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# The Canada School Journal.

Vol. III.

TORONTO, NOVEMBER, 1878.

No. 18.

## GOLDWIN SMITH, LL.D., M.A.

Professor Goldwin Smith was born at Reading on the 13th of August, 1823. His father was a physician, who gave his son the advantage of attendance at the best educational institutions of England. He received his early training at Eton, and did much more than his share in winning honors for that justly celebrated school during his university course at Oxford. His career there was remarkably successful. He first entered as an undergraduate of Christ Church, but being elected to a demyship in Magdalen he completed his course in that college. During his course he won the Hertford and Ireland scholarships. He ranked first-class in classics when he graduated in 1845, and obtained the Chancellor's

prizes for Latin verse, and for the Latin and English Essays, thus early giving evidence of that great ability to use the English language which has since earned for him so distinguished a place among the writers of modern times. Two years after graduating he received a Fellowship in University College, and became one of its tutors. He was called to the Bar in the same year, but he never practised law. He soon earned for himself a position in his college. He was recognized as an independent and practical thinker, capable of grappling with great problems, beyond those which lay immediately in his path. He was able to discover difficulties, and to suggest the means for removing them. His ability was early appreciated and rewarded by the Government, who appointed him, in 1850, Assistant Secretary of the Royal Commission to enquire into the general condition of the University of Oxford; especially in relation to its revenues, discipline and studies. He

was Secretary of the second Commission appointed to report in regard to Oxford. He had also the great privilege and the high honor of being a member of the Royal Commission instructed to examine into the state of Popular Education in England. In this position Mr. Smith did good service for his country, and had at the same time the opportunity of acquiring a thorough practical acquaintance with the actual condition and the pressing needs of the English schools. The knowledge then gained has since enabled him to deal intelligently with the educational problems of his native and of his adopted land. He became Professor of Modern History at Oxford in 1858. This position he retained until 1866, fulfilling its duties in such a manner as to attract the attention of the highest authorities in England. During this time his reputa-

tion crossed the Atlantic, and his decided stand in favor of liberal reforms in educational and religious matters gained for him many admirers in America. He was a warm supporter of the North during the American civil war, and wrote and spoke strongly in favor of the abolition of slavery. He first visited the United States in 1864, and returned in 1868, having accepted the position of Professor of English and Constitutional History in Cornell University. Mr. Smith still retains this position, although he resides in Canada. In 1872 he removed to Toronto. He at once took a prominent position in educational circles. He was appointed a member of the Senate of the Toronto University, and was elected by the Public School Teachers of the Province of Ontario their first representative on the Council of Public Instruction. In this position he labored most faithfully

until with the change of departmental management from a Superintendent to a Minister of Education, the Council ceased to exist. He was for two years President of the Provincial Teachers' Association. In that capacity he gave the utmost satisfaction; and it is one of the boasts of the Association that, unlike most of its ex-presidents, he still remains one of its active members. In addition to the many public lectures which he has delivered on educational subjects, he has identified himself with public education in his adopted country by his courses of lectures on History, given to the ladies of Toronto and Montreal. During his residence in Canada, Mr. Smith has been prominently connected with the press. He was for some years editor of the *Canadian Monthly*, and was a leading writer on the staff of the *Nation*, a weekly newspaper which aimed to reduce the violence of party feeling in Canada, and to lift politics above mere personal



(From a Photograph by Hunter & Co., Toronto).

warfare. He has been a voluminous writer during the past twenty-five years, and has published the following works: "Rational Religion and the Rationalistic Objections of the Bampton Lectures for 1858;" "The Study of History;" "Foundation of the American Colonies;" "Irish History and Irish Character;" "The Empire;" "England and America;" "The Civil War in America;" "Three English Statesmen (Pym, Cromwell, Pitt), a course of lectures on the Political History of England, 1867;" "The Experience of the American Commonwealth;" "Essays on Reform, 1867;" "The Reorganization of the University of Oxford, 1868;" "The Irish Question;" "The Relations between America and England," being a reply to a speech by Mr. Sumner, 1869. His style is pure, clear and very vigorous, and his language remarkably select. He is undoubtedly stamping his impress upon the literature and the history of his time, and Canada has reason to be proud of her adopted son.

## Gleanings.

### ART EDUCATION OF WOMEN.

Women need much consolation in this world. Sometimes they are in love: indeed, this is so common a complaint with them that they should have a sublimated Pond's extract, a metaphorical camphor, or spiritual arnica, to apply to that hidden wound. The needle is a good little lightning rod, a conductor off for concealed disturbance. Many a heartache has been embroidered away. Sometimes women are poor. This is sadder still. They must so conduct the hidden sorrow through the needle into the satin that it may come back to them bringing bread. They must weave that enchanted carpet of Aladdin, which will take them from place to place. They must earn their living by their accomplishments—a hard thing to do.

And here we come to trouble. Most women can do various pretty things well—but not well enough to sell. The thorough art education of women is a thing which had not been thought of twenty-five years ago. Thus it came about that no being on earth is so helpless as the reduced lady; and it is to the assistance of reduced ladies that the South Kensington Museum Association has devoted itself, teaching women to embroider so perfectly that even the Roman Catholic Church, that great purchaser of embroidery, will buy the work, and she is very particular. The ecclesiastical embroidery is a special art by itself. Chasuble, cope and alb, robe and carpet, and altar-cloth and drapery must be so deftly done that the microscope itself can detect no flaw. There is no finer, richer illuminating in an old missal than some of this embroidery. The face of Christ is painted by some devout needle-woman in silk almost as Leonardo da Vinci painted it in oils.

Tapestry is the work of both Arachne and Penelope. It is woven first, and then embroidered, or else in the weaving a shorter thread is thrown across, and the pattern comes out in fresh colors of a different web. Many ladies now emulate Matilda in the Bayeux tapestry, and use, as she did, coarse brown linen for the groundwork, and design, as she did, their own patterns.—Turkish toweling is a favorite background for these tapestries. A great tendency toward cheap things, and a sudden discovery that the cheapest fabric and the most perpendicular sunflower, or the straightest cat tail, is more artistic in combination than the wreath of splendid lilies thrown across satin—all this is the surprising discovery of modern art decoration. Some of us take the liberty of doubting the wholesale assumption of the modern Eastlake, pre-Raphaelite, and South Kensington Schools. Some of us still love luxurious French brocatelles and Japanese silks, heavy with gold and silver; but we are in an inglorious minority. A coffee bag embroidered with cat tails is "higher art."—*Apleton's Journal*.

### CONDENSED DIRECTIONS FOR TEACHING ARITHMETIC.

BY JOHN SWETT, IN NATIONAL JOURNAL OF EDUCATION.

