many a pupil has become disgusted with a subject by having it presented to him when his mind was wearied out with study. The teacher should emphasize new ideas, putting the subject in such a way that the pupils can readily distinguish the new ideas from the old ones.

3. *The teacher should not only always feel, but always manifest a lively pleasure in the improvement of his pupils.* He is unfit for his duty who can listen with cold indifference to the recitations of his pupils, without a kindly word of approbation to those whose efforts to learn have been successful. There is no pleasure more exquisite than that of knowing that we give pleasure to others. "You have got that lesson well," coming from a teacher that is loved, will compensate many a pupil for hours of toil, even if the getting of the lesson had been in itself a hard and painful task. Where pupils are indolent, or negligent, it is proper to let them know how much pain their conduct gives you; and perhaps a gentle reprimand for their waste of time and mis-improvement of privileges may be expedient. But anything like scolding, driving, or compulsion, instead of making them love learning, will only serve to increase their aversion to it. Harshness of any kind is a bad method of getting knowledge into the head, or the love of it into the heart.

4. *The teacher should associate as many pleasing ideas as possible with the whole school-life of the pupils.* The teacher should cultivate a kind and affectionate disposition. He should make his pupils feel that his patience and kindness are not exhausted by their ignorance, dullness, and other numerous little faults. He should always kindly impress upon them that an opportunity to learn is a privilege; that the school is a pleasant place; that the teacher is their friend. If this were done, children would soon learn to love their school better than they love their play.

5. *Teachers should impress on their pupils a sense of duty and of future accountability.* Pupils, as a general rule, are easily impressed, and it is not difficult to make them feel that they owe duties to themselves, to their parents, to those around

them, and especially to their Maker, which they can only discharge by diligent assiduity in the acquisition of knowledge. Let them be made to feel that if they neglect these duties they do wrong, and must suffer the reproaches of an accusing conscience. Let the teacher quietly and earnestly impress upon his pupils that time is short, and that for the manner in which it is spent an account must be rendered hereafter; that both their time and their privileges are precious, and that they have no right to waste the one or neglect the other.

6. *Let the teacher be an earnest, faithful and enthusiastic student himself.* This is the last means of stimulating pupils to study which we shall give at present, but it is by no means the least important. Without it the others will avail but little. Example is contagious. If the teacher does not love study, neither will his pupils. The *similia similibus* is a real law of the mind, whether it is of medical science or not. A teacher who constantly studies a subject becomes enthusiastic over it; and even should he, at times, go far beyond his pupils, so that they cannot follow him, yet the enthusiasm of his nature will inspire his pupils to rival him. We cannot close this article better than by the following extract from a letter of Dr. Arnold to a young teacher:

"But, on the other hand, you need not think that your own reading will now have no object, because you are engaged with young boys. Every improvement of your own powers and knowledge tells immediately upon them; and indeed I hold that a man is only fit to teach so long as he is himself learning daily. If the mind once becomes stagnant, it can give no fresh draught to another mind; it is drinking out of a pond, instead of from a spring. And whatever you read tends generally to your own increase of power, and will be felt by you in a hundred ways hereafter."

SCHOOL LAW AMENDMENTS.

The School Law and Regulations as set forth in the Compendium lately issued by the Minister of Education are, in general principle, sufficiently advanced to remain in force, with very slight amendments, for a considerable length of time. There are a few minor points of detail, however, to which the attention of the Minister of Education and the Legislature might properly be directed.

1. *Model Schools.* County Model Schools have proved to be of great importance in training teachers of the lowest grade. They are just what the country needed to give teachers the first step in the ladder of training. Four suggestions may be made in relation to these.

(1) One Inspector should be appointed to secure uniformity of management, introduce improved methods of teaching, and report the progress made and the standing of the different schools to the Educational Department.

(2) The Public School Inspectors should be brought more directly in connection with the Model Schools as such. The students trained at a County Model School are to teach in the county in which the school is situated. Upon the Inspector of that county more than any other person rests the responsibility for the proper education of the children who reside in it. He ought to be the one who keeps abreast with the times in educational progress. He is the man who must mould the teachers of his district, and direct them in the best methods of conducting their work. He knows better than

any one else-possibly can the character of the schools in his county and the nature of the difficulties which young teachers are likely to encounter in their work. Who then could be as well fitted as he to deliver a course of lectures to the students who are preparing to become his teachers? If he could not deliver all the lectures, he should at least deliver those on school management.

(3) Cities should be allowed to have Model Schools separate from counties if they desire to do so. The cities of Ontario are increasing in number and extent so rapidly that the time has arrived when their special needs will have to receive attention. Not only should they have separate Model Schools, but their Model Schools should be conducted under special regulations. The duties of a teacher in a graded city school are essentially different from those of a teacher in a rural district. To be fitted for the proper performance of her duty she requires a very different training. A young lady who intends to teach in a city school can learn her duties and how to perform them in no place so well as in the schools of the city in which she is to teach. The law at present does not recognize Local Examining Boards for cities, nor is it necessary that it should do so. There are in every city more students who pass the Intermediate Examination than there are vacancies in the staff of teachers. Why then should an Examining Board be appointed to manufacture a large supply of Third Class teachers annually? Every pupil in a city can attain with ease the non-professional standing required for Second Class teachers before she is old enough to receive a legal certificate to teach. City Model Schools should therefore train only those who have already passed the Intermediate Examination or the non-professional Second Class Examination.

It is perfectly evident that with two examinations per annum the number of Second Class teachers who will seek admission to the Normal Schools will soon be much greater than can be trained with the Normal Schools at present in existence. Could not the expense of building more Normal Schools be avoided by allowing City Model Schools to give Intermediate Students a course of training, to extend throughout a year at least, with the power to grant to those who at the end of that time received a favorable report and passed a satisfactory examination, Second Class Professional Certificates? The professional examinations in such schools, if they were established, should be conducted by the Central Committee or some Board appointed by the Minister of Education. Candidates trained in City Model Schools of the above character would have received in their year's training quite as much, if not more, benefit than they now receive by attending the County Model School for eight weeks and the Normal School for about three months.

(4) To render the County Model Schools efficient in the highest degree, it is absolutely essential that the masters in them should have a fair understanding of the fundamental principles of the natural growth and development of the human mind, that they may theoretically and practically hold up as examples to their students only correct models of teaching.

2. *Payment of Inspectors' Salaries.* The Government has power to allow five dollars per school to assist in paying the

salaries of County Inspectors. Cities are not thus aided by the Government, although they have heavier educational burdens than counties in proportion to their population. Simple justice would lead to the placing of cities on the same footing as counties in this respect.

3. *Expenses of Entrance Examinations.* These have to be borne in cities and towns by the Public School Boards. The High Schools receive all the benefits of these examinations, and should properly pay the expenses connected with them. In many cases the candidates do not come from the Public Schools at all. Even if they did, however, the schools they are entering should certainly be charged with the expenses of the examination. High School Boards might as justly be expected to pay the expenses connected with the Matriculation Examinations of Universities, as Public Schools those of the Entrance Examinations to High Schools.

4. *Grant to Superannuated Teachers.* As all teachers who teach for more than three years must in future be trained at a Normal School, it would seem to be just that the clause giving them an extra allowance of one dollar per annum for each year they have taught should be removed from the statute book.

EXPENSES OF THE EDUCATIONAL DEPARTMENT.

An effort is being made by certain parties to fix upon the Honorable Mr. Crooks the responsibility for the increase in the expenses connected with education in Ontario during the past seven years. The cost of the various departments, inspection, examination, &c., are given for 1871 and contrasted with the corresponding items for 1878. The expenditure has, of course, been very largely increased under several heads; but whether the increase be a matter for praise or censure, it is manifest that Mr. Crooks is not entitled to receive it. The increases result, in nearly every particular, from the passage of the school law of 1871. This was passed by the Government of Hon. J. Sandfield Macdonald. Hon. M. C. Cameron introduced the bill, which was prepared by Dr. Ryerson, who is accorded all the credit for the many excellent features which it contained. If any blame could be attached to any one, it could not certainly be to Mr. Crooks.

When it is charged that the examination of teachers costs the Province more than formerly, those who make the charge forget that the Educational Department has assumed the full examination of all Second Class Candidates since the first date named. This work was done by County Boards, and was paid for by the County Councils. It is now paid for by the Provincial Treasurer; hence the apparent increase in the cost of examining teachers. The fact is, it costs less than formerly, and the municipalities are relieved of the burden of paying for the examination of teachers, whose certificates when they received them were provincial, and who frequently never taught a day in the county whose treasurer paid the examiners' fees. This is, of course, merely the financial aspect of the case. The numerous advantages of the new system over the old are such that the country would have been quite willing to pay for the changes, if any additional expenses had been necessary.

To contrast the cost of the new and the old systems of inspection is misleading. The most important feature of the Act of 1871 was that which provided for the thorough and efficient inspection of schools by competent, trained County Inspectors. Every man of intelligence admits the superiority of the new system. The only question that can possibly be raised in relation to its expensiveness is, whether the inspectors are paid too well for their services. Not many would hazard an answer in the affirmative. The Inspectors' positions are the highest in the teachers' profession. It cannot be too much for the eminently successful teacher to hope that when he has reached the highest place open to him he should find himself in receipt of an income less than that which a man equally eminent in business would pay his book-keeper.

However, if the opponents of Mr. Crooks wish to hold him responsible for any unnecessary increase in the expenses of his department, they should, in all fairness, contrast the items of 1878, not with those of 1871, but of 1875, the year in which Mr. Crooks became Minister of Education.

COUNTY MODEL SCHOOL EXAMINATIONS.

The County Model School system has now been in force for two years, and the satisfactory results that have attended its operation have justly earned for it the title of "the lost link in our Public School education." Certainly no cheaper or more-efficient method of training teachers of the lower grade could have been devised. The professional examination is partly oral and partly written, and embraces, (1) Aptitude to teach, (2) Reading and Elocution, (3) Mental Arithmetic, (4) Hygiene, (5) Education, (6) School Law. The "aptitude to teach" of each teacher in training is entered in the Training Register from day to day by the Head Master, and at the close of the session forms the basis for marking the certificates under this head, and also for grading the students as first, second, third, fourth, fifth, or sixth rate teachers. The examination in Mental Arithmetic, Reading, and Elocution is oral. Intending candidates for Third Class certificates at the next midsummer non-professional examinations will doubtless be glad to learn something of the nature of the professional examination which will follow it at the close of their training in the Model School. Below are given, out of a vast number of sets of examination papers, those set for the December examination in the Hamilton Model School, and upon which forty-one out of forty-two candidates passed with honors and received certificates. The result must be highly gratifying to the efficient Principal, Mr. G. W. Johnson.

MENTAL ARITHMETIC.—Time, 5 minutes.

- (1) I paid \$60 per acre, and $\frac{2}{3}$ of what I paid was $\frac{1}{4}$ of what B paid; what did B's 75 acres cost him?
- (2) John paid 50 cents for a knife, which was $\frac{1}{4}$ of two times the cost of his pencil; find the cost of his pencil.
- (3) What will 3 cwt. 2 qrs. 10 lbs. of tea cost at \$20 per quarter?

(4) Said A to B, if to my age you add its $\frac{1}{2}$ and $\frac{2}{3}$ the sum will be 98; how old was he?

(5) A is 40 years old, and $\frac{3}{4}$ of his age is $\frac{2}{3}$ of twice as much as his wife's age; how old was his wife?

SCHOOL LAW.—*Time, 2 hours.*

- (1) What does School Organization embrace?
- (2) Define School Management.
- (3) What is the design of School Discipline?
- (4) Give some rules by which a teacher should be guided in inflicting punishment.
- (5) How would you deal with the following offences:—Irregularity, Truancy, Quarrelsomeness?
- (6) State the specific duties of a public school teacher.
- (7) State the duties of pupils.
- (8) Mention some of the duties of school trustees.

EDUCATION.—*Time, 2 hours.*

- (1) What is education? Define physical, intellectual, moral and æsthetic education.
- (2) What is instruction? What is the relation between education and instruction?
- (3) Explain clearly your method of teaching the following subjects to a class reading in the 2nd Book:—Simple Addition; the principle of "carrying" in subtraction in 7600004—200804; the multiplication table; short and long division.
- (4) When would you commence teaching Grammar? Explain your method with beginners.
- (5) Give your method of teaching to III. Class Reading, Spelling, Writing, Reduction, G. C. M., L. C. M. and Reduction of Fractions.
- (6) Give notes on teaching Grammar; Geography; History; addition, subtraction, multiplication and division of fractions; Decimals to the IV. Class.
- (7) How and when would you commence teaching Geography? Map Drawing?
- (8) Give notes on any one of the following as an object lesson:—Cotton, lead pencil, the sheep, the horse.

HYGIENE.—*Time, 1 hour.*

- (1) Describe a school room of dimensions sufficient to accommodate fifty pupils, drawing an outline of the floor, seats, &c.
- (2) Write notes on Oxygen, the sweat glands, nutrition and the need of physical exercise in connection with health.
- (3) Give a brief description of the skeleton, of the blood, and also of the circulation of the blood.
- (4) Mention the organs of digestion, and give a description of the teeth, including their structure, classification, uses, and the hygienic rules for their preservation.
- (5) Distinguish various kinds of ordinary food into body-warmers and flesh-formers, giving examples of each.
- (6) Write notes on light, heat, cleanliness and pure air in connection with schools, showing their uses and the purposes they subserve in the economy of school life.

We take great pleasure in announcing that at the last meeting of the Protestant Board of Education for the Province of

Manitoba it was moved by Prof. Hart, seconded by the Rev. Mr. Pinkham, Chief Superintendent, "That the Board advises all its teachers to become subscribers for a journal on education, and recommends the CANADA SCHOOL JOURNAL."

Contributions and Correspondence.

MODERN GEOMETRY.

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In scarcely any subject was a change of method more needed than Geometry. The purely abstract form in which its truths were presented all accorded with the nature of the subject which it deals with; the properties of bodies that relate to space, surfaces, lines, points, angles, &c., were rarely apprehended, and blackboard illustrations only tended to confirm the misapprehension. Logical demonstrations, as they were called, built upon such incorrect notions, were more frequently the efforts of memory than of reason, as may have been seen in the inability of most pupils to deal intelligently, at any stage of their course, with original propositions. Pupils with special geometrical tastes may have exhibited much ingenuity and fertility in the construction and solution of original problems; but the average pupil seldom gained such a grasp of principles as gave him any facility in applying them.

The principles which guide the intelligent teacher in the communication of elementary instruction ought not, it will be conceded, to be ignored in the teaching of Geometry. In the subject of Geography, conceptions are awakened by the pupil's attention being directed to the physical aspect of the country around him; these conceptions he is then led to represent in the form of plans, maps, &c. His notions of climate and the conditions upon which it depends are, in the first instance, all gained from his observation being called to the phenomena around him. He is thus led to study not only with intelligence, but with a vividness which cannot fail to awaken deep interest, the geography of any country. Arithmetic, again, is treated in a similar manner. Ideas of number are developed through the medium of objects; then follows representation of these ideas and afterward operations upon the numbers. If the same principles are applied to the teaching of Geometry, the steps should be (1) Geometrical conceptions, (2) Representation or Construction, and (3) Logical demonstration.

1. *Geometrical Conceptions.* The habit of commencing the elements of any subject by giving definitions is happily falling into disuse. The clearness of a pupil's impressions cannot be tested by his ability to give definitions in stereotyped phrases. They are to him nothing more than sounds recited at a given signal, until he finds that they are simply statements giving the essential properties of objects. Conceptions should be gained from the objects directly. The ideas of surface, line, point, angle, &c., should be developed with the assistance of such objects as can illustrate them. As a cube presents many of the elements of Geometry and is divisible into various parts, it may be often used for this purpose. Let it lie cut into thin divisions, the pupil will not only see what a surface is, but how surfaces are generated, and be enabled to abstract them from every solid. The idea of a line may be abstracted from the surface, and the idea of a point as indicative of position in the line or at its extremities. A solid is thus seen to be of three dimensions, a surface of two, a line formed from the meeting of two surfaces of one dimension, and a point which only indicates position of no dimensions. As a very brief illustration of awaken-

ing a conception of a line, take a surface from a cube, or in its absence take a sheet of paper. It has two sides or surfaces. These meet at the edge and form a *line*. It is supposed that the pupil has seen from a previous lesson that a surface has no thickness, and from the preceding illustration he sees that a line may be regarded as the boundary of a surface; he is thus led to conceive of a line as length without breadth. Some teachers may prefer such an illustration as the following: Suppose two surfaces in juxtaposition, the one coloured red and the other green, it is evident there would be a *region* belonging as much to the red as to the green surface; such a region is called a line.