1. Train beginners from five to six years of age on combinations of numbers, not exceeding ten, in addition, subtraction, multiplication, and division. Begin with *counters*, such as small blocks of wood, shells, corn, beans, or pebbles, and use them for two or three months, until the pupils can make the combinations without the aid of objects.
2. Teach figures, and the forms of written arithmetic, in connection with the mental work.
3. Children under ten years of age should be limited to operations in addition, subtraction, multiplication, and division, in order to secure accuracy and readiness. Problems and analysis come properly when the reasoning faculties are more developed.
4. Use the blackboard yourself for the purpose of giving explanations or models of methods.
5. Drill your pupils at the board, sending up one-half the class while the other half is engaged in slate work. Give both divisions the same exercises, and insist on good figures and neat work.
6. Give frequent drills in addition, the operation in which more mistakes are made than any other.
7. Fix every new operation, or principle, by long-continued and frequently-repeated drill.

8. Accuracy is vastly more important than rapidity.  
9. Mental operations should, in general, precede written arithmetic. The two should be taken together.

10. The essential operations in arithmetic, which all pupils should understand, are the four rules, common and decimal fractions, the tables of weights and measures, and interest. All the rest of the text-book may be omitted without much loss by all but high-school pupils.

11. A great deal that passes in school books under the name of arithmetic consists largely of schoolmasters' exercises, of neither practical nor disciplinary value.

**THE CHEERFUL TEACHER.**—What a blessing to a school is a merry, cheerful teacher, one whose spirits are not affected by wet days or little disappointments, or whose milk of human kindness does not sour in the sunshine of prosperity. Such a person brightens the school room like a little piece of sunny weather. The children go to school with a sense of something great to be achieved, and so day by day their strength and energy are renewed.

When the benevolent pastor Berlin visited the schools of Alsace in his day, he came to a school where there was much noise. At last he found the teacher—and asked him what he taught. "Nothing," said the man. "Nothing!" said the pastor, "how is that?" "Because," said the schoolmaster, with charming simplicity, "I know nothing myself." He then went on to describe how he had charge of some pigs until he became too infirm, and then was sent to take charge of the children.

W. D. Henkle, of Ohio, says, "No teacher deserves a position in a school who has not enough education to become the reader of at least one good educational periodical. \* \* He ought to read several. If he is too poor to afford the expense of one, he is too poor to teach." *What journal should a teacher take?* The one that will do him the most good. If his own State journal is a good one, he should take that. If teachers support well their own educational paper, its increased circulation makes it a power in the State for the promotion of educational interests, and thus it becomes the teacher's best friend. It is always ungrateful to "cut" a tried and true friend for the sake of a new acquaintance.

**PICTURES IN THE SCHOOL ROOM.**—"Just as pleasant as could be! Looked like a parlor," were the words of one who had passed through a class-room and given but a glance to its belongings. "It is so dismal in our room," said a scholar to one of her friends; "nothing but desks, chairs and blackboards; even the maps, old and soiled as they are, would be something to look at; but Miss B \* \* takes them down as soon as geography lesson is over; examples or any kind of scribbling on the blackboards would be less tiresome to see than the empty space; she is so practical as to have every mark rubbed out as soon as it is made." Notice the difference in the two remarks. What do you think caused the rooms to look so unlike each other? Two or even one word would explain it. Pictures—that is the first; flowers—that is the next. Some one has observed, and truly: "Nothing is more melancholy, particularly to a person who has to pass much time in his room, than blank walls and nothing on them; it is such an inexpressible relief to a person engaged in writing, or even reading, on looking up, not to have his line of vision chopped square off by an odious white wall, but to find his soul escaping, as it were, through the frame of an exquisite picture, to other beautiful scenes where the fancy for a moment may revel refreshed and delighted."—*Helen Ray Randolph, in New York School Journal*.

**HARD WORK** must be done by the growing student, and plenty of it, if he would acquire toughness of mental fibre. We have little faith in the pap-spoon theory of education, and still less in dry husks of the rote system of mere question and answer. But toil may be made glad when interest is aroused and thought is active, and it is by such toil only that the most important results are achieved. It is the business of parent and teacher to arouse this interest by presenting the subject, whatever it may be, in an intelligent and attractive manner. He should not do the work for the child, but should aid him in doing it until the strength of the latter is such that he can move on of himself, awakened, resolute, and self-reliant.—*Penn. School Journal*.

**PRIZE FOR AN ESSAY ON HYDROPHOBIA.**—The following are the conditions to be observed by competitors for the prize of one hundred pounds for an essay on Hydrophobia, its nature, prevention and treatment, offered by Mr. V. F. Bennet Stanford, M.P., to be awarded by the Royal College of Physicians of London.—The essay must be in English, or accompanied by an English translation, and delivered to the College on or before Jan. 1st, 1880. Each essay to be accompanied by a sealed envelope, containing the name and address of the author, and bearing a motto on the outside. The same motto to be inscribed on the essay. The essay may be the joint production of two or more authors. If not published by the author within a year, it becomes the property of the College. The prize not to be awarded unless an essay of sufficient merit be presented. The questions which are thought by the College specially to require investigation are:—The origin and history of outbreaks of rabies, particularly in the United Kingdom and its dependencies. The best mode of prevention of rabies. The characteristics of rabies during life, and the anatomical and chemical changes which are associated with the disease in its successive stages, particularly in its commencement. The origin of hydrophobia in man. The chemical and anatomical morbid changes observed in the subjects of the disease, with special reference to those having their seat in the organs of the nervous system, and in the salivary glands. The symptoms of the disease, particularly of its early stage, as illustrated in well-observed cases. The diagnosis of the disease in doubtful cases, from conditions more or less resembling it. The alleged prolonged latency of the malady. The efficacy of the various remedies and modes of preventing the disease which have been proposed, and what plan of treatment, whether prophylactic or curative, it would be most desirable to recommend for future trial.

**WHAT SHALL CHILDREN READ?**—Are teachers and parents asking daily this question? The power of reading! Is it possible to estimate its force? All the pupils above the age of nine years, and many, especially girls, of younger age, are not only able to read, but are hungry for reading-matter. We asked a boy of thirteen, recently, if he read much. He thought he did, and on telling upon what books his hours for the last two weeks had been spent we found the list to embrace *The White Chief*, *The Indian Hunters*, *Seth Jones*, and *Sheet Anchor Tom*. Guard carefully the School library. A young person is made to enjoy good reading as easily as to enjoy trash. Teachers cannot do all, but parents and teachers can accomplish the whole. Guard well the reading of the boys and girls. It is the potent agent in making character.—*Denver Times*.

**NEWSPAPER SCIENCE.**—The following use of scientific terms was recently made by a writer in the *London Daily Telegraph*. The writer, in tracing the influence of Heines' writing on German Socialism, observed in the course of his remarks: "This writing, acting upon the socialistic tendencies of modern Germany, has proved not the wholesome balm that lessens the mass, but the burning acid that bites and corrupts; which, in contact with the alkaloid base of imperfect understanding, has caused that effervescence and ebullition of the seething atoms which takes the form of socialist communism."