The classification of surfaces and lines may be taught, the fundamental idea being that of direction, *e.g.*, by moving the finger along a straight edge, the *direction* will not be changed, and if moved round a ring, or the edge of an ink-well, the *direction* will be changed *continually*. Parallel lines will be seen as lying *side by side*, and all tending to points at *any distance*, which, wherever assumed, are at the same distance from each other.

The idea of angle might be developed in accordance with these conceptions of straight and parallel lines being conceived as expressing the *difference in the direction* of two lines that tend to a point at a *finite* distance. The hands of a clock or watch, each hand being supposed to be indefinitely thin, or to be a *material* line, may afford a very good illustration. When one hand overlies the other, both hands are directed to the same point and no angle is formed; let one of the hands be turned, the smallest amount of turning will cause a difference in the direction of the hands; this difference is the angle between the two hands.

2. *Construction.* When such conceptions have been gained as form a necessary groundwork, the pupil should proceed to represent them. The simplest operation, and therefore the first to be taken, is merely to place the surfaces cut from the cubes or any other suitable surfaces on a piece of paper and pass the pencil round them. The lines thus drawn enclose the surface, but do not, as pupils who are not allowed to work out definitions often imagine, found the surface. (How many pupils who have even demonstrated several books of Euclid are surprised to learn that the top of the table they write upon is a parallelogram!) When he has had a considerable amount of practice in drawing figures by the eye, he should be required to test their correctness, thus stimulating him to make them exact, and preparing him for appreciating some systematic contrivance in their construction. When he is thus prepared, let him be taught to construct figures by an exact method by means of scale and compass. To bisect a line, to erect a perpendicular, to bisect an angle, or describe a hexagon, are exercises which with a little practice he will be enabled to do readily and accurately. Such constructive exercises will not only lead to very clear geometrical conceptions, but will invest the subject with that kind of interest which will induce the pupil to seek further knowledge.

3. *Logical Demonstration.* By means of such exercises as the preceding, the pupil will have observed certain relations arising out of certain conditions. His attention may now be more particularly called to these relations and conditions as an immediate preliminary to the logical demonstrations. Let him by experiment or measurement find out that the square described upon the hypotenuse of a right angled triangle is equal to the sum of the squares described on the other two sides, and his curiosity naturally prompts him to enquire why it is so. Let him find out the relations between the diameter and circumference of a given circle, and he will be induced to enquire if the relation holds good in all cases. Let him compare two triangles that have two sides of the one equal respectively to two sides of the other and their included angles equal, and he will be led to see that it is impossible for these triangles to

differ in any respect. As an illustration of the last proposition, take an exercise similar to the following:—Upon a sheet of paper draw two straight lines from the same point so as to form an angle A. Cut out the angle, and by placing it upon another sheet of paper and tracing the sides with a pencil make an angle equal to A. Mark off from these sides two lines respectively equal to two given lines and join their extremities. A triangle will thus be formed having an angle equal to A, and the sides which contain this angle respectively equal to two given lines. In the same way make another angle equal to the angle A, and from the sides mark off two lines previously given and join their extremities. In drawing these triangles no regard was paid to the lines joining the extremities, but it will be found by comparing the triangles that these lines are equal, and that the triangles are equal in every respect.

By continuing at such exercises until a large number of geometrical facts are established, the logical demonstrations will not only present no obstacle, but will be naturally sought for as necessary supplements. A teacher who complains about the want of interest his pupils take in Geometry will find that it is owing in most cases to inadequate conceptions of the facts about which they are to reason. Any branch of knowledge may be made repulsive or interesting from the method pursued in teaching it. If pupils are induced to become active discoverers instead of passive recipients, they awake to a consciousness of inborn power which not only gives interest, but inspires with a courage that must lead to success.

If some such method as has been described is adopted in the first stages of Geometry, the pupil may be introduced to Euclid's Elements, if no other text is used, with the sure hope that he will readily master its successive propositions and appreciate their value.

Wormell's Modern Geometry, which is the prescribed text-book for the schools of New Brunswick, is constructed on the foregoing principles, and will be found of great value to a teacher who aims at rational methods of instruction. It contains also an Appendix giving a tabular view of the correspondence of its propositions with those of Euclid, by Dr. Jack, President of the University of New Brunswick. It might be noted here that the University accepts at its Matriculation examination the first twelve chapters of Wormell's Geometry as a substitute for the first four books of Euclid. Though a large part of Dr. Jack's professional duties relate to the purely abstract form of Mathematics, he is keenly alive to the necessity of commencing the subject of Geometry in a concrete form, and has rendered Dr. Rand, Chief Superintendent of Education, valuable service in introducing the Modern Method into New Brunswick.

The Modern Method of commencing the subject must be universally the method of the future. There is no doubt that many strong-minded teachers, who can only deal with children as immature and inferior men, will for a time continue to hold out against methods suited to children's ways of seeing, feeling, and thinking, but the influence of foreign countries will compel them to yield. The foreign consensus against the use of Euclid as a text-book in schools is something striking. Mr. Matthew Arnold, in his Report on Foreign (Continental Europe) Education, says, "Our (English) geometry teaching was in foreign countries sufficiently condemned when it was said that we still used Euclid."

PAST AND PRESENT RELATIONS OF TEACHERS TO EACH OTHER.

BY J. GEORGE HODGINS, LL.D.

In the earlier periods of our educational history, or even twenty-five or thirty years ago, such a thing as a Teachers' Association or

a County Convention was not thought of. Each teacher stood apart from his fellow. He had no interest in common except as a rival to outbid another in a descending scale of miserable pittance, called "wages," for decidedly inferior services. The very class of persons employed as teachers in these days forbade the idea of a gathering together for the purpose of mutual counsel on the subject of teaching, or rather of discussing the manifold question of "how to teach." Those men who had failed in every other pursuit of life, and who were not yet utterly discouraged, were sure to adopt teaching as a *demier ressort*; every old soldier, whose standard of discipline was derived more or less from the practice of an indiscriminate tyranny in a barrack room, was considered the ideal of a man who would be successful in maintaining "order" in school. Beyond this, and the monotonous drill then in vogue of the rote system in mastering the three R's, no one aspired to go; or, if he did, and ventured to suggest the desirability or wisdom of a teacher availing himself of the German system of Normal School training for his work, he would have been considered as conspiring to undermine the time-honored institutions of learning in the land, or as plotting to introduce into the country an uncontrolled system of "Prussian despotism." But these days, with their characteristics of inefficiency and unreasoning severity, have happily passed away, and with them the reproach of persistent ignorance of the details of a calling which, for its successful prosecution, requires the combination of many rare qualities, with that of an intelligent discrimination of character, and a ready tact in the art of governing children.

Notwithstanding our educational progress, the efforts put forth to get teachers together, so as to induce them to feel a common interest in their work, have, after all, been attended with far greater difficulty than was at first apprehended. This arose chiefly from two causes: First, teachers had never regarded their calling "a profession." It was an "occupation," it was true, one which could be taken up at any time and as readily relinquished for something else. It required, as was often asserted, no particular kind of preparation, and none was demanded by employers. Not only was a person who had received no professional training as a teacher acceptable to many trustees, but in some of our cities and towns a marked preference was actually given, down to a late date, to teachers who had never been trained in a Normal School at all! A smattering of "book learning" of the most elementary kind was, in the estimation of the teacher himself, all that was necessary; while with many trustees a very modest demand for remuneration, coupled with ability to wield a "rattan," or a "blue beech," or a "hickory" with promptitude, and impartially on defiant or timid boys alike, were indispensable qualifications. Such were some of the traditions of the "calling," which had to be swept away, or entirely ignored, before even the first step could be taken towards organizing the profession of teaching.

The second barrier encountered in the organization of the profession was the fugitive character of its members. This difficulty still exists, and will always exist more or less, but is modified, and, under the new regulations, greatly lessened. But before the present periods of service between the grades of the certificate were fixed, teaching at any stage was considered a mere stepping stone to something else. Many persons came formerly to the Normal School merely to get a cheap and good education, so as to enable them the more readily, within a short time, to prepare for the legal and medical professions, and even for the sacred ministry.* Hence there was no substantial permanency in the profession, and there could be none while the process of disintegration in it went

on so rapidly. This drain on the profession was rather promoted than otherwise by the facilities for merely scholastic education, instead of purely professional training, which the Normal School, in common with High Schools and Collegiate Institutes, afforded. The persistence with which teachers some years ago resisted the idea of placing the Superannuation Fund on a co-operative and satisfactory basis was an outgrowth of this state of things, and showed how strong was the opposition, especially of younger teachers, to this incident of the organization of their "calling" into a permanent and recognized profession. They did not desire to follow the profession, and hence this opposition was justified on two grounds:—1st, that the "subscription" impost was "forced" and therefore "tyrannical"; 2nd, and chiefly, that the opponents to the scheme never expected to avail themselves of the benefits of the fund. This opposition has since given place to an enlightened appreciation of the benevolence of the provision for the superannuation of worn-out teachers. The next step, taken some years ago, with a view to promote a professional *esprit*, and to encourage the professional intercourse of teachers with one another, was the adoption of a regulation, giving to teachers the right, without loss of salary, to devote a week in each year to visiting other schools, so as to observe the best methods of teaching pursued therein, with a view to profit by the experience gained by other and older teachers. Provision was also made many years ago for the establishment of teachers' purely professional libraries in the various counties. The final step taken in the direction of building up the profession and cementing its members together for the promotion of a common interest was the adoption, as a recognized part of our educational system, of the law and regulations relating to Teachers' Associations. This would have been comparatively useless had not provision been previously made for the elementary and higher professional training of teachers for the various grades of certificates; for their employment and protection as "public officers" (*vide regulations*), and for their conditional superannuation at any time, if disabled while teaching, and their non-conditional superannuation at 60 years of age. The right of the teacher to payment for holidays and vacations has also been secured to him by statute, as well as provision for the payment of his salary during illness up to a certain time and beyond it, at the pleasure of trustees.

A point thus was reached when the intercourse of teachers with one another could be made pleasant and profitable. The profession itself has now been finally organized, and it has at length a distinct and legally recognized status in our educational system.

The policy of the Department in these matters has been for very many years both fostering and paternal in its character. It was felt that the boy was no less the "father of the man" than was the school the creature, or rather the creation, of the teacher. It was also felt to be essential to the efficiency of our schools that teachers should not only be educated but systematically trained for and in every grade of their profession; that their interests should not only be protected while under engagement with trustees, but that they should be assured of their right, without diminution of salary, to enjoy holidays and vacations; and also to be paid when laid aside by sickness; but they should without similar loss have a right as individuals to see how their more skilful brethren conducted their schools and administered discipline; and that collectively they should have the right and opportunity of meeting together (under the experienced presidency of their Inspectors) and of comparing notes and discussing, as well as illustrating in various ways, the many-sided questions of practical education, which constantly present themselves as problems to the younger teachers.

From these remarks it will be seen that the Education Department has, during the last twenty years, even more than done its part in organizing the profession of teaching, and of giving it a dis-

* I do not say that by this change the country suffered a wrong; but while it gained, the teaching profession suffered serious loss.

tinct and even a privileged status in our educational system. The maintenance of that status in the future must depend upon the teachers themselves. They should organize township and county associations where none exist, and in them meet together and discuss questions of professional and practical interest—taking care to exclude political and other improper and unprofitable subjects.

To do this effectively, however, they must be students of their profession. They should freely consult works in the "Teachers' Library" of standard authorization on technical and practical subjects, as well as mutually avail themselves of their own experience and that of other teachers. There should be no lukewarmness in this matter, or holding back; and no appeals to the Department should be necessary to make attendance at the County Conventions compulsory. I should deprecate compulsion in such matters. The object of such gatherings is so eminently useful and practical that every teacher desirous of succeeding in his profession cannot fail to see the desirability of his joining an association and working heartily with it. In this way greater life and spirit will be infused into the associations; the Inspectors will be encouraged in their arduous work; and the teachers themselves will be inspired and encouraged and be able to gather up for future use many useful hints, which, if acted upon, will render much lighter their often unappreciated and laborious, though honourable duty of teaching the youth of our land.

To the Editor of the Canada School Journal.

SIR,—I have the honor to state that the Ottawa Public School Board, at its last meeting, decided to request you to publish the accompanying correspondence. I have the honor to be
Your obedient Servant,

Wm. RAE, Sec. P. S. Board.

To the Hon. A. Crooks, Minister of Education, Toronto.

SIR,—I have been charged by the Board of Public School Trustees of this city to bring under your notice an instance of flagrant violation of agreement on the part of a First-class Teacher, and to submit it to your judgment whether it would not be in the interest of Public Education that legal power should be taken by the Minister to suspend the Certificates of Teachers so offending, or of otherwise dealing with them so as to check the repetition of such breaches of faith and honor. The Board is of course aware that they have a remedy in law, and might, if they chose, compel the recalcitrant party to the fulfillment of his covenanted obligations, but they very much doubt whether it would be for the advantage of their schools to have in their employment unwilling teachers, acting under legal coercion; and besides, they are of opinion that were it understood that Teachers acting in this unprincipled manner could be summarily brought to order, occasion would seldom be given to the Minister to exert his authority. And here—as I have been instructed to make this letter public—I may suggest it to Boards of School Trustees generally, whether it would not be expedient, before they engage teachers, and especially highly certificated ones, to require from them a declaration that they have not already engaged their services elsewhere. I deem it proper to make this suggestion, as the instance I am about to give is the fourth, within twelve months, of teachers of superior grade, who, after hiring themselves to the Board at Ottawa, played them false, because after their engagements they were offered larger emoluments by other Boards, the offers being no doubt stimulated by the consideration that our Board had accepted their services.

On the 15th of November, 1878, the Committee of School Management received, among other applications, one from Mr. H. D. Johnson for employment as Teacher, and after consideration decided to engage him at a salary of seven hundred and fifty dollars per annum. The Secretary was instructed to inform him of his appointment, and at the same time to send him the regular form of agreement to be signed. Mr. Johnson replied as under (Letter No. 1), and returned the agreement with his signature affixed, so that the Committee regarded the matter as satisfactorily settled. But a short time afterwards, the Secretary received the communication (marked No. 2), also annexed, and the Committee were compelled to look out for another supply.

(COPY OF LETTER NO. 1).

PARKHILL, Nov. 18, 1878.

Wm. Rae, Esq., Ottawa, Ont.

DEAR SIR,—Enclosed please find the agreement signed as requested. I am yours truly,

(Signed) H. D. JOHNSON.

(COPY OF LETTER NO. 2).

PARKHILL, Nov. 27th, 1878.

Wm. Rae, Esq., Ottawa, Ont.

DEAR SIR,—Please inform the Board of Education that I wish to have the agreement between us cancelled, as I have the offer of a position in the Strathroy High School at eight hundred. I hope that it will not incommode the Board, and that they will comply with my request, as it will be a decided advantage to me.

Yours, &c.,

(Signed) H. D. JOHNSON.

Trusting that you may deem this matter worthy of your attention, and that it may lead to some Departmental action which will counteract the growing evil complained of,

I have the honor to be, Sir,

Your obedient Servant,

P. LÉVESQUE,

Chairman School Management Committee.

SUPERANNUATION.

To the Editor of the Canada School Journal.

SIR,—In the last number of the SCHOOL JOURNAL you very properly direct attention to the regulation granting an extra superannuation allowance to certain teachers on retiring from the profession. The injustice of excluding those to whom you refer is so palpable that the only charitable inference to be drawn is that some mistake was made when the law was altered to its present form. If teachers holding permanent County Board certificates, grade A, have passed three successful examinations, at intervals of five years, taking the highest possible standing the law allowed at the time, can there be any good reason that they should not be placed on an equality with other first class teachers? When Normal School Provincial certificates were first issued their value was not higher than those granted by the County Boards, yet second class teachers of that date now rank as provincial teachers and are entitled to the extra allowance, while first class County Board teachers of the highest grade are excluded. It must be recollected also that teachers holding Normal School certificates were examined by their own teachers, while County Board teachers were examined by disinterested examiners, who, at least in the cities and towns, were gentlemen of high scholastic attainments. Again, the present law compels all male teachers to contribute equally to the superannuation fund while engaged in teaching, but the allowance to provincial teachers is made one-sixth greater than to others.

How would a similar regulation be regarded if applied to the members of other professions? If a clergyman, for instance, were to suffer a reduction of one-sixth of his superannuation allowance because he commenced his work a few years earlier than his more fortunate because more youthful colleagues, the anomaly would be at once apparent. The graduate of University College of 1858 would consider himself unfairly treated were he debarred from privileges enjoyed by graduates of 1878, because the standard of graduation has been raised in the meantime. Would it not be manifestly unfair that a solicitor of thirty years' standing should be made ineligible for a seat on the bench because the law curriculum in his day comprised a more limited range of subjects than at the present time? It is certainly not in accordance with British practice to deprive tried and faithful servants of their rights because they are getting old and are not in a position to push their claims. I trust the days of petty professional jealousy between the two classes of teachers have passed away, and that justice will be done to those veterans who have contributed so largely to the interests of education, and who are still doing good work in our public and high schools.

You suggest that those directly interested should take steps to bring the matter before the Minister of Education. This would undoubtedly be the proper course; but they are so widely scattered throughout the province that it would be difficult for them to meet together or to act unitedly. Is it not sufficient that the Minister of Education be made aware of the disabilities under which they labor in order to ensure a prompt and effectual remedy? I would suggest, as the simplest plan, that all permanent County Board certificates of the first class grade A be made provincial. Their number is but small and is constantly diminishing, and no additions can be made to them in the future. Yours, &c.,

VETERAN.

SUPERANNATED TEACHERS.

To the Editor of the Canada School Journal.

SIR,—I trust the time is not far distant when the regulations relating to superannuated teachers will, by the Government of the day, with the advice of the Minister of Education, be radically changed. To-day many of the pioneer teachers of the country are in destitute circumstances, and soon many of us now in active work will be compelled to join the list because living is high, salaries are low, and the superannuation allowance is insufficient. In this case it makes but little difference whether the certificate held is Provincial or County Board, the worn-out pioneer teachers of this country should receive a competent retiring allowance in their old age. Why not give superannuated teachers salaries after a definite number of years of active service, as is done in some other countries? The amount of salary could be determined either by the certificate held or by taking the average of the salary received during the last six years of active service. These men have not served their country in arms, it is true; but they have rendered nobler and far more enduring service, and I am mistaken if this country is unwilling to give them sufficient support in old age. As the subject has been opened, I trust it will be thoroughly discussed.

Yours truly, J. D., Windsor.

To the Editor of the Canada School Journal.

DEAR SIR,—I have just read an article in the Dec. No. of the C. S. J. in regard to superannuated teachers, and heartily concur with the sentiments therein advanced in reference to the claims of holders of First Class County Board Certificates. A great part of the best public school work, before 1871, was done by these men, and what they are still doing would not be unduly exalted by placing it in the second rank, their lack of professional training being made up by their great experience. They are, therefore, fairly entitled to be placed on the same level as the holders of Second Class Provincial Certificates. Many of these men spent the best of their days in the public service, when the remuneration of teachers was much less than it is now, and had but scant opportunity of providing for declining years. Benevolence and strict justice require a liberal reconsideration of their case.

But the Superannuated Fund needs a little more reform than this. The salaries of teachers vary much. This is on account of the difference in the value of the services rendered. Is there any valid reason why the payments to the S. Fund and the pensions received from it should not vary accordingly? It would not be far from the mark to say that the salaries of First, Second, and Third Class Teachers vary as the numbers 4, 3, and 2. According to this view of the case, holders of First Class Certificates should pay in \$8.00 and receive \$12.00; Second Class should pay \$6.00 and receive \$9.00; Third Class should pay \$4.00 and receive \$6.00 per annum for each year of service, or some such scale. Both reason and precedent are in favor of such a course, if I mistake not.

Hoping to hear from others on the subject, and that action may be speedily taken to bring the matter before the proper authority, I remain yours truly, A. B.

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.

DECEMBER EXAMINATIONS, 1878.

SECOND CLASS TEACHERS AND INTERMEDIATE.

ARITHMETIC.

TIME—THREE HOURS.

Examiner—J. A. McLELLAN, LL.D.

NOTE—Ten marks allowed for each question.

1. Show that $\frac{1}{2}$ of $1 = \frac{1}{2}$ of 4.

Simplify

$$\left\{ \frac{1}{2} \left(\frac{4\frac{1}{2} \text{ of } 6\frac{3}{4}}{7\frac{3}{4}} \right) \div \frac{3\frac{3}{4} + 2\frac{1}{8}}{3\frac{3}{4} - 5\frac{1}{8}} \right\} \text{ of } \pounds 182 \text{ 7s. 5d.}$$

2. Prove the principle on which the rule for finding the G.C.M. of two quantities depends.

Find the G.C.M. of 169087 and 66429, and the L.C.M. of 44, 48, 52, 96.

3. Define Ratio. Show how to find a fourth proportional to three given numbers,

A grocer has 224 lbs. of a mixture of chicory and coffee, the chicory being to the coffee as 1 : 6; what amount of chicory must be added to make the ratio 1 : 5?

4. A cistern (no lid) whose floor and walls are an inch and a-half thick, is 5 ft. 8 in. long, 8 ft. 7 in. wide, and 2 ft. 5½ in. high, in external dimensions; find the cost of painting the internal surface at 90 cents per square yard.

5. Perform the following operation:— 058407×047126 to six places of decimals; and $2.569141797 \div 7.5284$ to five places of decimals. (Ten marks to be allowed if done by the contracted method; 5 marks for correct answer obtained in any other way.)

6. A note for \$780, drawn at 90 days and bearing interest at 8% per annum, is discounted by a broker 45 days before maturity; what must the broker pay for the note in order to realize 10% for his money? (No days grace.)

7. A discount (true discount) of \$4 was allowed on a bill of \$52 that had 8 months to run, and at the same rate a discount of \$5 was allowed on a bill of \$75; how long had the latter bill to run?

8. A grocer mixed coffee at 28 cents a pound with some of a better kind at 42 cents a pound, and by selling the mixture at 35 cents a pound he gained 15% on the former and 20% on the latter; in what proportion did he mix them?

9. A vat 4 ft. long, 8 ft. wide, and 9 inches deep, contains pulp for making paper; a percentage of the pulp is lost in drying, and a sheet of paper 2700 yards long, 2 ft. 6 in. wide and .004 of an inch thick, is obtained; what per cent of the pulp was lost in drying?

10. Find the area of a trapezoid whose parallel sides are 27.5 and 38.5 chains respectively, and whose other sides are 12.5 and 15.5 chains respectively.

ARITHMETIC, SOLUTIONS.

1. (1) See Mental Arithmetic.

(2) Fraction = $\frac{1}{2}$ of $4\frac{1}{2} \times 2\frac{3}{4} \times 2\frac{1}{2} \times 1\frac{3}{4} \times \frac{3}{4} = 7\frac{1}{2}$; and $\frac{1}{7\frac{1}{2}}$ of $\pounds 182 \text{ 7s. 5d.} = 7 \times (\pounds 1 \text{ 1s. 1d.}) = \pounds 7 \text{ 7s. 7d.}$

2. (1) See text-book.

(2) G. C. M. = 121. L. C. M. = $4 \times 11 \times 13 \times 24$.

3. (1) Text-book. (2) Chic. = $\frac{1}{2}$ of 224 = 82; coffee = 192; which, after ch. is added, = 5 times ch.; \therefore ch. = 88½; $88\frac{1}{2} - 82 = 6\frac{1}{2}$ lbs. added.

4. Internal dimensions are 5 ft., 8½ ft., 2½ ft. \therefore cost = $8\frac{1}{2} \times 5 \times 2\frac{1}{2} \times (2 \times 5 + 2 \times 8\frac{1}{2}) \times 2\frac{1}{2} \times \frac{1}{10} = \pounds 5\frac{1}{2}$.

5. See Hamblin Smith's Arithmetic.

6. Amount of note for 90 days = \$744½. Broker is to make $\frac{1}{10}$ of his money in 1 year; \therefore $\frac{1}{10}$ of it in 45 days (= $\frac{1}{20}$ of a year). \therefore $\frac{1}{20}$ of what he pays = \$744½. Ans. \$785.46 +

7. In first case disc. = $\frac{1}{12}$ of amt., Int. = $\frac{1}{12}$; in second case, Int. = $\frac{1}{12}$; $\frac{1}{12}$ for 8 months. \therefore $\frac{1}{12}$ for $8 \times 12 \div 14 = 6\frac{2}{7}$ months.

8. 28c + 15% of it = 32½; 42c + 20% of it = 50½; 1 lb. of former sold at 85 cts. gives gain $2\frac{1}{2} = \frac{1}{4}$; 1 lb. of latter sold at 85 cts. gives loss $15\frac{1}{2} = \frac{3}{4}$; \therefore they must be mixed in proportion, 77 of former : 14 of latter = 11 : 2.

9. Pulp = $4 \times 8 \times \frac{1}{4} = 9$ cubic feet; paper = $8100 \times 2\frac{1}{2} \times \frac{1}{1000} = 6\frac{1}{2}$ cubic ft.; \therefore loss = $9 - 6\frac{1}{2} = 2\frac{1}{2}$, which is 25% of 9.

10. First find perpendicular dist. of parallel sides; figure is made up of a parallelogram and a triangle whose three sides are 12.5, 15.5, 11, and whose area \therefore is $\sqrt{4641}$; this divided by $\frac{1}{2}$ (half the base) = $\frac{2\sqrt{4641}}{11}$ = perpendicular required; then half sum of parallel sides = 88; \therefore area = $\frac{2\sqrt{4641}}{11} \times 88 = 6\sqrt{4641}$.

ALGEBRA.

TIME—TWO HOURS AND A HALF.

Examiner—J. A. McLELLAN, LL.D.

NOTE.—Candidates, in order to pass, must make at least 20 marks on this paper, and at least 120 marks on the group—Arithmetic, Algebra and Euclid.

Values.

- 7 1. Multiply $4x^2 - \frac{1}{2}x + \frac{1}{8}$ by $2x + \frac{1}{4}$. $8x^3 + \frac{1}{125}$
 Prove that $(\frac{1}{2}x - y)^3 - (x - \frac{1}{2}y)^3$ is exactly divisible by $x + y$.
 7 2. Express in words the meaning of the formulæ $(x+a)(x+b) = x^2 + (a+b)x + ab$.
 Retaining the order of the terms, how will the right-handed member of this expression be affected by changing, in the left-hand member (1) the sign of b only, (2) the sign of a only, (3) the signs of both a and b ?
 10 8. Simplify $(a+b)^4 + (a-b)^4 - 2(a^2 - b^2)^2$; and show that $(a+b+c)(b+c-a)(a+c-b)(a+b-c) = 4a^2b^2$ when $a^2 + b^2 = c^2$.
 10 4. Prove that $\frac{a}{b} \div \frac{c}{d} = \frac{ad}{bc}$.
 Simplify $(\frac{a^2+b^2}{2ab} + 1) (\frac{ab^2}{a^3+b^3}) \div \frac{4a(a+b)}{a-ab^2+b^2} = \frac{b}{8a}$
 10 5. I went from Toronto to Niagara, 35 miles, in the steamer "City of Toronto" and returned in the "Rothsay," making the round trip in 5 hours and 15 minutes; on another occasion I went in the "Rothsay," (whose speed on this occasion was 1 mile an hour less than usual), from Toronto to Lewiston, 42 miles, and returned in the "City of Toronto," making the round trip in 6 hours and 30 minutes; find the usual rates per hour which these steamers make.

10 6. Define a surd. What are similar surds?
 Simplify $\sqrt{12} + \sqrt{48} - 2\sqrt{3}$; $\sqrt{56} + \sqrt{189}$; $= 2\sqrt{14} + 3\sqrt{7}$
 $a\sqrt{a} - b\sqrt{b}(\sqrt{a-b})(a + \sqrt{ab} + b)$; $(x^2 + xy + y^2) \div (x + x^{\frac{1}{2}}y^{\frac{1}{2}} + y)$

7. Solve

8	2	1
x	y	a
2	1	2
x	y	a

$x = \frac{a}{3}$
 $y = \frac{a}{4}$

- 8 8. Find three consecutive numbers whose product is 48 times the middle number. $6, 7, 8$.
 14 9. If a and b are the roots of $ax^2 + bx + c = 0$ then $a(x-a)(x-b) = 0$.
 Show that if $ax^2 + bx + c = 0$ has equal roots, one of them is given by the equation $(2a^2 - 2ab)x + ab - b^2 = 0$.
 14 10. If $\frac{m}{x} = \frac{n}{y}$ and $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$, prove that $\frac{m^2}{a^2} + \frac{n^2}{b^2} = \frac{m^2 + n^2}{x^2 + y^2}$

ALGEBRA, SOLUTIONS.

1. (1) Product is $8x^3 + \frac{1}{125}$.
 (2) The difference of the same powers is divisible by the difference of the quantities—i. e., in this case by $-\frac{1}{2}(x+y)$. Or, putting $x+y=0$, the expression becomes 0, and \therefore is divisible by $x+y$.
 8. (1) The expression $= \{(a+b)^2 - (a-b)^2\}^2 = (4ab)^2 = 16a^2b^2$.
 (2) The expression $= \{(a+b)^2 - c^2\} \{c^2 - (a-b)^2\} = (c+2ab - c^2)(c^2 - c^2 + 2ab) = 4a^2b^2$.
 4. (1) See Hamblin Smith's Algebra, page 85.
 (2) $\frac{(a+b)^2}{2ab} \times \frac{ab^2}{a^2+b^3} \times \frac{a^2-ab+b^2}{4a(a+b)} = \frac{b}{8a}$
 5. Let $x =$ rate of the C. of T., y that of the R.; then $\frac{85}{x} + \frac{85}{y} = 5\frac{1}{2}$,
 $\frac{42}{x} + \frac{42}{y-1} = 6\frac{1}{2}$; \therefore
 $\frac{42}{y-1} - \frac{42}{y} = \frac{1}{5}$; $y = 15, x = 12$.

6. (1) See text-book. $6\sqrt{3}$; $2\sqrt{14+8^2}/7$; $a^{\frac{1}{2}} - b^{\frac{1}{2}}$; $x - x^{\frac{1}{2}}y^{\frac{1}{2}} + y$.
 7. (1) Multiply 2nd equation by 2, subtract 1st from result, then $\frac{1}{x} = \frac{8}{a}$ $x = \frac{1}{3}a$, and $\therefore y = \frac{1}{4}a$.
 (8) Adding 28 to both sides, $x^2 + 5x + 28 - 5\sqrt{x^2 + 5x + 28} = 24$
 a quadratic in $\sqrt{x^2 + 5x + 28}$, which is found $= \frac{5 + 11}{2}$
 and $x = -\frac{5 + 13}{2} = -9$.
 8. Let $x =$ middle number, then $(x-1) \times x \times (x+1) = 48x \therefore x^2 - 1 = 48x = 7$.
 9. (1) See H. Smith's Algebra, § 328.
 (2) From 1st equation $x = -\frac{b}{2a} - \frac{b}{2a} \sqrt{b^2 - 4ac}$; condition of equal roots is $b^2 - 4ac = 0 \therefore x = -\frac{b}{2a}$ which is found to be the value of x in the second equation.