**PLAY.**—For the sake of pupils, their health, strength, moral education, and everything that we hold dear, let pupils have healthy, hearty, jolly play. It is the safety-valve of the school, and very closely connected with school government.—*L. M., in New York School Journal*.

**INTELLIGENCE PAYS.**—Keep the people posted up on the value of intelligence over vice and ignorance. Intelligent people are law-abiding; produce more than they consume; they enrich and beautify and build up, and circulate money, and create diversified industry, which gives employment to people. Intelligence pays.—*Am. Journal of Education*.

—A parent who claimed the right to educate his own children sent the following communication to one of the School Board. "Gentlemen—I am at a loss to know why the school Board officer is so desirous to have my childer educated. It is my only wish to make them cholars. There is plenty of stræt arabes to look after with-

out annoying me so much. Yours, and so forth, 'The Gentleman School Board."

— Govern yourselves, refrain from moroseness, peevishness, or scolding. Have a clear idea of what you are going to do. Teach pupils how to study, how to get out of the text-book what is there, and to put it into their own language. Do not be noisy, govern so far as possible by quiet signals. In hearing recitations be interested yourself be enthusiastic. Have no pet pupils. Govern without monitors. Do not send pupils for every little thing to the Principal, Superintendent, or Director. Have a programine and adhere to it. Don't get into the habit of suspecting certain pupils of doing all the bad things in school. Do not allow pupils to report each other. Cultivate in pupils self-respect and self-government. Never attempt to ferret out mischief without being successful. Do not lower yourself to the level of your pupils, but aim to draw them up to your level. Maintain a quiet, cheerful dignity. If you have under-teachers, give them due credit for their efforts, and let them know how you appreciate them.—*J. F. Nichols, Detroit*.

—A bad school, like a bad family, is known by the amount of flogging in it. In proportion as the rod is unknown, perfection of discipline may be inferred, and good order is the main requisite for rapid progress in knowledge. A teacher who has to spend the most of his time in beating boys is soon good for nothing else, as he loses the temper and habits of an instructor. Such a person ought to be put out of school at once, since he will be violent and inefficient whether the rod be taken away from him or not. By selecting men and women possessed of the natural tact, dignity, and force of character required to impress and control a number of children of every sort, brought together in one enormous family, the school commissioners will do more to abolish corporal punishment than by passing a hundred rules prohibiting it. Such teachers will be able to get along without using the rod, and the sentiment of our times will insist upon having such teachers, since the days of education by rulers, canes, leather-straps and rawhides, belong to the era when they flogged sailors in the navy, and considered Solomon literally the wisest man that ever lived.—*N. Y. World*.

—A private letter from Saigon, China, of date 17th August last, states that a fatal occurrence took place on board a Leith steamer at Saigon about the beginning of that month, as follows:—A Chinaman went down the hatchway on the cargo, and at once dropped down dead; an Englishman followed to render assistance, and he shared the same fate; a third, a fourth and a fifth successively descended, and all—one Chinaman and four Englishmen—succumbed to the unknown and mysterious influence. It turned out that the cause of the fatality was carbonic acid gas, generated from a wet cargo of pepper and some kind of bark. The cargo had been on board only three or four days.—*Glasgow News*.

—A good speller is one who habitually gives the correct form to every word in his written exercise. It is only in printed and written language that correct spelling possesses any value. Oral spelling is not a test of accuracy. It is impossible to memorize by their letters all the words in our language. If we wish to make pupils excellent spellers, we must cultivate the powers of observation and memory. If habits of carelessness or inaccuracy are allowed to be formed in childhood, no ordinary efforts in after life can overcome the defects or supply the deficiencies that result from such bad habits.—*School Bulletin*.

—England has lately lost a prodigy of learning in the person of the Rev. Wm. Linwood, aged 61, whom Dr. Kennedy, headmaster of Shrewsbury school, himself a famous scholar, dubbed the best scholar of his age in England, and probably one of the best in the world. When he graduated first-class in classics at Oxford, on being asked what books he brought up for examination, he replied, "The whole range of Greek and Latin literature," and his pre-eminence was so conspicuous that the examiners were reported at the time to have considered whether, departing from the rule, they ought not to place his name, conspicuous and alone, at the head of the first class. Yet this man never got beyond a curacy—he did not take priest's orders—and for thirty-one years his life was passed in seclusion, devoted to preparing works in the classics, and latterly to the study of astrology.

# The Canada School Journal

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Extract from letter received from Hon. J. W. SIMMONDS, State Superintendent of Public Instruction, New Hampshire

Some weeks since I received the June No. of your Journal, at my home, Franklin, N. H. sent in answer to a request. That was a very valuable and instructive number. I read it with much interest. I ask you to send me the subsequent numbers and enrol me as a subscriber.

*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.*

TORONTO, NOVEMBER, 1878.

NOTE.—The attention of our readers is called to the premiums offered for subscriptions, on page 146, by which those getting up a club may obtain a copy of Worcester's Unabridged Dictionary.

## TOWNSHIP SCHOOL BOARDS.

We have before us a communication on this subject which we would gladly publish in full but for its length. The matter is one which admits of a good deal being said on both sides, and our correspondent puts very effectively the argument in favor of Township as against Section Boards of Trustees. To much of what he says a reply of some sort is possible, while some of it, on the other hand, seems to us unanswerable. His argument is, in brief, that, as a rule, Trustees under the present system are illiterate men, and, on that account, not competent to judge of a teacher's fitness for the position to which they appoint him; that they are unable to distinguish a good from a bad quality of education; that being residents of the immediate vicinity of the school, they are more liable to be swayed by local prejudices, to the detriment and annoyance of the teacher; and that on account of "neighbourly" feeling they often shrink from enforcing the compulsory education provisions of the School Act.

In "Subscriber's" opinion, under the Township Board system a better class of men would be obtainable, especially if some remuneration were attached to the office, and on this point we are disposed to agree with him. In fact, if trustees under the present system were, if not remunerated for their services, at least indemnified against actual loss, the chances of getting better men to serve on school boards would be greatly improved. No office could be more thankless than that of a rural school trustee, and we can conceive of no motive he has at present to perform his work aright except a high sense of duty. Popularity he need not look for if he does what he ought to do, for in order to do that expenditure must be incurred and taxes levied, and every imposer of taxes must be prepared to face a certain amount of obloquy as the inevitable consequence. We incline to the view that the low average qualification of trustees is due mainly to the unhealthy condi-

tion of public opinion with respect to education. One persistent phase of the disease is indifference, and we doubt whether the substitution of township for section boards would of itself do much to arouse a deeper interest in educational matters. It might be of some use, however, even in this direction, and certainly it could not operate in the contrary one.

We are disposed to attach a great deal more importance to two other considerations put forward by "Subscriber." One is the improved position of the teacher under the township board system, the other is the necessity for removing some of the existing inequalities in the educational burdens resting on the ratepayers. None can doubt that the teacher who has to deal with, say five men, who have under their charge a number of schools, is in a far better position, other things being equal, than the one who has to deal with three men in charge of a single school. The members of a township board cannot but have their horizon enlarged by laboring in a wider sphere and shouldering heavier responsibilities. They are placed in a position to be able to compare school with school and teacher with teacher, and the comparisons and contrasts thus thrust upon their notice must in course of time educate them by dissipating local prejudices and correcting extravagant ideas of the teacher's position and function. The kind of treatment which every teacher ought to receive at the hands of his employers, and which may not inaptly be described as "gentlemanly," he is far more likely to receive if he has to deal with township instead of section trustees. By having a large staff instead of one or two individuals to deal with, trustees, on the other hand, learn how to estimate more correctly the respective merits of teachers; and as they are less hampered than section trustees are by financial considerations, they can more easily obtain good men by pursuing a policy of faithful selection and judicious liberality.

The inequality of school taxation is so great an evil that when its magnitude comes to be fully realized one can only wonder how the section system has remained in existence so long. The township being the unit of the municipal system, it was adopted as a convenient starting point in the arrangement of school sections. If all the land in each township was alike good, and all townships were of a certain regulation size and shape, the evil we speak of would be of very small proportions, for all sections could be made then about equal in dimensions and tax-paying capacity. But townships are often of such peculiar shapes that the creation of one or two dwarfed or badly outlined sections cannot be avoided, while the land in some localities is often in great part swamp or marsh—quite uninhabitable and not seldom impassable. Occasionally a section, when of the proper size and shape, is intersected by a stream which has no bridge over it within the section limits. Owing to these and other causes, some ratepayers in a township have often to pay two or three times as much as their more fortunate neighbors in order to get the same quality of education for their children. If all sectional subdivisions in one of these unshapely townships were abolished, the same grade of school could be kept up in each locality at the expense of all, and the children could be allowed to attend the school most convenient to them.

But, after all, the strongest argument in favour of township school boards must be the success attending their working where they are already established. There are a few townships without sectional divisions in Ontario, and their number will doubtless increase more rapidly under the amended law. We should be glad to hear and publish intelligent and trustworthy accounts from these places of the way in which the system works as compared with the one it has superseded. We have no hesitation in recommending the township system for a trial, more especially as the law furnishes an easy method of going back to the old plan. We believe we are correct, however, in saying that no township in the Province which has given the township board plan a trial, has ever shown any disposition to revert to the section system.

### PRIVATE SCHOOLS.

"\* \* \* still private schools are a necessity and should be encouraged, and parents who can afford it should leave the public schools to the children of the poorer classes."

The above really appeared in the columns of a Canadian paper. The writer is certainly not yet very fully in sympathy with Canadian sentiment in regard to school matters. Think of a system of national schools based on the principles laid down in the remarkable sentence quoted. What a good plan it would be to have our public schools solely devoted to the education of the children of those who were too poor to pay for sending them anywhere else! How proud we would be of such schools! Thirty years ago, when Dr. Ryerson was laying the foundations of the public school system of Ontario, certain persons delighted to call them "pauper schools." An enlightened public opinion, however, soon took the sting from such a sneer, and to-day there is no one acquainted with the true state of Canadian thought and feeling who would dare to speak contemptuously of the public schools from a social standpoint. Wise legislation has secured for the public schools the best taught and best trained teachers in the country, and wise parents, rich as well as poor, desiring that their sons and daughters should receive the best education possible, send them of course to those teachers. The poor are fervently grateful, the rich abundantly thankful, and both justly proud of the scholastic privileges which their children enjoy in common. In the cities of Canada one may see the child of the laborer entering the same school door with the child from the home of luxury, who has been driven to school in her carriage. Our public schools are the schools of the nation, not of a certain class.

As the school law compels all to pay for the support of the public schools in proportion to their wealth, it follows that the very people who are urged by the writer (quoted to pay for the education of their children at private schools, are those who already pay most largely for the support of public schools. Why then should they be compelled to pay again for what they should reasonably expect the public schools to furnish? It would be most unreasonable to expect them to do so. The great majority of them decline to pay twice for the same thing,

and by their active interest have elevated the tone of the public schools morally, socially and educationally, so that such extravagance is quite unnecessary.

Still, while strongly combating the principle that the rich "ought to pay for the education of their children at private schools," we do not question their right to do so if they choose to have them so educated. There are many pupils for whom the more direct individual teaching of the private school is better than the class teaching of the public school. The programmes of study in private schools are not so inflexible as those in public schools, so that they can be more readily adapted to the peculiar requirements of particular pupils. The weak points of private schools are the lack of proper qualification on the part of the teachers, and the consequent lack of thoroughness in the teaching done by them. The time may come when the Government will be able to interfere and insist that every teacher, even in a private school, shall have a legal certificate to teach. It is certainly a weak point in our educational system, that a large number of the parents in our land should be allowed, on social or other grounds, to place the education of their children in the hands of persons who have in most cases very little fitness for the great work they profess to do.

### HISTORY IN SCHOOLS.

"General history is probably the most difficult subject in a school curriculum—most difficult, that is, to teach in such a way as to present at once a clear, full, and interesting view of a succession of events. Almost all books upon this subject fall into two faults—the one, common also to text-books of the history of individual nations and periods, of giving a great deal too much detail; the other, of forgetting that it is the history of the world that is to be told, not that of the several nations."

There are few teachers who will not endorse the above remarks, both as to the difficulty of the subject and the scarcity of good text-books, at the same time it is only fair to say that much could be done in the way of overcoming the difficulty and supplying the want by better teaching than is to be found in the majority of our schools. It is perhaps unfair to expect good teaching of a subject on which good text-books are so scarce, and for the presentation of which every teacher has, as a rule, to devise a method for himself. It is impossible, however, to arrive at any better results until we are thoroughly convinced that those already reached are very unsatisfactory; and with a view to illustrate the assertion that they are so, we subjoin a few examples of answers actually given to some of the questions in history at the recent matriculation examination in the University of Toronto. We take these, not because they are likely to be either above or below the average of historical answering from High School pupils, but simply because they happen to have fallen under our notice. As all the colleges are supplied to a large extent from the High Schools, we have no doubt the answering at the entrance examination of each one is just as open to exception, and if so we shall be happy to furnish additional illustrations of imperfect teaching—for we hold this to be the chief cause of the imperfect answering on the part of the boys and girls who come up for matriculation. The first question on the Pass History paper at the above examination was as follows:



Give a brief account of the origin, progress and result of the war between Athens and Syracuse.

The period covered by the requirements of the curriculum being from the Persian to the Peloponnesian War, both inclusive, it is at once apparent that the subject of the question is one of very great importance, and that the pupil who knows nothing or very little about it has either been badly instructed or is constitutionally incapable of learning history. We sub- j in a few of the answers given to the question, with the ad- mission, which we are glad to be able to make, that others handed in were almost entirely unexceptionable both in matter and form :—

(1.) The origin of the war with Syracuse was an outbreak between a Roman and Greek colony. It was carried on with great tardiness, and resulted in the final defeat of the Greeks and the loss of their fleet.