10. We have $\frac{m^2}{x^2} = \frac{n^2}{y^2}$, multiplying 2nd condition by these equals,
 we have $\frac{x^2}{a^2} \times \frac{m^2}{x^2} + \frac{y^2}{b^2} \times \frac{n^2}{y^2} = \frac{m^2}{x^2} + \frac{n^2}{y^2} = \frac{m^2 + n^2}{x^2 + y^2}$
 or $\frac{m^2}{a^2} + \frac{n^2}{b^2} = \frac{m^2 + n^2}{x^2 + y^2}$.

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.

- 5 1. Enunciate the parallelogram of forces.
 5 Deduce from it the triangle of forces.
 10 A weight of 100 lbs. rests on a smooth plane inclined at 30° to the horizontal, and is prevented from slipping by a cord rising at 80° to the plane (60° to the horizontal). Find the tension on the cord and the pressure on the plane.
 8 2. Show how to find the resultant in magnitude and position of two unequal parallel forces acting in opposite directions.
 10 10. A uniform rigid plank, 15 ft. long, weighing 150 lbs., rests in a horizontal position on two benches, the one bench being two feet from one end of the plank, the other bench being three feet from the other end. Find the pressures on the benches.
 3 8. If forces be represented by lines how must moments be represented? Why?
 5 If 200 lbs. at one end of a plank balance it across a bench, 120 lbs. at the same end, when the bench is removed 2 feet, and 60 lbs. when it is removed 4 feet farther from that end; find the weight of the plank.
 5 4. Enunciate the principle of virtual velocities.
 A horse walks 150 feet, and by means of a rope and pulleys raises a weight of 1250 lbs. to a height of 18 feet. Were there neither friction of pulleys nor rigidity of cords, how many pounds would the horse have to pull?
 5 5. Enunciate the laws of fluid pressure.
 10, 10 A cubical vessel, whose edge inside is three inches long, is placed on a horizontal table. Into its upper face is let, perpendicularly, a straight tube, which rises to a height of 27 inches above the face, the internal cross-section of the tube being one square inch. Vessel and tube are filled with water. Find the pressure on the bottom of the vessel, also the pressure on the table due to the water. (A cubic foot of water weighs 1000 ounces.)
 6, 8 6. Describe the barometer. Explain the principle of its action.
 10 What height of atmosphere, weighing 1.2916 oz. to the

cubic foot, would balance a 80-inch column in a mercury barometer, the specific gravity of mercury being 13.596, (water = 1)?

NATURAL PHILOSOPHY, SOLUTIONS.

1. Constructing a triangle whose sides are parallel to the three forces (weight, reaction of plane, and tension of string), we shall find that these sides are as $\sqrt{3} : 1 : 1$; i.e., $\frac{100}{\sqrt{3}} = \frac{T}{1} = \frac{R}{1}$.

2. The cr. of gr. is at distances $5\frac{1}{2}$ and $4\frac{1}{2}$ ft. from the supports. Taking moments about the point of support nearer the end of the bench, we have (if P be the pressure on the other support) $150 \times 5\frac{1}{2} = P \times 10$; $\therefore P = 82\frac{1}{2}$ lbs.; \therefore pressure on other bench = $67\frac{1}{2}$ lbs.

3. Let W be the weight of the plank, a and b the distances of the support from the centre of gravity of the beam, and the end to which the 200 lbs. is attached. Then $200b = Wa$, $120(b + 2) = W(a - 2)$, $60(b + 4) = W(a - 4)$; whence $W = 360$ lbs.

4. The horse is supposed (doubtless) to walk in the direction in which the rope is stretched; then by principle of virt. vels., the horse pulls (in lbs.) $\frac{1250 \times 18}{150} = 150$.

5. In accordance with law of fld. press., the press. on bottom equals wt. of a column of water whose base is 9 sq. in. and ht. 30 in. $= \frac{9 \times 30}{1728} \times 1000$ oz. = $156\frac{1}{4}$ oz. Press. on table due to water equals wt. of water = wt. of 27 + 27 cub. in. of water = $\frac{54}{1728} \times 1000 = 31\frac{1}{4}$ oz.

6. Let x = ht. of atmosphere in ft.; then press. of air on a sq. ft. = $x \times 1.2916$ oz. Also press. of the column of mercury 30 in. high on a sq. ft. = $\frac{3}{4} \times 1000 \times 13.596$ oz.; and equilibrium requires these to be equal; $\therefore x = \frac{\frac{3}{4} \times 1000 \times 13.596}{1.2916} = 26316$ ft.

Mr. Shaw, of Barrington, N.S., has slightly modified his windmill problem (November issue of *Journal*) so as to read as follows: I have a windmill ten feet in diameter with eight blades 8 ft 9 in. at one end and 9 in. at the other, and 4 ft. long. At what angle to the course of the wind must the blades be placed on their arms to have the greatest effect; what will be the power exerted on the cog wheel two feet in diameter; and at what proportion of one horse power could it be rated? The wind is supposed to be blowing at the rate of 15 miles per hour, and then exerting a pressure of one pound to the square foot.

Prof. Galbraith of the School of Practical Science, Toronto, sends the following notes on the problem:

Rankine's formulæ for windmills of the old style with sails of the best form is, horse power = $\frac{.022}{550} \cdot \frac{v^2}{2g} \cdot \pi r^2$, where v = vel. of wind in ft. per second, g = 32.2, $\pi = 2^2$, r = radius of wheel in feet. In the present case v = 22, r = 5, and the horse power of the wheel (allowing for the friction of the axle) if the wheel were of the best design of the old style would be

$$\frac{.022 \times 22^2 \times 22 \times 5^2}{2 \times 32.2 \times 7} = .5 \text{ horse power.}$$

The weather of the sails, i.e., the inclination of the sail to a plane perpendicular to the axis of the wheel varies from 7° at the tip of the sail to about 19° at the inner end in this wheel. These inclinations were found to give the best effect. So that about 18° would probably be the best weather to give to Mr. Shaw's mill, the sails apparently being flat boards.

It is impossible to say, without actual experiment, what the horse-power of Mr. Shaw's mill would be with a given velocity of wind. The above results are given as having been determined by experiment on wheels of the old design, so that he may judge for himself the comparative efficiency of his wheel.

Rankine gives us a principle of construction that, for a given wind velocity, the weather to be given to any part of the sail must vary with the rate of motion of that part of the wheel, in certain proportions, in order that the wheel may be most effective; and the rule is that (within certain limits) the greater the velocity of any part of the sail, the less the weather should be—e.g., since the tip of a wheel must move faster than the centre, the weather at the tip should be less than that at the centre. The whole sail should also have a slightly concave surface.

The above wheel, if of the old style, with sails designed as above, would exert a pressure of about 26 lbs. on the teeth of a bevel wheel 2 feet in diameter, on the shaft of the wheel when transmitting half a horse-power.

Mr. Shaw, of Kemble, sends the following direct proof of Prop. 25, Bk. I. Let ABC, DEF be the two triangles, having BA, AC equal to ED, DF respectively, but the base BC greater than EF. Place DEF so that E rests on B and EF and BC, and let the point D be on the side of the base away from A. Join AD, DC. Of the two sides AB, AC let AB be the one which is not greater than the other. Then the angle DFB is not greater than DBF; but DFC is greater than DBF; therefore DFC is greater than DFB, and much more than DCF. Hence DC is greater than DF, and therefore than CA, and the angle CAD is greater than CDA. Also the angle BAD is equal to the angle BDA. Therefore the whole angle BAC is greater than BDC and therefore than BDF. If AD cuts CB produced, the proof will be similar; the angles BAD, BDA are then to be taken away.

For Prob. 1, Dec. number, the result is tan (angle of incidence)

$$= \frac{e^2}{\sqrt{1 + e + e^2}}; \text{ solution by Mr. Shaw, Kemble.}$$

The answer to Prob. 2 in our last issue is 30 $\frac{1}{4}$ minutes past 4 o'clock; solution by Mr. Phelps of Woodstock.

The answer to Prob. 8 in our last issue is 19 oxen; arithmetical solution by Mr. Anderson, Mimico; algebraic solutions by Messrs. S. Phelps, Woodstock; L. H. Luck, Crown Hill; and M. L. Nutting, Oshawa.

Problem 8 in Dec. number was, as "Farmer" subsequently informed us, intended to receive a geometrical solution. Mr. Shaw, of Kemble, has sent in a trigonometrical solution, the result being 63.28. Mr. Nutting has inadvertently taken the inscribed circle for the circumscribed.

Mr. Nutting has also sent a correct solution of Prob. 1 in Nov. number.

Want of space prevents us from giving any of the above solutions.

Practical Department.

CONVERSATIONAL COLUMN.

We have received the following lines from Mr. William Anderson, English Master, Toronto Collegiate Institute. They were written in school during the composition hour, as an example of anti-climax by one of his pupils:

The silvery moon is sailing in the vault above,
The glimmering stars remote look down with eyes of love,
The breeze that cools my forehead's feverish heat
Is laden with a perfume rare and sweet;
And Philomela's distant Ave Marie,
Comes floating softly o'er the vale to me.
Now would I sleep, nor think on human woes,
Did not the gout with pain distract my toes.

T. M.

As competitive township and county examinations are being held in many parts of the country, we publish below the regulations for the competitive examination held in the township of Beckwith, Dec. 27th, 1878:

1. The Examination will be held in the Town Hall on Friday, Dec. 27th, beginning punctually at 9 o'clock a.m.
2. All pupils resident in the Township, and who have attended at least eighty days during the year, are eligible for examination. In the case of union school sections, Beckwith pupils only to be admitted.
3. Each Teacher is entitled to present three pupils out of each of the Second, Third, Fourth and Fifth classes. The classes correspond with the Readers.
4. The Examination will be conducted in accordance with the "Official Programme" now in use in the schools.
5. No pupils to be examined in the same classes as at any previous Competitive Examination, and all pupils who have passed the Entrance Examination to High Schools, and who are attending any of the Public Schools, must be examined in the Fifth Class.

6. The Subjects for Examination will be *Reading, Writing, Spelling, Arithmetic, Grammar, Geography, and (if time admits) History, Composition, and Mental Arithmetic.*

7. Each Teacher must send in to the undersigned, on or before *Saturday, the 21st December*, a correct list of competitors.

8. No pupil is to be put back from his (or her) class to a lower one for the purposes of this Examination. If this, or any other irregularity, is detected, the pupil shall forfeit his right to compete.

9. Each candidate is to come provided with a slate and pencil and a reading book.

H. L. SLACK, M.A., F. P. S. Co. Lanark.

MISTAKES IN TEACHING.

No. III.

It is a mistake to try to teach too many points in a single lesson. Many teachers seem to think that their ability as teachers is to be measured by the extent of ground which they can cover in a lesson. They reckon the progress of their scholars by the number of pages passed over. They measure the amount of their mathematical knowledge by the square yard. They forget that the pupils themselves have any part in the work of learning. The teacher gives, the pupils receive information. The result of the teaching depends much more on the receiving than the giving. It is measured, not by what the pupils hear, but by what they carry with them from the class-room, and apply in future life.

One of the most important words in the teacher's guide book is the word "repeat." "Practice makes perfect," and repetition makes remembrance. The facts stated by the teacher or drawn by him from the pupils should be repeated simultaneously by the class, and drilled upon persistently by the teacher, while the lesson is in progress. "Questioning in" is the grandest method of the trained and cultured teacher in teaching new facts or thoughts; "questioning out" is the only certain way of fastening them firmly in the mind. Drill when about three facts have been communicated, however simple they may be; then give three additional facts and drill over the six, and so on to the close of the lesson. This repetition drill should be more thorough towards the close of the lesson. It should be varied as much as possible. The answering should be partly simultaneous and partly individual, and always brisk and lively.

It is a mistake to think that one teaching of a subject will be sufficient. It is necessary not only to repeat, but to review. One of the most discouraging things in the experience of a young teacher is to find that a month after teaching a subject, his pupils seem to remember very little about it. He may have labored faithfully and skillfully to explain the mysteries of fractions, for instance; he may be proud, and justly proud, of his success; but if he rests satisfied with a fine explanation of the subject he will find to his great disappointment that he has been merely writing in the sand. He should have regular reviews at times marked on his time table, and in addition he should briefly review previous lessons before beginning a new one in any subject. The lesson of yesterday should be reviewed before beginning the lesson of to-day. It is only by thus repeating and reviewing that permanent impressions can be made.

PSYCHOLOGY IN NORMAL SCHOOLS.

We have before confessed, regretfully, in these columns, that we in Ontario were behind European nations and the United States in the nature and extent of the strictly educational work done in our Normal Schools. They are good, perhaps unsurpassed, as far as they go. They do not go far enough in discussing the philosophy of the subject, for First Class teachers at any rate.

We publish below the outline of the lectures on Education and School Management given in the New Brunswick Normal School. It will be seen that Ontario will have to be on the alert if she desires to maintain her position as the "banner" province in educational matters.

SESSION I.—1. General view of the object of education—developing and strengthening of the physical, intellectual, and moral powers.

2. *Method.*—Its meaning. Two methods, the Synthetic and Analytic. The application of method to the elementary branches of instruction.

3. *School Organization.*—Classification. Principles and construction of Time Tables. School Registers, their uses, mode of keeping them and of making semi-annual Returns. The School System of New Brunswick.

4. *Discipline.*—Its meaning. The conditions necessary to ensure order. Theory of rewards and punishments.

5. Papers on professional subjects required of student-teachers at least monthly. Observation and practice in the Model Department. Criticism on practice of student-teachers.

SESSION II.—1. *Nature of the Being to be educated.* (1) Physical Nature. Education of the bodily organs and functions. Training to be on hygienic principles. (2) Intellectual nature. The basis of development, perception and intuition. Classification of the faculties of the mind. Nature of the faculties. The peculiar function and order of development of each. The methods of instruction adapted to each class of faculties. The subjects best suited for the cultivation of the different faculties. Illustrations. (3) Moral nature. Distinction between nature and character. Elements of character. Principles of moral training.

2. *School Organization and Discipline.*—A more minute examination of principles. The School System of New Brunswick.

3. Papers on professional subjects required of student-teachers at least monthly. Practice and observation in the Model Department weekly while in session. Criticism on the practice of student-teachers.

SESSION III.—1. *Uses of Psychology in Education.* The only proper basis for Method. Contracts between past and present modes of teaching the result of a study of child nature.

2. *History of Method.*—Educational Reformers. An examination and a comparison of their principles.

3. Papers on professional subjects required of student-teachers at least monthly. Extended observation and practice in the Model Department. Criticism continued.

MENTAL ARITHMETIC.

J. A. McLELLAN, M.A., LL.D.

VI.

Having been carefully drilled in the analysis of the numbers from 1 to 10, as illustrated in the two preceding articles, the pupil proceeds with the numbers 10 to 20. In the first place, he learns to count between these limits—not merely naming the words in consecutive order; but giving the name when he has acquired, through the "TRUSTY EYE," a clear notion of the number.

It is not imperative that the analysis of the numbers from 1 to 10 should be fully mastered before the pupil is permitted to begin the counting of higher numbers; it may be well, indeed, for the sake of greater variety in the exercises, to go on with counting, while the class is still being drilled in the analysis of the primary numbers. But, in any case, the counting must be from objects, that clear ideas of the numbers may be obtained, and that the

meaning of the words which stand for them may be fully comprehended.

The pupil, then, we will suppose is thoroughly master—through the methods already described—of the number 10. How do we then proceed? The balls are placed on the first wire of the numeral Frame (or marks on slate, &c.), then *one* ball is placed under the 10, on the second wire, making *eleven*; *two* balls are placed on the third wire (or in third row of marks, &c.) making, with the 10 on the first wire, *twelve*; *three* balls on the fourth wire, making *thirteen*; and so on, till we have 10 balls on the eleventh wire, making, with the 10 on the first wire, 20. This arrangement of the balls is adopted by many experienced teachers on the ground that it brings the several numbers and their relative values, as compared with 10, and with each other, more distinctly before the eye. Some, however, prefer to use but twenty balls, and these on two wires, which, on the whole, may be the more effective plan. Ten balls are placed on the first wire, representing the number with which the pupil is already familiar; then balls are placed one by one on the second wire, representing all the numbers from 11 to 20 inclusive. The pupil is first taught to name the numbers in consecutive order, and is then drilled in varying order till he is able to name any number of objects (within the given limits) which may be presented, and mark off the number of objects corresponding to any name. He is to be carefully taught the values of the several numbers as compared with 10, *e.g.*, 11 is *one* ten and 1, 12 is *one* ten and 2, 13 is *one* ten and 3, &c. He should also be taught (always with reference to objects) the relative values of the several numbers—as *e.g.*, $18 = 10 + 8 = 12 + 6$; $15 = 14 + 1 = 12 + 3 = 11 + 4$, &c. He is then to be thoroughly practised in addition and subtraction—the results, of course, not involving any number higher than 20: 10 and 1 are? 10 and 2 are? $2 + 10 = ?$ $3 + 10 = ?$ &c. $11 + 1 = ?$ $11 + 2 = ?$ $2 + 11 = ?$ &c.; $12 + 2 = ?$ $2 + 12 = ?$; $18 + 1 = ?$ $18 + 2 = ?$ $2 + 18 = ?$ &c., &c. Addition and subtraction should be taught together: 10 and 8 are 18, $18 - 8 = ?$ $13 - 10 = ?$ Let there be abundant drilling in the systematic formation of the tables: 1 and 2, 1 and 3, 1 and 4, &c.; 2 and 1, 2 and 3, 2 and 4, &c.; 3 and 1, 3 and 2, 3 and 3, 3 and 4, &c. Let the pupils also add by twos, threes, &c., merely giving the results, *e.g.*, 2, 4, 6, 8, 10 . . . 20; 1, 3, 5, 7 . . . 19; 2, 6, 10, 14, 18; 3, 6, 9, . . . 18, &c., &c. And let them subtract by twos, threes, &c., giving results merely: 20, 18, 16, &c.; 20, 17, 14, &c.; 12, 10, 8, &c. Then, as before described, let numerous problems be given: Harry has 6 marbles and buys 7 more, how many has he now? He has 13 marbles; he gives 7 to Willie, how many has he left? A boy spent 12 cents in candies and 8 cents in apples, how much did he spend? A boy had 15 cents, he gave three cents for a pencil, how much had he left? John has a twenty cent. piece, he buys a pencil at 2 cents and a slate at 12 cents, how much change is he to receive? To secure quickness and accuracy, there should be much individual and class drill in combination questions: 4 and 5 and 7 minus 3 minus 2 are how many? Take the number 6, add 7, subtract 3, add 5, add 4, subtract 11, what is the result? With thorough drilling of this kind a wonderful degree of quickness as well as accuracy may be attained—the pupils acquiring the power to think as rapidly as the teacher speaks, and giving the results almost simultaneously with the teacher's last word. This is, therefore, a most valuable exercise; those are wrong who say "no matter what time you take in the calculation, be accurate." Accuracy is indeed essential; rapidity is also essential; "slow and sure" is good, but quick and sure is infinitely better; to give the impression that it matters not what time is taken provided the result is correct, is to offer a premium on mental dawdling. Once more, pupils must be trained to accuracy, but equally they must be trained to rapidity in mental calcu-

lation, if the value of the science as knowledge, as well as its value in discipline, is to be fully secured.

(To be continued.)

Science Notes.

1. Why does crouching down at the highest point in a swing and standing up at the lowest point, increase the velocity?
2. A balloon is moving upward with a certain velocity;—a weight is suspended from the balloon with a string;—if the string be cut what will be the motion of the weight?
3. A ball is dropped at a height of 64 feet from the ground. At the same instant another ball is thrown upward vertically from the ground with sufficient velocity to carry it to the height of 64 feet. Where will the two balls pass each other?
4. Should a long rope be used in towing a canal boat by a steam-tug, the same as by a horse?
5. What difference would there be in the guinea-and-feather experiment, if air were forced into the long tube instead of being removed?
6. A piece of gold is in equilibrium with a piece of cork on the scales of a delicate balance. Afterward the cork is removed and tin is put in the scale pan to keep the gold in equilibrium. If the gold be now removed and the cork put in its place, will there still be an equilibrium?

FACTS ABOUT VENTILATION.—The average pupil vitiates .08 per cent., or 10.85 cu. ft. of air in one minute. In ten minutes he will require 108.5 cu. ft., and in twenty minutes, 209 cu. ft. The entire air in every school-room should be changed six times an hour, or every ten minutes. It is not fit for human beings to breathe unless it is changed at least three times every hour, or every twenty minutes. The best accidental ventilation changes the air four times an hour. There is a difference of opinion as to the per cent. of carbonic acid that may be habitually breathed without apparent injury. No authority allows more than .08 per cent., but many regard this quantity as injurious. Air that has been once in a healthy lung contains from three to five per cent. of carbonic acid, and in such air a candle will not burn. One per cent. in the air is beyond the limit of ordinary endurance, and one-tenth of this amount soon makes itself felt by persons whose sensibilities have not been blunted.

AN ANTIDOTE FOR STRYCHNINE.—According to some recent experiments of Dr. Lelli, detailed in the *Lancet*, strong coffee may be successfully used to counteract poisoning by strychnine. The experiments were made upon rabbits, and were tried in consequence of a reported instance of failure in an attempt to poison a family where strychnine had been introduced into the coffee-pot.

CURIOUS ITEMS.—If a tallow candle be placed in a gun and shot at a door, it will go through without sustaining injury; and if a musket ball be fired into the water, it will not only rebound, but be flattened; if fired through a pane of glass, it will make a hole the size of the ball without cracking the glass; if suspended by a thread it will make no difference, and the thread will not even vibrate. Cork, if sunk 200 feet in the ocean, will not rise on account of the pressure of the water. In the Arctic regions, when the thermometer is below zero, persons can converse more than a mile distant; Dr. Jamieson asserts that he heard every word of a sermon at a distance of two miles. We have written upon paper manufactured from iron, and have seen a book with leaves and binding of the same material.

INVISIBLE INK FOR POSTAL CARDS.—*The Illustrated Gewerbezeitung* proposes the use of what may be called "postal card ink," for messages which are sent on such cards or are otherwise unsealed. A solution of nitrate or chloride of cobalt, or chloride of copper, mixed with a little gum of sugar, produces a "magic ink," which is made visible by warming, either by holding against the stove or over a burning match. Potassium ferrocyanide in solution may also be used; but this requires a developer, for which either copper or iron sulphate may be employed. With the former the writing will appear in brown, and with the latter in blue color.

The above are from *Barnes' Educational Monthly*.

THE ADVANCE OF SCIENCE.—In all sciences, but especially in the higher and more complex departments, there are three distinct stages of advance: The first consists in the observation, collection,

and arrangement of facts—*descriptive science*. The second is the reduction of these to formal laws—*formal science*. It is this last change only which necessarily follows the order indicated above. Its effect is always to give great impulse to scientific advance; for then only does it take on the highest scientific form—then only does it become one of the hierarchy of sciences, and receives the aid of all. Thus to illustrate: Tycho Brahe laboriously gathered and collated a vast number of facts concerning planetary motions—*descriptive astronomy*. Kepler reduced these to the three great and beautiful laws known by his name—*formal astronomy*. But it was reserved for Newton, by means of the theory of gravitation, to explain the Keplerian laws by referring them to the more general and more fundamental laws of mechanics as their cause, and thus he became the founder of physical or causal astronomy. In other words, astronomy was first a separate science based on its own facts. Newton connected it with mechanics, and thus made it one of the hierarchy. From that time astronomy advanced with increased rapidity and certainty. Astronomy first rose as a beautiful shaft, unconnected and unsupported, except on its own pediment. In the meantime, however, another more solid and more central shaft had grown up under the busy hands of many builders, viz., mechanics. Newton connected the astronomical shaft with the central column of mechanics, and thus formed a more solid basis for a yet higher shaft.—*Prof. Joseph Le Conte, in Popular Science Monthly for January.*

WHERE RELIGION AND SCIENCE CLASH.—As poets the priesthood would have been justified; their deities, celestial and otherwise, with all their retinue and appliances, being more or less legitimate symbols and personifications of the aspects of Nature and the phases of the human soul. The priests, however, or those among them who were mechanics and not poets, claimed objective validity for their conceptions, and tried to base upon external evidence that which sprang from the innermost need and nature of man. It is against this objective rendering of the emotions—this thrusting into the region of fact and positive knowledge, of conceptions essentially ideal and poetic—that science, consciously or unconsciously, wages war. Religious feeling is as much a verity as any other part of human consciousness; and against it, on its subjective side, the waves of science beat in vain. But when, manipulated by the constructive imagination, mixed with imperfect or inaccurate historic data, and moulded by misapplied logic, this feeling traverses our knowledge of Nature, Science, as in duty bound, stands as a hostile power in its path. It is against the mythologic scenery, if I may use the term, rather than against the life and substance of religion, that science enters her protest. Sooner or later, among the thinking people, that scenery will be taken for what it is worth—as an effort on the part of man to bring the mystery of life and Nature within the range of his capacities; as a temporary and essentially fluxional rendering in terms of knowledge of that which transcends all knowledge, and admits only of ideal approach.—*Prof. Tyndall, in Popular Science Monthly for January.*

“ARE THE ELEMENTS ELEMENTARY?”—Mr. Norman Lockyer has realized the alchemist's dream, the transmutation of metals. In the presence of a small party of scientific men, Mr. Lockyer, by the aid of a powerful voltaic current, volatilized copper within a glass tube, dissolved the deposit formed within the tube in hydrochloric acid, and then showed, by means of the spectroscope, that the solution contained no longer copper, but another metal, calcium, the base of ordinary lime. The experiment was repeated with other metals, and with corresponding results. Nickel was thus changed into cobalt, and calcium into strontium. All these bodies, as is well known, have ever been regarded as elementary,—that is, as incapable of being resolved into any components, or of being changed one into another. It is on this basis that all modern chemistry is founded, and, should Mr. Lockyer's discovery bear the test of further trial, our entire system of chemistry will require revision. The future possibilities of the discovery it is difficult to limit. The great object of the old alchemists was, of course, to transmute base metals into gold, and so far as our knowledge goes there is no reason why copper should not be changed into gold as well as into calcium. The means at present employed are obviously such as to render the process far more costly than any possible results can be worth; but this is necessarily the case with most scientific discoveries before they are turned into commercial facts. Mr. Lockyer is one of our best living spectroscopists, and no man with a reputation such as his would risk the publication of so startling a fact as he has just announced to the

scientific world without the very surest grounds. He is known by his friends as somewhat sanguine, and he does not pretend to be an accomplished chemist, but he was supported by some of our leading chemists, all of whom admitted that the results of his experiments were inexplicable on any other grounds but those admitting of the change of one element into another, unless indeed our whole system of spectrum analysis is to be upset, the other horn of a very awkward dilemma. Since a hundred years ago Priestly discovered oxygen and founded modern chemistry, there has been—there could be—no discovery made which would have such an effect on modern science as that the so-called elements were no longer considered to be elementary.—*London Daily News.*

PERSONALS.

Mr. Armstrong, of Woodham, has been appointed Principal of Durham School, at a salary of \$550.

Geo. Kirk, recently of Campbellford, who obtained the Governor General's bronze medal last July, has been appointed Head Master of Madoc Model School.

Mr. W. R. Treford has been appointed Principal of the Caledonia Model School.

Mr. John Drummond has been re-appointed for the third time to the position of Head Master of Gravenhurst Public School.

Dr. Forrest has been engaged as Head Master of Bradford High School.

Mr. Atkinson, late Principal of Prescott Model School, takes the Head Mastership of Brockville Model School at the beginning of the present year.

Miss J. Anderson, Miss S. E. A. Scobie, and Miss B. M. Wallace have received appointments in Toronto Public Schools.

Rev. Dr. Ryerson, Hon. Adam Crooks, Dr. Hodgins and Dr. May have been honored by the French Government by having the order of the “Palm Leaf,” for distinguished literary merit, conferred upon them, on account of their eminent services in the cause of education.

A. L. Parker, B.A., Trinity College, 1st class classical honors (Toronto University standard), and honorary 4th in mathematics, has been appointed Head Master of Alexandria High School; salary, \$850. Mr. Parker was for a time Assistant Master in Trinity College School, Port Hope, and Classical Master in Brampton High School.

Clare Worrell, B.A., Trinity College, has been appointed Head Master of Gananoque High School; salary, \$900.

Mr. A. B. Cook, B.A., of Carleton Place, has been appointed Assistant in Lindsay High School.

Rev. T. D. Phillips, Mathematical Master, Ottawa Collegiate Institute, was presented with a highly complimentary address and a piece of plate at the close of last session.

Mr. Powell, another Master in Ottawa Collegiate Institute, was presented with a writing desk and an address by his pupils.

Mr. J. H. Farmer, Gold Medalist, Toronto University, has been appointed Assistant Master in London High School.

Mr. Peter Perry, Assistant Teacher in the Perth High School, has been appointed Head Master in the Streetville High School.

The salary of Mr. Eckart, Head Master of East London Public School, has been increased. He is worthy of the increase.

Notes and News.

ONTARIO.

The new section of Mount Forest Central School has been formally occupied since Dec. 1st, and the various departments have been re-arranged accordingly.

Two large wings have been added to the Brantford Collegiate Institute. It is now one of the most convenient buildings of the

kind in the province. In addition to former conveniences it now has an excellently arranged science room, a room with special desks for drawing, and a reading room nicely fitted and furnished with leading papers, magazines, &c.

A resolution was unanimously passed by the students at the close of the Yorkville Model School, tendering a vote of thanks to the principal, W. J. Hendry, for the very efficient discharge of his duties as Head Master during the last term.

Toronto Public School Board has taken charge of the Orphans' Home School.

Rev. Dr. Rose, Dr. Hodgins, and Mr. A. T. McCord, accompanied by Mr. James Bain, Chairman of the Committee of School Management, and Mr. James Hughes, Inspector, presented the Jesse Ketchum prizes in the Toronto Public Schools on December 13th and 16th.

London and Toronto School Boards are agitating the question of increasing the minimum age of school children from 5 to 6 years.

The Kingston Board of Education has dismissed twelve teachers from the public school staff, who have failed to comply with the regulations, by securing advanced certificates.

All the teachers in Bowmanville have been re-engaged at their former salaries.

At the last meeting of the Teachers' Association in Wglin it was moved by Mr. Millar, seconded by Mr. Steele, "that in the opinion of this Association the present arrangements for acquiring the professional training for second class teachers do not afford sufficient facilities for securing certificates, after the non-professional attainments have been obtained." Carried. At the same meeting the committee appointed to examine Swinton's Language Lessons reported in favor of the latest edition of Miller & Co.

The Inspector of schools for East Bruce, Mr. Clendinning, has issued the following circular to the teachers of his district, informing them of the conditions on which he will recommend the extension of third class certificates. (1) third-class teachers whose certificates expire in July, 1879, and who avow their intention to attend some school in 1880 with a view to preparing for the second class examination; (2) candidates who succeed, or almost succeed, in passing the non-professional second class examination in December or July next, and may wish to teach until an opportunity occurs of either attending a Normal School or preparing for the second class examination; (3) third class candidates who at any non-professional examination gain ten per cent. more than the required number of marks, with, perhaps, the addition of attendance at a Model School. The Inspector objects to endorsing certificates from other counties except in the case of a scarcity of teachers in his own district.

In a report by M. Buisson, President of the French Commission at the Philadelphia Exhibition on Primary education, we find the following reference to Canadian Education:—"We have already spoken of the models of school houses which were exhibited by the Province of Ontario, Canada. We ought not to forget to mention the work recently published by Dr. Hodgins, Deputy Minister of Education at Toronto, under the title of 'School Architecture.' There is found in it most complete information on the different questions which present themselves on the selection of sites and materials, the disposition of the buildings, and the best models of seats, blackboards, &c. We have nothing so complete in France to guide those who have at heart the establishment of proper country school houses. Dr. Hodgins is perfectly familiar with all that has been done in the United States; he has selected with judgment what he found best and most useful and perfect. Moreover, the buildings recently constructed at Toronto and Hamilton are remarkable for the admirable arrangements adopted in them for light, ventilation and heating."