(2.) The war with Syracuse began because the Athenians were warring against some Sicilian town which requested aid from Syracuse. The Syracusians threw themselves and defeated the Athenian army and fleet afterwards; they also defeated the reinforcements. This war was full of defeats and losses. The result was that it weakened the Athenian State very much.

(3.) The war between Athens and Syracuse was begun by a personal quarrel, and it was continued at first with success to both sides, and in the end Athens was victorious and obtained some territory which formerly belonged to Syracuse.

(4.) Syracuse having interfered in the contest of supremacy between Athens and Sparta; supporting the latter; a Grecian army under Demosthenes was sent against the Syracusians. It progressed most unfavourable to the Greeks resulting in the total destruction to the army.

(5.) Origin—the people of Syracuse had done a great many injuries to the Athenians, hence the war unsuccessful at first, but when Pericles took the lead, the aspect of affairs changed for the Athenians—result defeat at Syracuse and triumph at Athens.

(6.) In the war between Athens and Syracuse the chief event was the siege of that city against which the Sicilian expedition was directed. The Athenians were completely defeated for by a stratagem the army was divided and defeated in turn.

Comment is almost unnecessary. The utter ignorance of facts betrayed by some of the answers and the still more general absence of historical perspective, shrink into insignificance compared with the want of skill in the construction of a connected discourse and even of ordinary sentences. We may add that the answers are given word for word, and though a candidate at an examination can hardly be expected to punctuate with precision it is not unreasonable to find fault with one who uses a sufficient number of marks, but persistently misplaces them. The second question was :—

Describe the part played in Greek History by Miltiades, Themistocles, and Pericles, comparing them as orators, statesmen and generals.

In answer to this one candidate writes as follows :—

Miltiades was the hero of Marathon in which battle he defeated the Persians. After this battle he was an idol of the people but died by their hands, he was as great a statesman and an orator as he was a general.

Themistocles is better known as an author and an orator than a general.

Pericles was a great naval commander and also a statesman. He was accused of several great crimes and being abroad at the time was sent and allowed to come home in his own trireme. Taking advantage of this he fled and after having been very kindly received by several of the neighbouring kings he returned to Athens and was there tried for the crime which he had committed and was made to drink the cup of poison. He was the greatest general and statesman of his day and also a very eloquent orator.

It is quite evident that the framer of this answer had in his mind's eye, while writing the last paragraph, at least three

different persons, not one of them being the real Pericles, of whom he clearly knew nothing at all. In answer to a request to notice briefly the Scipio gens one candidate writes as follows :

There were several Scipios. There were two by this name fought against Hannibal, altogether they were not successful, and they were slain. A son of the Scipio slain succeeded in conquering Hannibal.

Another in reply to a similar request respecting the Gracchus gens makes a still more ludicrous answer :—

Gracchus was another noted Roman family name; the principal person of this family was he of the triumvirate fame just described.

The reference in the last few words is to the answer to a previous question about the members of the First Triumvirate. The following is part of the answer referred to :—

The popularity and power of three persons in the Roman Empire—Pompey, Caesar, and Gracchus—required that they should divide the ruling of the empire amongst themselves for to prevent other parties from overcoming them as well as to save a war among themselves.

Pompey received Syria—Caesar, Gaul—Gracchus, Syria. Gracchus became embroiled in Asiatic wars, &c., &c.

Modern History fares little better in the way of accurate answering. The following two specimens must, however, suffice; they are in answer to a request to write a note on the "South Sea Bubble," a term about which it is quite inconceivable that any boy or girl well taught in English History should know absolutely nothing :—

(1.) The South Sea Bubble was started by a company who said that it would pay well and then it always failed.

(2.) The South Sea Bubble was a company formed for exporting things to the countries in the South Sea. Useless things were sent out which were never sold, and in this way they lost a great deal of money laid out. The commencement of one company set a lot of minor companies in motion which was another thing that helped break the great company, and when the crash did come so many failing at the same time there was no money to be had in the country.

The above specimens—and we are sorry that they are not less numerous than they are—suffice to prove the existence of several defects in the method of teaching history at present in vogue in most of the High Schools. In the first place, the text-books are not all that could be desired. If they were all well written, and constructed with a due regard to historical perspective, any boy of ordinary ability might safely be trusted to acquire a more intelligent knowledge of the subject by his own unaided exertions than most pupils now do with the aid of the teacher. In the second place, the teachers either do not perceive for themselves the relative importance of different classes of facts or they fail to impress their more accurate and philosophical views upon the minds of their pupils. And in the third place, the pupils do not get a sufficient amount of practice at writing answers to questions. No matter how well he may be up in his subject, the candidate cannot but be at a loss, as compared with others, if he has not been in the habit of putting what he knows about it in a concise form on paper.

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### Contributions and Correspondence.

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#### WHAT IS CRAM?

BY C. CLARKSON, B.A.

#### II.

Having defined, explained, and illustrated Bad Cram, it is now time to consider Good Cram. This is really the same thing as

vigorous, intelligent skilful, teaching. Thring believes that all learning is a more or less painful process. Good Cram aims to shorten and mitigate this pain. To give illustrations of the process would be simply to illustrate the shortest, the best, and the most rational methods of imparting instruction and of kindling deathless enthusiasm in the mind of the learner. Good Cram succeeds in placing the pupil face to face with the difficulties of learning, and also in rousing in him, as with the "diapason of the cannonade," that Spartan courage and undaunted valor which will lead him to battle with these difficulties till crowned either with death or victory. It puts the instructor in the position of a veteran Captain toiling at the head of his band to conduct his brave fellows safely and speedily on their difficult march in an enemy's country, through mountain gorges and along broken trails. They hear the stirring "Forward!" from their leader, and are forgetful of present pain or ease. The kindness, sympathy, energy, and sleepless vigilance of their guide puts their working powers to the test, for they feel that his eye is upon them and that work is the price of success. In other words, the whole spirit of Good Cram is martial, athletic, self-helping, and sympathetic. Some prominent features of Good as contrasted with Bad Cram are these:—It invariably teaches things as well as words. It pours in on the one hand instruction, and on the other hand questions it out from a hundred different points of view. It cross-examines, details, repeats, describes, examines, and corrects until the pupil has completely digested and assimilated the *Thought* as well as the language of his lessons. It does not neglect the memory. It aims at high perfection of memory. But it aims also to carry along the intelligence, and persistently refuses to proceed without it. It never rests satisfied until the pupil has obtained a constructive comprehension of the things with which he is dealing. Good Cram will not take a single step in the dark. It is not impatient for startling practical results. It breathes the very spirit of plodding, painstaking, laborious industry. It peremptorily refuses to proceed from the unknown to the unknown. It absolutely refuses to lay loads of useless lumber in the memory, its valued beast of burden. It makes complete conquest of a few things at once, and avoids the discouragement and defeat that come from lack of concentration. It goes singing cheerily from conquest to conquest, gathering courage at every step, and exulting as the struggle proceeds. Good Cram has no time to contemplate itself, and is too busy to fall into reverie. It banishes day-dreams, self-conceit, and self-consciousness. It deals with the real and the practical, and has neither taste nor leisure for castles in the air.