At the close of the Niagara High School Examination a crowded audience assembled in the Court Room, where Rev. Chas. Campbell, in presenting valuable prizes to the pupils who had passed the July intermediate examination, paid a high tribute to the efficiency of the Head Master, Mr. Albert Andrews, and Miss Carnochan, assistant. A handsome gold watch and chain, and a purse containing \$50, were then presented to Rev. Charles Campbell, chairman of the High and Public School Boards, as a tribute of friendship and esteem from the many friends of that gentleman in the town and township of Niagara and vicinity. Mr. Campbell, who is about leaving that town, has ever shown himself a true friend of public education, and his testimonial is well deserved.

His Excellency the Marquis of Lorne, attended the closing exercises of the Ottawa Public Schools, and delivered the following impromptu address.

Mr. Chairman, School Trustees, and Pupils of the City of Ottawa,—

Allow me to tell you how much pleasure it affords me to be able to be present to-night, and to wish each of you a merry Christmas and a happy new year. (Cheers.) It is, I assure you, with great satisfaction I embrace this opportunity of saying how much I admire and revere the admirable system of education adopted in this great Province of Ontario, and of handing to those who have been successful in the competition of this year the volumes which they have so worthily and creditably won, and to hope that they may be as successful in their after career as they have up to the present time. I know how the population of this great Province value their system of education, and I am most happy to see how well they know how to give effect to the manner in which they value it. (Cheers.) Nothing impressed me more forcibly at the Paris Exposition this present year than the great show made by Canada of the furniture, plans, books, &c., used in her schools. It explained to me at once the truth of an observation I once heard by a gentleman who had received a liberal education in England. After returning from a visit to Canada, he remarked, "If I had received one-fourth of the education imparted in the Public and Separate Schools of Canada, I would to-day have been a wiser man." The display made at Paris was a most judicious one, and one calculated to invite the population of the old world to Canada's fair fields and vast untilled lands, and to inform the intending emigrant that his children would be as well cared for in this new world as in any country of the old world. I am afraid that if many of our young friends make themselves thoroughly acquainted with the contents of the volumes given them this evening, and similar volumes, they will be better learned than we who have lived more years than they have. Ladies and gentlemen, at Paris it was said that there were some blanks in the exhibition by Canada of the wonderful products of her harvest and in the manufactures of machinery, &c. I can now understand that we did not wish to hurt the susceptibilities of Europe, for if we had exhibited our fine wheat, or our luscious golden pippin apples, we should at once have shown the apple of discord and awoken the envy of the Parisians. (Laughter.) For the same reason we did not exhibit largely in the machinery department. Other nations filled the whole building with great machines, that vibrated, sounded, and whirred, and the wheels and pistons of which were driven by steam. We did not desire to show them that we had another motive power than steam to drive our machinery. We did not wish to inform the denizen of Paris or of London that if he should see the Ottawa or the St. Lawrence he would feel ashamed of himself when he looked on the Seine or the Thames again. (Laughter.) The exhibition of educational apparatus was the best exhibit the Dominion could have made. It was interesting to see the magnificent lumber trophy, exhibiting the wealth and treasures of our forests, but in our educational exhibit we demonstrated to the world that we were apt in cultivating the greatest treasure of all: the ready brain and quick instinct of the youth of this country. (Cheers.) Now, I desire to address a few words to the young folks present. First of all, I would say to those who have not been successful this year that they must not lose heart. There is one good maxim which they should remember; it is, "Better luck next time" (laughter), and another still better, "Never say die" (Applause.) Many men who have not been successful at first have in the end obtained more than they hoped primarily to obtain. I need not recommend you to read one of the most beautiful volumes written in this century, "The Tales of My Grandfather," from the pen of the celebrated Sir Walter Scott. (Applause.) In this great work he narrates the story of a great Scottish king, who in a time of difficulty, danger, distress, and fear, went to sleep, weary with exertion, and hopeless of success in the great enterprise of delivering his country from her enemies. When he awoke from his slumber he saw on the rafters above his head a spider endeavouring to spin her web. The spider tried several times to bridge across the span, but it proved too wide for her. She tried, I think, three times, and failed in each attempt, and at last Bruce said that if the spider should try another time and succeed he would follow the example. The spider did try again, and succeeded. From that event Bruce drew a favorable omen, and success attended another attempt, and thus he won our gratitude and roused our pride. I will draw the same moral from an incident in the early career of one of the greatest financiers of our time. I allude to Mr. Gladstone. (Applause.) When he was leaving school for College, as many of you are doing to-night, he told his father that he would do his best to succeed in classics, but he (his father) must not expect him to suc-

ceed in figures, for he was not good at mathematics. He however went through the university course, and he went out into the world not only proficient in classics, but also proficient in mathematics. There is no post of honour in Canada which is not open to any person present to obtain. It may be a little more difficult in the Motherland, but even there there are few positions which are not open to every aspirant. In this connection, as a proof, I can quote a name connected with a vessel, the *Black Prince*, commanded by H.R.H. the Duke of Edinburgh, which was lying at Halifax on my arrival. That vessel was built by a gentleman who commenced at the lowest step in the ladder of fame, and who before he died became one of the wealthiest and most celebrated of Glasgow shipbuilders—Robert Napier. He succeeded simply by pursuing his course of duty with unswerving pertinacity. I congratulate those who have been successful in winning prizes, and I beg to remind them that they must not lessen their exertions. Although they may have learned to swim, it may require many strokes yet before they reach their goal. I hope they will strike out for it, and prove worthy of the education they have received, and in time prove themselves to be thoroughly Canadian. What does that mean? To be thoroughly Canadian means that they must be men who are thoroughly loyal to their Queen and country. (Cheers.) Loyal to their Queen, because they reverence her as one of the most perfect of women, and respect her as a sovereign who wields justly and rightly her sceptre, and binds together in unity the various races of which this great Empire is composed. (Cheers.) They should be loyal in every sense, practise every good, be honorable, and dwell together in brotherhood and tolerance. They should be loyal to themselves, to their self-respect, and to the land in which their God has placed them; loyal to the Maker who has settled them in this fair land, and know that it is their duty to do their best for this Province and for this wide Dominion, whose children will certainly be the fathers of a mighty nation. (Prolonged cheering.)—*Gl: be.*

THE EDUCATIONAL DISPLAY OF ONTARIO AT THE PARIS EXHIBITION
—HONORS TO CANADIAN EDUCATIONISTS.

The Exhibit at Paris of the Education Department of Ontario comprised: (1) Educational reports, pamphlet of the Minister on the Educational Institutions of the Province of Ontario, specially prepared for this Exhibition; Compendium of the School Laws and Regulations, and other books explanatory of the system. (2) Special Report of Mr. Hodgins, Deputy Minister, on the Educational Aspects of the Philadelphia Exhibition of 1876. (3) Photographs of public and high schools, colleges and universities. (4) Public school methods and organization. (5) Text books (6) Teachers' Libraries. (7) Library and Prize Books. (8) Maps, charts and diagrams. (9) Globes, geographical and astronomical apparatus. (10) Illustrations of Natural History. (11) School Apparatus. There were also exhibited, in connection with his work on *School Architecture*, models of public schools and of school houses for both public and high school buildings by Dr. Hodgins, Deputy Minister of Education. Similar illustrations of the interior organization and appliances for secondary instruction were also included.

The honors awarded to the Educational Department were the following: (1.) Grand diploma of honor; (2) diploma of the value of a silver medal, and (3) one gold medal; also to Dr. Hodgins, one gold medal; Dr. May, one gold medal and one bronze medal. The honorary rank of officers of public instruction (Order of the Palm Leaf) was also conferred upon the Honorable Adam Crooks, the Minister of Education, Rev. Dr. Ryerson, the late Chief Superintendent, and Dr. Hodgins, Deputy Minister, and that of the Academy on Dr. May.

The exhibit at Paris did not comprise as large a number of articles as were sent to Philadelphia in 1876, but it appears to have been sufficiently complete for the purpose of a full illustration of the Ontario system, both for elementary and secondary educational objects.

The testimony has been general as to the favorable character of this particular department of the Exhibition, and as to its importance in connection with the whole Canadian representation at Paris. Sir Charles Reed, the Chairman of the London School Board, in a lecture on the educational aspects of the Paris Exposition, delivered at the rooms of the Society of Arts on the 9th October last, expressed his views in the following terms: "But what was wanting in England was amply made up by the Dominion of Canada and other British Colonies. Any Englishman might well be proud of the educational exhibits of the British dependencies." Mr.

Frederick Young also, in a paper read by him at the Royal Colonial Institute, on the 19th of last month, "On England and her Colonies at the Paris Exhibition," made the following reference to the Educational Department: "The people of the Dominion appear to closely resemble in quickness of invention and shrewd energy the qualities of their nearest neighbors, the Americans; but the key to one of the principal causes of their successful progression in the development of industrial art is probably to be found in their excellent and superior educational system. Evidences of this were shown in the remarkable exhibition of school books, maps, furniture and accessories made by the Dominion, and more especially by the Province of Ontario." And in the discussion which followed, a similar tribute was paid by different speakers; and one of them quoted the observations made by General Hawley, the Chairman of the Centennial Commission on receiving the Ontario Teachers at Philadelphia in 1876, as being applicable to Canada at Paris in 1878, "that Canada had done more for the success of the Centennial Exhibition than any eight States of the American Union, with the exception of New Jersey and Pennsylvania." The number of medals taken by the Canadian exhibitors at Philadelphia was 564 in all, but included departments which could not be represented at Paris, such as horses, cattle, stock, poultry, fruit, &c.

The honors obtained at Paris were 233 in all, 88 being honorable mentions.

The public of Ontario cannot but be gratified at the honorable position which, in this world-wide competition, they were able to maintain so successfully; and especially that its educational system should have been so honored when every country except England endeavored to be well represented in the department of a national system of education. The Province, in fact the Dominion of Canada, in considering the gains thus made for our national credit, cannot over-estimate what is due to the Minister of Education, to Dr. Hodgins, the Deputy-Minister, and to Dr. May, one of the officers of the Department, whose individual efforts were so successful in presenting our excellent educational system in such a favorable manner.—*London Advertiser.*

QUEBEC.

The last number of the *Journal of Public Instruction* contains an instructive essay on the Teaching of English, delivered before the College of Preceptors, in London (Eng.), by Mr. Storr.

Most of the schools broke up for the Christmas vacations on Friday, the 20th ult.

It is interesting to note the division of the sum of money granted for superior education. That sum is made up from two sources, (1) The share which falls to Protestants of the sum annually voted by the Legislature. (2) The sum arising from the sale of marriage licenses. At the meeting of the Protestant Committee of the Council of Public Instruction, held on the 28th August, the division of the amount was made and the sum apportioned to each institution named. The members present at the meeting of the Committee were: Hon. G. Irvine, Chairman; Dr. Dawson, Principal of McGill College; W. W. Lynch, M.P.P.; Hon. J. Ferrier; Hon. Judge Day, Chancellor of McGill University; Dr. Cameron, M.P.P.; R. W. Heneker, Esq., Chancellor of Lennoxville University; Hon. Judge Dunkin; Hon. G. Onimet, Superintendent of Education. The sum arising from the sale of marriage licenses amounted to \$6,226, after deducting expenses of management. This sum was divided as follows: McGill University, \$2,500; Morrin College, \$1,250; Bishop's College, Lennoxville, \$1,250. The remainder, \$1,225, added to the grant from the Superior Education Fund, made a total of \$11,206.13 for distribution as follows: McGill University and College, \$1,650; Morrin College, \$500; St. Francis College, Richmond, \$1,000; University of Bishop's College, Lennoxville \$1,000. Total, \$4,150. It would seem as if some of the Colleges or Universities obtained a sort of double distribution in their favor. \$6,000 was distributed among 23 academies, and \$1,185 to 21 Model Schools. Of the last, none obtained a higher grant than \$75—while, of the Academies, 9 obtained grants of less than \$200 each. All these which do not give Superior Education, to a greater extent than is measured by \$150, ought to be removed from the list of so-called Superior Educational Institutions. It would seem also to be fair that other institutions than colleges should have representatives on the Council.

VISIT OF HIS EXCELLENCY THE GOVERNOR-GENERAL AND THE PRINCESS LOUISE TO MCGILL UNIVERSITY, NOV. 30, 1878.

His Excellency was met by the following members of Convoca-

tion, who were assembled in the College Library, namely:—The Hon. Justice Chas. Dewey Day, LL.D., Chancellor; Hon. J. Ferrier, C. J. Brydgors, Sir Francis Hincks, Hon. L. H. Holton, John Molson, Governors; Principal Dawson, LL.D., Vice-Chancellor; Archdeacon Leach, LL.D., Principal Howe LL.D., Hon. J. J. C. Abbott, D.C.L., Q.C., G. W. Campbell, M.D., LL.D., Rev. J. Cook, D.D., Professor Johnson, LL.D., Professor Cornish, LL.D., Rev. H. Wilkes, D.D., LL.D., Rev. D. H. MacVicar, LL.D., R. A. Ramsay, M.A., B.C.L., L. J. Reddy, M.D., J. J. MacLaren, M.D., B.C.L., Q.C., J. B. Dougall, M.A., W. H. Kerr, B.C.L., Q.C., Professor Murray, LL.D., Professor Bovey, M.A., C.E., Professor Harrington, Ph.D., Dr. Brown, B.A., Lecturer McLeod, M. E., Fellows. W. C. Baynes, B.A., Secretary and Registrar. Professors—Dr. Scott, M.D., B.C.L., E. Carter, B.C.L., Q.C., Dr. Fenwick, G. Doutre, B.C.L., Q.C., Dr. G. Ross, M.A., Dr. Roddick, Dr. Osler, Dr. Godfrey, Dr. Gardner, J. S. Archibald, B.A., B.C.L., E. Larcen, B.C.L., Dr. Shepherd, M. Hutchison, B.C.L., J. E. Robidoux, B.C.L., C. E. Moyses, M.A. Graduates—Dr. Sterry Hunt, Dr. Trenholme, Dr. Thayer, Dr. Turgeon, Dr. Bibaud, Dr. Schmidt, Dr. Reid, Dr. Blackader, Dr. Webb, Dr. Finnie, Dr. Munroe, Dr. Tunstall, Dr. Alloway, Dr. Mackay, Dr. Loverin, Dr. Bell, Dr. Mount, Dr. Burland, Dr. Fulton, Dr. Macdennell, Dr. Proudfoot, Rev. J. F. Stevenson, LL.B., L. H. Davidson, M.A., B.C.L., Lemuel Cushing, M.A., B.C.L., W. Morris, M.A., M. B. Bethune, M.A., B.C.L., Professor McGregor, M.A., Rev. W. Hall, M.A., E. Kemp, M.A., B.C.L., W. M. Marler, Rev. J. Empson, B.A., S. P. Robins, M.A., C. Cushing, B.C.L., E. A. Baynes, B.C.L., W. DeCoursey Harnett, B.C.L., H. S. W. Goodhue, B.C.L., W. Simpson Walker, B.C.L., F. A. Knapp, B.C.L., R. S. C. Bagg, B.C.L., S. A. Lohourvean, B.C.L., C. H. Stevens, B.C.L., F. W. Hicks, M.A., E. I. Resford, B.A., Rev. J. Wellwood, B.A., Rev. R. D. Fraser, M.A., H. H. Lyman, B.A., K. N. McFee, B.A., W. L. Dawson, B.A., J. T. Donald, B.A., J. Matheson, B.A., W. M. Walbank, B.M.Sec., Dr. Bessey, B.A. About 350 students were present.

The Honourable Chancellor read the following address:—

To His Excellency the Most Noble the Marquis of Lorne, Governor General of the Dominion of Canada:

MAY IT PLEASE YOUR EXCELLENCY,—The Governors, Principal and Fellows of McGill University desire to offer to Your Excellency a cordial welcome, and in doing so to express their gratification that in approaching Your Excellency as the Representative of our Gracious Queen, they have also the privilege of welcoming the official visitor of this University under its Royal Charter.

In this relation Your Excellency's predecessors have ever shown a lively interest in McGill University, and in the cause of higher education represented by it; and in now hoping for like sympathy and encouragement the University has the satisfaction of knowing that it appeals to one who has heretofore been a patron of learning, and who has himself taken an acknowledged place in literature.