One remarkable feature is the continuous interest and pleasure the pupil receives from thoroughly mastering what he already thoroughly understands. While Bad Cram is grinding its melancholy hurdy-gurdy, or droning out its dismal Miserere, the subjects of Good Cram are rejoicing in conscious power and victory. They find delight and enjoyment. Good Cram is to them its own best reward. They ask no other wages than the triumphant feeling of success they constantly experience.

Its aim is to procure training, self-control, quickness, readiness and fertility. It never forgets that all real growth is slow, and prefers the development of the acorn to that of the squash. It is too much in desperate earnest to condescend to the trickery. Bad Cram frequently adopts to delude both its victims and their friends. It does not, and will not, aim chiefly at strutting ostentation before an incompetent tribunal of trustees and parents on the afternoon of a public examination. It aims at results as lasting as the mind, and disdains hollow ephemeral triumph. Good Cram communicates truth, and secures such intense mental activity and continuous thought about things, as distinguished from the names of things, that this belief can be truly said to rest on sufficient grounds.

## ELEMENTARY GEOGRAPHY.

BY JOHN HARPER, PRINCIPAL NORMAL SCHOOL, CHARLOTTETOWN, P.E.I.

Perhaps within the whole scope of elementary school work there is no exercise more popular with young teachers than that of drilling a class in geography; and while few of them adopt any definite plan in arranging their lessons on this subject, yet from their personal fondness for an exercise which tends to show their own and their pupils' activity, they generally succeed in exciting an interest in what can be made one of the most recreative of studies. A teacher is very frequently considered fit or unfit for his position by trustees and others according to the manner he conducts his classes when his judges are present. If the questions and answers are given without hesitation on the part of teacher and pupils, the visitor, who seldom has time or inclination to look under the surface of school work, usually goes away satisfied; and to satisfy the visitor is only too frequently the sole ambition of the young teacher. On this account, to be able to put fluent questions, and thereby draw out ready answers, is an accomplishment which no teacher can with prudence despise. Nor need any one despise it; for to be able to do so is undoubtedly the very first stage of an active teacher's success. It is true that the accomplishment may lead to *vox et præterea nihil*, a state of affairs which can only be guarded against by the common sense which to be successful a teacher must have. A young teacher is seldom a philosopher, and just as true is it that few trustees wish to employ a philosopher as a teacher. They want a practical man—one who will keep an orderly school, and instruct the children of the district in the usual branches. To be practical, then, as a general rule, is the young teacher's aim; and thus any exercise which enables him to promote activity among his pupils, in which he can adopt the simple and practical routine of "question and answer," is a favourite with him. It is no doubt on this account that the class studying geography is popular with him. With the map before him, he has full scope for "question and answer." To maintain discipline during the exercise is the easiest of tasks. The simplest questions, conceived with little or no mental effort, draw the attention of the whole class to the map and the names on it. The work is pleasant, because it is easy, and gives the teacher an opportunity of being fluent in speech and active in manner.

When it is said that a young teacher is seldom a philosopher, it must not be inferred that he ought not to be one. Indeed, in every stage of his work, when experience teaches him that the mere "question and answer" is not all that is required in developing young minds, there must be a philosophy, a plan, a method founded upon true scientific principles. To teach is not a simple game of give and take. The "question" is a means to an end, and unless there is purpose in his questions, there will be no intellectual development in his pupils. In giving a lesson on any subject, the very first requisite is that the teacher's own information on the subject should be well arranged in his own mind. Pupils can discern a threadbare intellect as easily as any one, and when a teacher addresses himself to the task of giving a lesson, he must do so with full faith in the fulness of his own knowledge. But this very fulness of knowledge, well arranged as it may be, must be rearranged when instruction is being imparted. Every lesson must be founded on a plan, and it is very certain that the very first part of the process is to find, by a series of simple questions, how much the pupil already knows about the subject in hand. In this way the door of the child's mind is opened, and it is only then that the teacher can fill the little storehouse with a proper amount of information.

"But how is all this necessary in the study of geography?" says



some teacher who is thoroughly practical. "Who requires any plan in pointing out places on a map?" To answer this very question is the purpose of this article; for we feel assured that if we can show the possibility of having a plan in giving a lesson in geography, which is such a thoroughly practical subject, there need be less trouble in showing that in giving any other lesson the teacher should have his matter well arranged. Let us look first at the subject as an introductory task in primary schools.

There is some difference of opinion among teachers in regard to the starting point of geography as an elementary exercise, so that the simple and the complex may retain their respective positions in the work of imparting instruction. Some say we should begin with the school, the playground and the neighbourhood; others maintain that the world as a globe or ball should be examined as a simple conception leading to a knowledge of its complex structure, and its physical and political subdivisions. A decision in favour of either plan depends upon the important question—where are children to be introduced to the study of geography? We believe that in an infant department first primary geography lessons can and ought to be given. What a field there is here for oral instruction! Lesson after lesson can be constructed by the teacher without much effort or previous preparation. The children can be so easily interested in what they see every day,—the school, the playground, the town, a river, mountain or a plain. But while we are all agreed that very young children can receive instruction of this kind, given in a series of interesting oral lessons, there are still some teachers who think that such is to a great extent superfluous. The child, when he has passed through the initiatory drill of the oral instruction already mentioned, has been sufficiently trained to take up the subject where the world is considered as a globe or ball, beginning thus with the simple and advancing by easy stages to the complex; and hence many are still very much in favour of these text-books which begin in the ordinary way of picturing the world as a unit in the solar system. It is undoubtedly the safer plan. The text-book should not be in the hands of the pupil until he can make use of it intelligently. A child who can read fluently is only then able to make use of the text-book, and by that time has received all the training necessary, by oral instruction, to make an intelligent start. Indeed the longer the text-book is kept out of the hands of the child, the better for his intellectual advancement. The early use of text-books has been the only reason why geography has been so "imperfectly and miserably taught. The hackneyed system of beginning with the book and carrying straight onward till the end is reached," is really worse than nothing.

Every intelligent teacher has his own plan in constructing an oral lesson; and it is well that it should be so. There is therefore no necessity for us to take note of any one plan in giving an oral lesson in geography. As long as the teacher remembers the leading principle—get the child interested before instructing him—he will not fail. In what may be termed systematic geography, however, the case is different; for as the text-book is supposed to be in daily use when the pupil has reached this stage, it is necessary that the teacher should adopt some plan which may not be interfered with by the arrangement of the book in use. In approaching the study of any country there should always be preliminary oral instruction, especially if the text-book has no introduction, based on interesting information, inserted at the beginning of its chapters. An elementary geography has lately been prepared for the schools in the Maritime Provinces, which is arranged on the popular plan of introductory reading lessons, preceded by inductive questions, and ending with the usual questions on the information contained in the lessons. As an experiment—"a new departure"—it seems to have met with much success;

and if the teacher can only carry out some such plan as this book suggests, by means of introductory *oral lessons* to the study of each country, there is no reason why the subject of geography may not be made even more popular than it is.

The introduction to a lesson in geography may be varied according to the desire of the teacher. A trip across the country from large town to large town, or a voyage round the coast from bay to bay, from promontory to promontory, will readily suggest itself. There is nothing so pleasant, however, to the children as a conversational sketch on the history of the country, which has for its main object the attracting of the attention of the class to some of the places mentioned on the map. In this way the map is soon recognized by the child as a bird's-eye view of the country, which ought to be spread out on the floor, but which for convenience is placed on the wall. Indeed any simple connected narrative may be adopted. For example, De Mont's explorations along the shores of Nova Scotia and New Brunswick, Champlain's voyages up the St. Lawrence, Franklin's travels in the North-west Territory, afford excellent lessons on the various parts of the Dominion of Canada; the American War of Independence, a lesson on the United States; Cortez in Mexico and Pizarro in Peru, lessons on Central and South America. As the teacher converses with the pupils on these subjects the places are being pointed out, until at length the complete picture of the country is imprinted on the child's mind.

But the child is not yet prepared to take up the text-book in order to pursue the study of the country described. If the results of the introductory lesson have been satisfactory, the teacher will find no difficulty in getting the attention of the class fixed upon the map next day. The idea of shape has been developed, and may be expressed in words. If the irregularities in the outline of the map are very marked, these may be noted. The child's eye thus naturally directs itself to the prominent points of land. Their relative positions may be placed on the blackboard by means of points, which may afterwards be connected by straight lines, thus making a triangle, a four-sided figure, or a polygon. The names can then be grouped into threes, and learned respectively from map and black board. Along the lines on the black board the teacher may now describe the large indentation which the pupils have pointed out on the map without mentioning their names. When the outline map is finished, the names of the bays and gulfs, arranged again in groups of three, may be learned by the pupils. This eventually will bring us in natural order to the divisions marked along the coast and painted in different colors on the map, while the divisions will bring us naturally to the towns. The map which has been drawn on the black board is of course to be reproduced by the pupils on their slates; but the teacher should not lose the opportunity, while it remains there, of giving a short lesson on distances.

Another plan of introducing the class to a particular map is as simple as the above, though in adopting it the teacher must be careful to use a map in which the physical features are well defined. One boy in the class is asked to trace with the pointer the longest range of mountains. The teacher now draws the attention of the class to the highest point in the range, giving the pupils an idea of height by comparison. No teacher should be without his units of heights and distances. This great range, considered as the back-bone of the country, will naturally lead to the secondary ranges and their heights. The direction of these ranges may be marked on the black board by thick lines, and the high peaks by means of a cross. The names having been learned as before, the great plains and valleys are pointed out, the slopes being indicated by the courses of the largest rivers. The lengths of the rivers are compared, the length of one being given. From the

rivers the lesson naturally leads to the towns on their banks or near them, and the towns to the colored divisions. In this way, by means of such lessons as have thus been cursorily outlined, the child is at length ready to prepare a home task marked off in the text-book, and though a half-hour each day in the week may have thus been taken up it has been time well spent. Let us look again at the ground gone over; it is not very remarkable for its compass.

I. Lesson.—A trip, a voyage, or an historical sketch.

II. Lesson.—The shape of the country, the capes, bays, divisions.

III. Lesson.—The back-bone of the country, the secondary ranges of mountains, the plains and valleys, the slopes, the rivers, the towns on or near the river, the divisions.

We need not say that this is only preliminary work in the study of geography. But it includes much of the work done in our public schools until the pupil is prepared to take up in an intelligent manner and discuss, by the assistance of the text-book, the climate, resources, trade, manufactures, revenue, &c., of a country.

### BOTANY IN THE SCHOOLS.

BY H. B. SPOTTON, M.A., PRINCIPAL BARRIE HIGH SCHOOL.

It is well known that though the subject of Botany has for some years occupied a place in the curriculum of our High and Public Schools, very little that can be called satisfactory has hitherto been accomplished in the teaching of it. Several reasons may be assigned for this, the most obvious of which, so far as the Public Schools are concerned, is that other and undoubtedly more important subjects have engrossed the attention of the teachers. There is a very general impression among the teachers, and the impression is shared to some extent by the public at large, that the efficiency of the schools, and consequently the public interests would be promoted by reducing the list of subjects, and concentrating the energies of teachers and pupils on the common English branches. This view may possibly be correct in the case of some rural sections of limited resources, but can hardly be held to apply to our many large and well-equipped Public Schools, some of which, indeed, under skilful management, are a standing refutation of the theory. In very few, however, has anything worthy of the name been accomplished in the teaching of Botany, and this is doubtless due, in some degree, to the want of qualification, in this particular direction, on the part of teachers. Whilst a knowledge of the elements of Chemistry is required from candidates for second-class certificates, Botany is required for first-class certificates only, and, as might be supposed, the first-class teachers are still comparatively few in number. But a second cause is unquestionably the want of a text-book specially adapted to Canadian requirements. Most of those at present in use, besides being adapted for other latitudes than ours, reverse what would seem to be the logical method, being, in fact, examples of procedure from the unknown to the known. As usually taught, the subject furnishes merely an exercise for the memory, and by no means an agreeable one, seeing that the things committed to memory are mainly technical terms. When properly studied, Botany will certainly be found to exercise the retentive faculties, but also, and chiefly, the observing powers. If teachers will qualify themselves—and they can easily do so—and will introduce the subject to their pupils, aiming at the cultivation of their powers of observation, they will find that the Botany lesson, so far from being regarded as an irksome task, will rather be looked forward to as an agreeable relaxation from the ordinary school work.