The Governors, Principal and Fellows beg leave to tender to Your Excellency their cordial good wishes, that the highest prosperity and success may attend Your Excellency's administration of the affairs of this Dominion, and their prayer that, with God's blessing, you may be enabled to discharge the duties of your exalted office in such a manner as to secure the welfare of all classes of the people, and to afford a just source of satisfaction to yourself.

They also beg leave respectfully to offer their cordial good wishes to Her Royal Highness the Princess Louise, in whom they are happy to recognize one who has been a patroness of education in the mother country, and who they hope may exert a similar beneficent influence here.

Signed on behalf of the Corporation.

CHARLES DEWEY DAY, D.C.L., LL.D.,
Chancellor.

30th November, 1878.

His Excellency made reply as follows:

To the Governors, Principal and Fellows of the McGill University:

GENTLEMEN,—The Governors of this University, Mr. Principal and Fellows, I assure you that I feel proud, as the representative of the Queen, to be welcomed to your University by the governing body. I rejoice to know that I shall be allowed the happy privilege of showing my interest in your proceedings, and in some measure to be admitted to the society of the learned men over

whom you preside. To me personally your kindness is most welcome, for nothing is more interesting to a man coming to reside in a country new to him, than to watch how the community provides for the increasing demands of education. The proper framing of a system for the thorough teaching of youth is perhaps the most important of the many great duties which the citizens of a country must undertake, and it is your part in this common labor to crown the edifice. It is to you that many look for the stamp which tells that youth has not been spent in vain, and the man who wins the mark of your approbation goes forth to the life of the world with the consciousness that there is that in him which may make his career honorable and distinguished and of use to his fellow-men. The estimation in which the McGill University is held tells its own story. Believe me, that anything I may be permitted to do to encourage you will not be wanting, and that it affords the Princess and myself much pleasure to learn that we may look forward to again visiting you, and of marking our esteem and respect for your University. (Signed)

LORNE.

The Marquis and Princess were also pleased to sign the College register for visitors, and after partaking of tea, which was served in the Faculty Room, the party again repaired to their carriages and drove away to the Windsor amid loud cheering and the singing of the National Anthem by the students.

NOVA SCOTIA.

The Halifax City High School Building (described in November's JOURNAL) is now complete, and will be opened with appropriate ceremonies and addresses on the 6th instant.

The Educational Association of Nova Scotia held its annual Session in the University Hall of Dalhousie College, Halifax, on the 26th, 27th and 28th ult. The meeting was one of great interest. An outline of proceedings will appear in Notes of next month. Many of the leading Educationists of the Province were present and contributed to the interest and profit of the occasion.

Many of the ratepayers of the town of Pictou are in favor of the erection of a new edifice for the Pictou Academy.

The papers announce the demise of a veteran Educator, Rev. George McCauley, D.D., President of King's College, Windsor, from 1835 to 1875. Dr. McCauley was a ripe classical scholar, and his Eucælian orations were justly regarded as models of scholarly elegance.

The Senate of the University of Halifax met for the transaction of business on the 26th and 27th ult.

It is understood that a revised Syllabus of Examination for teachers, and amended Regulations for the conduct of the Annual Examination, are about to be published by authority of the Council of Public Instruction.

NEW BRUNSWICK.

The Senate of the University of New Brunswick, at a meeting held about the end of November, decided to defer the appointment of a Professor of Classics until some time in the summer, previous to the opening of the next academical year. In the meantime it is understood that the President is to appoint Mr. W. P. Dole, A.B., to act as Instructor in the classical department till July, at a salary of \$600 for the six months.

There are fifty students taking the full course at the University at present, a number of whom are young men who have formerly studied at the Normal School, and have had some experience in teaching. A good proportion of the graduates of late years, it may be observed, have entered the teaching profession.

The following important minute of the Board of Education, dated May 4th, 1878, was published some time since, together with the regulations and requirements of the University of London, respecting degrees in arts and laws:—

"The London University having, at the instance of His Excellency the Governor General, agreed to admit students in the Dominion of Canada to examination for degrees in arts and laws at prescribed centres in their respective Provinces, the Board of Education of the Province of New Brunswick have deemed it advisable to publish the regulations of the said University respecting admission to such degrees, in so far as this Province is concerned.

"The Board are induced to take this step because they believe that the opportunity thus afforded our young men of connecting themselves with an institution of such well-known and acknowledged standing cannot but prove a great boon to them, while

tending to promote and encourage the higher education and at the same time providing aspiring students at law with a strong and worthy incentive to make themselves thoroughly masters of the grand principles of their profession.

"In order to secure the requisite number of papers for the examinations, it is essential that the Senate of the University of London, should be informed, not later than the 1st of May in each year at what centres in the Dominion candidates will present themselves for the first and second examinations in laws. Candidates in this Province are therefore enjoined to signify their intentions to the Chief Superintendent of Education in time for transmission of the necessary information through the Colonial Office to London not later than the dates above prescribed. Fredericton is the station of examination in the Province of New Brunswick."

Then follow detailed regulations for the Matriculation Examinations, the First and Second B.A. Pass Examinations, and the First and Second LL.B. Pass Examinations, specifying the times and subjects of each examination, etc.

Within the past month the Board of Education also published the course of instruction prescribed for the Normal School, which was put in operation in its present form last May. This course extends over three sessions of about five months each, and appears to be somewhat exceptional in the soundness of the principles exemplified in the selection and arrangement of subjects.

At the close of the examinations for school licenses, held at Fredericton in September last, the Chief Superintendent was led to believe that several of the candidates had been guilty of fraudulently opening sealed envelopes, removing papers contained in them and substituting others, and that some had even entered the Normal School at night, through a window, for the purpose of gaining access to the papers. Prompt measures were taken to gain all possible information respecting the affair. Subsequently an investigation was held before a committee of the Board of Education, and the persons accused, together with a number of witnesses, were summoned from different parts of the Province to give evidence. The result was that the Board cancelled the licenses of five young men who had been student-teachers the past term. They also ordered that the offenders should not be admitted to the privileges of study at the Normal School, nor to any examination for license, for a period ranging from one year to four years, according to the nature of the offence—and not even at the expiration of the period specified unless by special permission of the Board of Education, upon satisfying the Board that the person was worthy of renewed confidence. One of the persons concerned in the fraud, who held already a second-class license, was degraded to the third-class, because of his attempt to deceive the Chief Superintendent in his reply to the circular sent out to all the candidates. So shameful a breach of faith in connection with the examinations is probably unprecedented in the educational history of this Province. The leading facts of the case, and the judgment of the Board, were formally announced by the Chief Superintendent to the students and teachers assembled in the hall of the Normal School.

Writers in some of the St. John papers have been directing attention to the need of a technical school in that city for the training of skilled artisans. It has been suggested that the society called the Mechanics' Institute, which now possesses a small library and museum, might, with the assistance of the Government, do something to promote the establishment of so valuable an institution. This is a move in the right direction.

The French Preparatory Department of the Normal School was opened at the beginning of December, under the charge of Mr. Valentine A. Landry. There are ten French students in attendance, three of whom are taking the full course.

During the first week of December, Dr. Armstrong, of Queen's County, the author of an improved system of short-hand, which he calls "Linear Phonography," introduced his system to the student-teachers at the Normal School, and formed a class numbering about 120, to whom he imparted a knowledge of the subject in a course of six lessons. The leading peculiarities of his system are that the vowels and not the consonants constitute the basis of the word-forms, and that the writing of every word is continuous, without any lifting of the pen to insert dots or other marks.

Speaking of phonography suggests the fact that Prof. Burwash, of Mt. Allison College, Sackville, has been delivering at several places a lecture on "Sound," illustrated by the phonograph and the telephone. The learned professor is a lecturer of marked ability.

The present Principal of the High School at St. Stephen is Mr. Arthur Freeze, A.B., who has supplemented his collegiate training at the N. B. University by a considerable period of study at Edinburgh and on the continent of Europe. He had previously been engaged in teaching for some years. Mr. C. B. Wathon is the second teacher.

The King's County Teachers' Institute met at Sussex on the 19th and 20th December. Over 500 teachers were in attendance. S. F. Wilson, A.B., was elected President; Jas. Maco, A.B., Vice-President, and H. Raymond, A.B., Secretary-Treasurer. Dr. Band, the Chief Superintendent, delivered a lecture, and otherwise added interest to the session. Practical instructions in reading and vocal exercises were given by Miss M. A. Clark, instructor in those subjects at the Provincial Normal School.

Professor Foster, on closing his labours at the University, was presented by the students with a gold chain and seal, accompanied with an address.

The Westmoreland County Institute is to meet at Shediac on the 13th of February.

A meeting of the Executive Committee of the Educational Institute for the Province was appointed for the 3rd inst., when arrangements were to be made for the next annual meeting.

It was announced some months ago that a revised edition of Calkin's "School Geography of the World," was in preparation for the schools of New Brunswick. A new edition has recently appeared, with some improvements in the maps, such as the insertion of coloured county-lines in the British Isles, the new Provinces and territories in the far west of Canada, the alterations in south-eastern Europe, as made by the Treaty of Berlin, etc. The errors in the text and many in the maps remain, however, uncorrected. Though the map of the Dominion has been altered, the new and enlarged western boundary of Ontario is not shown. The revised edition may still be looked for, in which the introductory chapter on New Brunswick will probably be omitted, and the whole of the text brought up to "latest advices."

MANITOBA.

The Quarterly Meeting of the Board of Education was held on 5th December, at which steps were taken for securing offices for the Superintendent, and a room for meetings of the Board of Education. A committee on legislation was appointed, consisting of His Grace the Archbishop of St. Boniface, the Rev. James Robertson, the Superintendent of Protestant Schools, and Mr. E. W. Jarvis.

The University Council, at 7 p.m. of that day, in the Council Chamber, Winnipeg, the Hon. J. Royal, the Vice-Chancellor, presiding. Eighteen members of the Council were present. Communications were received stating that Rev. J. Robertson and Mr. D. Macarthur had been appointed as new representatives from Manitoba College, and Rev. Mr. Chevrier from the Roman Catholic section of the Board of Education. An application from Trinity Medical School, Toronto, for affiliation was received, and steps taken for its consideration. A committee consisting of Archbishop Tache, Canon O'Meara, Professor Bryce and the Registrar, was appointed to consider and report upon amendments to the University Act. The consideration of the proposed statute in Natural Science honors was begun, and after considerable discussion was referred back to the Board of Studies for further consideration. The following gentleman were appointed examiners for the ensuing year:—Classics—Rev. Professors Hart, Forget, and O'Meara. Mathematics.—The Chancellor Metropolitan of Rupert's Land, Rev. A. Campbell, Rev. Dr. Lavoie, and Mr. R. Bourne. Modern Languages.—Revs. Messrs. Hughes, Fortin, and Canon Guidall. Natural Science.—Revs. Professor Bryce, Chevrier, and Mr. Briggs. Metaphysics.—Rev. Mr. Cloutier, Mr. J. F. Bain, and Rev. J. Robertson.

The Registrar, Mr. E. W. Jarvis, was re-elected for the ensuing year.

Manitoba College held its annual meeting on Wednesday, December 11th.

Rev. Prof. Hart read the Senate Report. It showed among other things that one student of the College had during the past year passed the previous examination of the University of Manitoba; six others had passed the preliminary examination, two of whom had been granted a supplementary examination in mathematics; two students had completed their term in theology, one of whom had been advanced; the other is taking an extra session in Knox College, Toronto; one student had entered Victoria College, Cobourg, and one the Trinity Medical School, Toronto.

The following medals, bursaries, and prizes had been given during the past year:—Governor General's silver medal, W. R. Gunn; Dufferin bronze medal, C. M. Stewart; 11. form prize, J. B. Polworth; 1. form bursary, R. McLean; 1. form prize, R. R. Sutherland; honorable mention, J. A. Ferguson. The entrance examinations' bursaries were instituted by a friend of the college, and consist of three bursaries of \$25, \$20 and \$15 each, open to students entering on the higher course from public schools of the Province, and from the junior department of the college. For the first and second the competitors were equal, and the bursaries were made equal. The successful candidates are:—1 and 2, D. Anderson, Kildonan West School; G. M. Atkinson, Winnipeg Central School; 3, J. T. Huggard, Winnipeg Central School.

Readings and Recitations.

THE RED THREAD OF HONOUR.

Among the hills of India
Dwelt warriors fierce and bold,
The sons of robber chieftains
Who, in the days of old,
Fought for their mountain freedom,
And, if by fate laid low,
Fell, ever crowned with honour,—
Their faces to the foe.

Now, 'twas an ancient custom
Among those hillsmen brave,
When thus they found their kinsman,
'To dig for him no grave;
But the torn blood-stained garments
They stripped from off the dead,
And then his wrists they circled
With green or crimson thread.

Many the green-decked warriors,
But only for a few
Was kept that highest honour,
The thread of crimson hue;
For 'twas alone the bravest
Of those who nobly shed
Their life-blood in the battle
Whose wrists were bound with red.

And when they thus had graced them
Who fell before the foe,
They hurled their lifeless bodies
Into the plain below.
The earth did ne'er imprison
Those hillsmen brave and free,
The sky alone should cover
The warriors of Truckee.

There came a time of conflict,
And a great armed throng
Of England's bravest soldiers,
Avengers of the wrong,
Marched through the gloomy gorges,
Forded the mountain rills,
Vowing that they would vanquish
Those robbers of the hills.

The road was strange and dubious;
Easy it was to stray;
And of those English soldiers
Eleven lost their way.
Led by a trusty leader,
They reached a fearful glen,
And saw a mountain stronghold
Guarded by forty men,—

Guarded by forty veterans
Of that fierce robber band,
In every face defiance,
Weapons in every hand.
"Back!" cried the trusty leader;
The soldiers would not hear,
But up the foe-crowned mountain
Charged with the English cheer.

With loud huzzas they stormed it,
Nor thought to turn from death,

But for Old England's honour
Yielded their latest breath,
Short was the fight, but deadly,
For when our last man fell,
But sixteen of that forty
Were left the tale to tell.

But those sixteen were noble:
They loved a brave deed done;
They knew a worthy foe man,
And treated him as one.
And when the English soldiers
Sought for their comrades slain,
They found their stiff, stark corpses
Prostrate upon the plain;
They lay with blood-stained faces,
Fixed eyes, and firm clenched fists,
But the RED THREAD OF HONOUR
Was twined around their wrists.

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.

WELLINGTON TEACHERS' CONVENTION.—The second division of Wellington Teachers' Association held a largely attended and very successful meeting in the village of Drayton on Friday and Saturday, November 29th and 30th.

The evils resulting to teachers, pupils, and educational effort, by the want of uniformity in promotions in our public schools, were forcibly pointed out in a paper read by R. Sanderson, who also indicated how, in his opinion such uniformity might be secured.

C. Macpherson showed, in a very lucid manner, how he would, by means of blackboard, geometrical forms, and a few pieces of paper, introduce and teach mensuration. He thought very little attention need be paid to this subject until pupils entered the fourth class.

When and how to hold public examinations was then ably discussed by T. N. Henry, who also pointed out that these examinations were often a mere farce. Several rural trustee visitors took an active part in the discussion on this subject.

The delegate to the Provincial Teachers' Association, after giving a synopsis of the proceedings of that body, gave notice that at the next meeting he would move a resolution to the effect that it is desirable that the Provincial Convention shall consist entirely of delegates from the various county associations.

In the evening, Prof. Johnston, of the Ontario School of Agriculture, delivered an able and eloquent lecture to a large audience, in Emes' Hall, J. Landerkin, reeve, in the chair. The lecturer considered education in regard to agricultural and mechanical life, and urged upon teachers the great importance of forming in their pupils correct habits of thought, and of cultivating their powers of observation, taste and judgment. He said the teacher must be a living man, and must impart this life to his pupils.

Mr. C. Macpherson also gave a short but pointed address, urging the necessity of employing experienced teachers for the junior classes, and thus having the little ones taught correctly at the outset. He could see no economy in paying an incompetent person \$200 per annum for forming certain habits in the children, and then giving another person \$600 to undo the work.

On Saturday, after the various committees had presented their reports, the Inspector, D. P. Clapp, read an excellent essay on English Literature. He advised the beginning of this subject in the second class by committing to memory the few pieces of poetry of any value. The third class should not only memorize the verse and prose selections, but should also learn the meaning of words, and acquire some knowledge of the prefixes, affixes and roots, and by the translation of poetry into prose. The fifth class should take up the subject thoroughly, becoming intimately acquainted with the persons, times, customs, allusions and figures of speech met with, and the style, beauties and peculiarities of the various authors.

The following were some of the committees appointed:—Messrs. W. F. Mackenzie, P. McEachern, J. A. Dick, and M. McKay, to expend \$70 in buying books for the teachers' library.

Messrs. D. Clapp, M. McKay, S. Perry, and J. A. Dick, to devise a scheme for uniform promotions in our public schools.

Messrs. Macpherson and Frazer, of Arthur, were appointed on the management committee.

Moved by D. P. Clapp, Inspector, seconded by W. F. Mackenzie, "That a synopsis of the proceedings of this meeting be sent to the CANADA SCHOOL JOURNAL for publication, and that it be signed by the President and Secretary."

S. PERRY, Secretary.

R. SANDERSON, President.

NORTH HASTINGS.—The Teachers' Association met at Stirling on Dec. 13th. The morning session was occupied by the President, Mr. Wm. Mackintosh, P. S. I., in explaining the way to use the new registers issued by the Department. In the afternoon Mr. Swayze, writing master of the Belleville public schools, explained his method of teaching writing. He recommended the teaching of elements and principles from the very first. He analyzed the small and capital letters, giving the order in which he would teach them. He gave many valuable hints on awakening and keeping the interest of the pupils. A discussion followed in which the opinions advanced by Mr. Swayze were concurred in by those who had tried the analytical method. Mr. Swayze received a hearty vote of thanks for the able and instructive manner with which for two hours he discussed the subject. Mr. Curtis next explained the method of keeping a class register, used at the Madoc Model School, and the form of report of the pupil's progress sent to the parent.

ONTARIO.—The first meeting of the County of Ontario Teachers' Association was held in the High School buildings, Whitby, on Friday and Saturday, the 6th and 7th Dec. Notwithstanding the badness of the roads there was a large representation of teachers from all parts of the county. Great interest was manifested throughout, owing chiefly to the presence of Mr. J. M. Buchan, M. A., H.S.I., and Mr. R. Lewis, Elocutionist, and Head Master of Dufferin School, Toronto.

The following officers were elected: *President*, Mr. James McBrien, P. S. I.; *Vice President*, Mr. G. H. Robinson, M. A., Head Master H. School, Whitby; *Sec.-Treas.*, James Brown, Head Master of Whitby Model School; *Managing Committee*, Mr. W. W. Tamblin, M. A.; Mr. D. McBride, M. A.; Mr. John Clarke, Mr. D. Jennings, and Miss A. Hickie.

Programme of work done: "Penmanship," by James Brown, Whitby; "How to teach Decimal Fractions," by James Millar, Oshawa; "How to teach History to a class preparing for the High School," by James A. Youmans, Oshawa; "English Grammar," by J. M. Buchan, M. A., H. S. Inspector; "How to Read, etc.," by Mr. Lewis; "Public School Teachers' Certificates," by Mr. W. W. Tamblin, M. A., Head Master of Oshawa High School; "English Literature," by Mr. J. M. Buchan, M. A., H.S.I. On Friday evening Mr. Buchan delivered a lecture on "Poetry and Politics" to a very appreciative audience. The next meeting of the Association is to be held in Port Perry next May, when even a larger attendance and greater interest may be expected.

EAST GREY.—The semi-annual meeting of the East Grey Teachers' Association was held in Thornbury on Thursday and Friday, the 12th and 13th inst. About sixty teachers were present. The following was the programme: 1. Reading of minutes. 2. Paper on Hydrostatics, by Mr. D. Honeywell. 3. Paper on "Order in Schools," by Mr. Malcolm McKinnon. 4. Analysis in Grammar and Arithmetic, by Mr. John Taito. 5. Solution of questions on 2nd class Philosophy paper for July examinations for 1878, by Mr. Wm. Irwin. 6. Paper on Fractions and Percentage, by Mr. R. Hamilton. 7. Essay on the "Moral Training of Children," by Miss Mary Lapp. The programme was very interesting, and elicited a great deal of useful criticism. On the evening of the first day, the President, Mr. A. Grier, delivered his address. There was also an entertainment given under the management of Mr. George Henderson. The Clarksburg brass band and glee club were in attendance.

Messrs. Taito, Evans, Lindsay, Irwin, Stephens, James, and Treadgold, read and recited. The Misses Goodfellow and Lapp read—the reading by these young ladies was very much admired.

The following are the officers for 1879: *President*, A. Grier; *Vice do.* G. Lindsay; *Secy.*, J. Farewell; *Treas.*, A. H. Stephens; *Committee of Management*, Messrs. Howgill, Stephens, Honeywell, McKinnon, Douglass, Treadgold, and Miss Mary Logan and Miss Georgina Lindsay.

Yours truly,

J. FAREWELL, Secretary.

Thornbury, Dec. 18th, 1878.

BOOK REVIEWS.

STEIGER'S EDUCATIONAL DIRECTORY. New York: E. Steiger. Paper, \$1.00; Cloth, \$1.50. Mr. Steiger publishes two annual volumes to accompany his magnificent work, the Cyclopædia of Education. The "Year Book of Education" for 1878 has already been reviewed in the JOURNAL. The Directory contains exhaustive lists of the educational institutions of the United States, British Dominions, Germany and Austria; and long lists of educational works and articles of interest to educators. It will be valuable to teachers, ministers, school authorities, &c.

THE REVISED SCHOOL LAW, PARTS I. & II., by J. George Hod-

gins, LL.D., Barrister-at-Law, Deputy Minister of Education for Ontario. Having had a share in preparing the School Law, and in framing the Regulations; and having spent over thirty-four years in administering and interpreting them, it is only natural that Dr. Hodgins should be better acquainted with them in all their relations to each other than any other man, excepting only the late Chief Superintendent, Dr. Ryerson. Part I. relates to the powers and duties of Public School Trustees in rural sections, and of Public School Teachers. Part II. covers the whole subject not discussed in Part I., and explains the powers of Township, City and Town School Boards, Municipal Councils, Inspectors, Boards of Examiners, etc.; and the Acts relating to Roman Catholic, Protestant and Coloured Separate Schools; Part II. also contains a complete index to the whole work. Nearly two hundred decisions of the Superior Courts, relating to school matters, are given. These constitute a very important part of the work, giving as they do the highest legal interpretation of portions of the law whose meaning may not be perfectly clear. The latest amendments to the law are included.

THE NORMAL READERS. Philadelphia: Porter & Coates. This series is prepared by Albert N. Raub, M.A., Principal of the Pennsylvania State Normal School. They do not profess to contain any "new departures" in the method of teaching reading. The first reader is so arranged that the *alphabet*, or *word* method, may be used. The book is not well adapted for the phonic method, although its author recommends that the *sounds* of the letters, as well as their *names*, be taught to the beginner. A good feature in the first and second books is the absence of unfamiliar words. The selections throughout are excellent and appropriate.

MAGAZINES.

ST. NICHOLAS. Messrs. Scribner & Co., in 1873, began the publication of *St. Nicholas*, an Illustrated Magazine for girls and boys, with Mrs. Mary Mapes Dodge as Editor. Five years have passed since the first number was issued, and the magazine has won a position second to none. It has a monthly circulation of over 50,000 copies. It is published simultaneously in London and New York, and the transatlantic recognition is almost as general and hearty as the American. The New York *Tribune* has said of it: "St. Nicholas has reached a higher platform, and commands for its service wider resources in art and letters than any of its predecessors and contemporaries;" and the London *Literary World* has said: "There is no magazine for the young that can be said to equal this choice production of Scribner's press." The Christmas Number (issued December 15) contains contributions from John G. Whittier, Susan Coolidge, Charles Dudley Warner, the late Theo. Winthrop, Frank R. Stockton, Mrs. Burnett (author of "That Lass o' Lowries"), "Hezekiah Butterworth," Julian Hawthorne, Celia Thaxter, Olive Thorne, and many others.

THE ATLANTIC MONTHLY. January, 1879. The following articles will be specially interesting to educators: "Americanisms," by Richard Grant White; "The Latest Songs of Chivalry," by Hamilton Preston, and "Recent Literature," by the Editor. Goldwin Smith writes on the question, "Is Universal Suffrage a Failure?" There are three short stories, one by Mrs. H. B. Stowe; four poems, by Whittier, Trowbridge, K. P. Osgood, and H. B. Spofford. "The Paris Exhibition," "Workingmen's Wives," and the Contributors' Club complete the number.

APPLETON'S JOURNAL, January, 1879. This number contains the first parts of two stories, "The Romance of a Painter," from the French of F. Fabre; and "A Man may not Marry his Grandmother," by H. E. Scudder. Both are very readable. The most valuable portions of the journal are "An Art Budget," "The Dietetic Use of Wines," "Petrarch," and Chrysanthema gathered from the Greek Anthology.

POPULAR SCIENCE MONTHLY. The Messrs. Appleton have increased the size of this most valuable monthly to 144 pages. The following is the

table of contents for January, 1879: "Traces of an Early Race in Japan," by Prof. Edward S. Morse (Illustrated); "Virchow and Evolution," by Prof. John Tyndall; "Astronomical Magnitudes and Distances," by Prof. H. S. Carhart; "Herbert Spencer before the English Copyright Commission"; "The Beginning of Nerves in the Animal Kingdom," by Geo. J. Romanes (Illustrated); "Pope and Anti-Pope," by Prof. Carl Vogt; "Scientific Relation of Sociology to Biology. I." by Prof. Joseph Le Conte; "Black Diamonds," by M. F. Maury; "The Devil-Fish and its Relatives," by W. E. Pamon (Illustrated); "Heredity," by Geo. Hles; "The Physical Functions of Leaves" (Illustrated); "Curari or Woorara Poison," by Maurice Girard; "Molecular Dynamics," by L. R. Curtiss; "Effects of Alcoholic Excess on Character," by J. Milner Fothergill, M.D.; Sketch of Gustav Wallis (with portrait). Correspondence: Is Yellow Fever Endemic in the Gulf States? Science Lectures in Japan. Editor's Table: Protection and Socialism—The Religious Recognition of Nature—Improved Domestic Economy.

THE CANADIAN METHODIST MAGAZINE, December, 1878. This number contains two finely illustrated articles: "Educational Institutions of Canada," and "Around the World in the yacht Sunbeam." The first has good cuts of Victoria College and Faraday Hall, Toronto University, McGill College, Knox College and Trinity College. "The King's Messenger" is concluded. "The Romance of Missions," by the Editor, gives a sketch of the life and labors of Dr. Coke. "The Brothers Chambers" is a condensation of the article in the *London Quarterly Review* on the great Edinburgh publishers. "Herbie's last Christmas" is a simple story of the death of a little boy in Ottawa. "The First Christmas," by Dr. Fowler, and four poetical selections complete the body of the number. There is the usual amount of Current Topics, Religious Intelligence, &c., and a Christmas hymn, set to music, by Rev. L. H. Wiseman.

SCRIBNER'S MONTHLY. Special arrangements for 1878-9.—"Haworth's," by Francis Hodgson Burnett, the author of "That Lass 'o' Lowries," will be the leading serial of *Scribner* for 1878-9. It is the longest story Mrs. Barnett has written, and will be more profusely illustrated than any serial which has yet appeared in the magazine. Mr. Boyesen's "Falconberg" will run through a part of the year; to be followed by a serial from a new writer, Mr. Geo. W. Cable, of New Orleans. His novel will exhibit the state of society in Creole Louisiana, about the years 1803-1-5, the time of the Cession, and a period bearing a remarkable likeness to the present Reconstruction period. The series of portraits of American poets will be continued during the coming year, the next being that of Emerson (in February). These portraits will appear as frontispieces of four different numbers. The magazine is now having prepared several articles on the leading Universities of Europe. They will be written by an American College Professor,—Mr. H. H. Boyesen, of Cornell (author of "Falconberg"). Among the illustrated papers in preparation are "Studies in the Sierras," by John Muir, the California Naturalist. Mr. Herbert H. Smith, of Cornell University, a companion of the late Prof. Hartt, is now in Brazil collecting materials and preparing a series of papers on the present condition,—the cities, rivers and general resources of the great Empire of South America. The "Johnny Reb" Papers, by an "ex-Confederate" soldier, will doubtless be among the raciest contributions during the coming year. Illustrated contributions are also announced on Canada, American Art and Artists, American Archeology, American Inventors, Lawn-Planting for Small Places, etc., etc.

MUSIC.

We have received from Oliver Ditson & Co., a few of their new pieces, and among them three from Sullivan's comic opera, "H. M. S. Pinafore." People usually go to an entertainment to be entertained, and it is undeniable that a performance one can laugh at is the most resting of any. This clever burlesque has good music, is very amusing, and its morals are unexceptionable. Mrs. Cripps' song, "I'm called Little Butterfly," is the gay ballad of the woman who brings pies and cakes to sell to the returning mariner. A Galop, by Warren, and a Waltz by the same author, include favorite melodies.

Besides these opera airs, we have in the package a beautiful sacred quartet by J. H. Howo, "Softly now the Light of Day;" a good, wholesome ballad called "Grandfather's Chair," by Neale; and a very merry "Christmas Eve Waltz," by W. A. Severance.

There is also with the music a copy of the "Musical Record," with the weekly news and plenty of fine music.

ANSWERS TO QUERIES.

1. Can a candidate who takes Latin at the Intermediate, instead of Natural Philosophy, Chemistry and Book-keeping, enter the Normal School for professional training if he has taught for three years?

G. H. M., Uxbridge.

Yes. (For the names of American journals see CANADA SCHOOL JOURNAL for March, 1878.)

2. What Latin is required for the Intermediate Examination in July, 1879?

3. What History is the best to read for Second Class Examinations?

SUBSCRIBER, Elmwood.

(2.) In Latin, candidates may take Eclogue's I., IV., VI., VII. and IX of Virgil, instead of the portion of the *Aeneid* at present prescribed.

(3.) For English History, "The Epoch Series;" Canadian History, Jeffer's; Roman, any good history.

4. Can a Teacher having taught from the 3rd Jan., 1878, to the 23rd Dec., 1878, inclusive, claim salary for the whole of said year, together with salary for 1st and 2nd Jan., 1879?

5. Will the attendance of children living in No. 1 Section and having parents holding taxable property in the same, but also having a small assessment of say \$50 in No. 2, be returned for the Inspector for No. 1 or No. 2?

H. T. H., Clover Hill.

(4.) The Teacher is entitled to his salary for the holidays, at the close of his engagement.

(5.) The attendance should be returned in Section No. 1.

6. If a person who holds a "Second A" desires to attend the Normal School, for professional training, will he receive the allowance of \$2.00 per week?

Not if the certificate was obtained before July, 1877.

7. I hold a third class certificate which expires in July, 1878. Nov., if I write at the Intermediate Examination in July, 1878, and take a second-class, will I be allowed to teach the balance of the year on it?

A. B. C.

You may teach until you are admitted to the Normal School for "professional training."

8. At the Intermediate Examination, which I passed in Dec., 1876, I took Latin. Is my certificate equivalent to a non-professional second-class grade B?

SUBSCRIBER.

Yes.

9. Please let me know the price of the last Programme for the Examination of third-class Teachers.

G. S., Kemble, Ont.

It can be obtained gratis by applying to the Educational Department.

—Ruskin has truly said: "Education does not mean teaching people to know what they do not know. It means teaching them to behave as they do not behave; and the true compulsory education which the people now ask of you is not *catechism*, but *drill*. It is not teaching the youth of England the shape of letters and the tricks of numbers, and then leaving them to turn their arithmetic to roguery, and their literature to lust. It is, on the contrary, training them into the perfect exercise and kingly continuance of their bodies and souls. It is a painful, continual and difficult work, to be done by kindness, by watching, by warning, by precept and praise—but above all, by example."