We propose in this paper to indicate very briefly, and in a sub-

sequent one to exhibit more fully, the method now followed by the best teachers in England and the United States, with very gratifying results, even in the case of quite young children. It will be assumed that the teacher has, by practical study on his own part, prepared himself to guide the course of his pupils' observations; that he has acquired his knowledge at the fountain-head, and is thus in a position to impart to those under his care some of that enthusiasm without which all teaching must sink to the level of drudgery. The very first thing, then, to be done is to put into the learner's hands some common plant. Almost any weed will answer the purpose. The pupil's attention is then to be directed to the various parts in succession: the root, the stem, the leaves, and finally the flower. The terms used to describe such conditions as present themselves are to be given and explained by the teacher *after* these conditions have been clearly apprehended by the class. The examination having been concluded, each pupil should be required to fill up a tabular form descriptive of the plant, but more particularly of the flower. Then other plants, judiciously selected with a view of exhibiting important variations in structure, are to be examined in a similar way, the tabular form being used in every instance to test the accuracy of the examination. Plants of the same Order may be successively examined, and, under skilful guidance, pupils will have no difficulty whatever in perceiving why such plants are grouped together. In other words, valuable lessons in classification may be imparted almost from the outset. When the principal modifications of plant-structure have thus been studied with the aid of the plants themselves the systematic study of the forms assumed by the different organs may be entered upon. This portion of the subject, usually such a grievous trial to the learner, will now be mastered with perfect ease. A few simple lessons may be added to the minute structure of plants, and the pupil will then be in a position to examine intelligently any plants that come in his way, and, with the aid of a suitable manual, to determine their names and relationship. The collection and preservation of specimens by the pupils should also be encouraged, and will be found to greatly enhance their interest in the work.

Under the plan thus briefly outlined, a very respectable knowledge of the flora of the district may be acquired in a single summer. In another paper the working of the system will be shown in detail, with examples of plant-examination, and suitable tabular forms of description.

### NATURAL SCIENCE AS A PART OF SCHOOL EDUCATION.

BY MR. G. C. HAY, PRINCIPAL ALBERT SCHOOL, ST. JOHN, N.B.

(Read at the St. John Teachers' Institute.)

The question how far natural science should form a part of common school education is daily receiving more earnest attention. Our common school course has already a liberal sprinkling of subjects such as Chemistry, Botany, Geology, Animal Physiology, &c. It is undeniable that an elementary knowledge at least of these natural sciences should be possessed by every scholar before he or she leaves our common schools. And here, as in every department of education, knowledge is power; and to pursue these subjects advantageously, very many teachers require to be instructed in what they may earnestly desire to communicate to their pupils. Science has rapidly enlarged its borders since many of us left the common school, seminary or college, years ago, and not only that, but many of its principles have been so simplified that they can be grasped now by the child as soon he enters school. If the teacher has been too much absorbed in his school-room work to keep pace with this advance, the knowledge of the natural sciences that he

gained a dozen years ago is about as useful to him as the note which he may have laid by of a defunct banking institution. The domain of the natural sciences is an extensive one, and it may well seem a Herculean task for the teacher to attempt to gain even sufficient knowledge to teach the elements of those scientific subjects which are laid down in the common school course. But I have no hesitation in declaring that we as teachers are behind the age if we neglect to learn at least the A, B, C of the sciences, and to acquaint ourselves fairly or thoroughly, according to our advantages and means, with at least one department of natural science.

And no class of workers can study natural science and receive more direct benefits therefrom than teachers. Going from the exhausting labors of the school-room to the fields to study nature—"That elder Scripture, writ by God's own hand"—the teacher can in an hour or two add much to his educational resources; and he can lay up an amount of mental energy that will be a power to him in his labors for the next day.

But as to the method of teaching one or more branches of natural science. The instruction must be thoroughly practical, or the time of teacher and pupil is thrown away. How mightily is a pupil's mind enlightened if, for instance, you tell him that air is composed mainly of nitrogen and oxygen, in the proportions of four to one, and then relate to him the effects of these separate gases! But manufacture them in the presence of the school, illustrate their effects, and you appeal to the intelligence of your pupils, and create a stimulus that no mere oral teaching could accomplish. Looking back on our school times, how many days are there of which we have preserved no recollection—days in which we received the same stereotyped lessons; but how vivid is the recollection of a certain day, perhaps, when intelligence was suddenly aroused—when a truth was presented to us having the stamp of originality!

Make teaching in science real. Ask nature questions. Teach your pupils to ask her too. She has her answers to give to all—that is to all who ask questions in earnest, at the right time and in the right way. To be sure, experiments are attended with some trouble and expense, and they need careful practice before attempting them in the school-room. Faraday was accustomed to practise his experiments in his laboratory until assured of success, before attempting them in presence of his classes. It is by attending thoroughly and carefully to minor details that some of the most difficult problems in education are solved. An omission of an experiment in illustration of a scientific truth, because it is too much trouble, may destroy the effect of a whole lesson; while with the skilful use of a few simple materials the teacher might have cultivated the observing powers and have quickened the intelligence of his pupils. How many graduates from our common schools are in complete ignorance of the simplest elements of geology, botany and zoology. They know that stones, plants and animals exist, and that is about all; but no attempt at a classification of these have entered their minds. How many pupils attending our schools can classify rocks and soils—can give you an account of the nature and uses of plants, or can describe the habits of the wild animals of New Brunswick? No; a visit to the beautiful country beyond Lily Lake will convince one that the street arab—I hope not the average school-boy—has visited those woods not to study the habits of birds, but to stone them and shoot them. These woods, I may say, are almost destitute of birds, on account of the cruel warfare that has been carried on against them by large and small boys. The average boy is by nature an enemy to all small animals. He seems to have a grudge against birds and squirrels, which he feels bound to pay at sight. Now, you may tell a boy that it is wrong to kill birds; but will that cure the propensity? Not in all cases. But teach the boy to

reason; explain to him and teach him the admirable structure of birds; teach him to study bird life, to observe their habits, uses, varieties of form and plumage, and ten chances to one he will be satisfied with a more rational enjoyment in future than that of killing them.

I would enumerate the following means to secure interest in natural science in schools. First, the less of formal instruction in the school-room the better. A short lesson, say of fifteen or twenty minutes' duration, in which certain points may be touched upon that will be valuable in the field lesson that is to follow, would be all that I would advise in the school-room, in summer at least.

In the second place, if there is a school library—and there should be one, large or small, in every school—it should embrace as many works as possible on natural history and science; and the children should be stimulated to read these instead of the fiction that is poisoning and polluting the minds of youth.

In the third place, every school that would successfully prosecute the study of natural science should have a collection embracing as far as possible the minerals and plants found in the neighborhood. Let every boy and girl in the school be led to feel that he or she as an individual has an interest in preserving and enlarging that collection, and that when something rare and valuable is added to the museum, the products and resources of the neighborhood are being developed. Give the child to understand that he is doing some good, and he will work with enthusiasm. He will lay the foundation for future usefulness in life, at the same time he is educating himself. Remember that I expect this will not be done during school hours, but that the work in natural science will be a part of the play, and such a healthful play too that the student will be mentally and physical better fitted to pursue and enjoy his other studies.

Lastly, in getting the student to describe specimens in his own words, aided by such technical terms as have been taught him, you give him a power of language, the power to make a statement. And have you ever noticed in your own school, and possibly in every school you go into, the want of ability in almost every pupil "to make a clear oral statement, one of the most useful powers which an educated man can possess, no matter what his profession?" These are the words of President Eliot, in his late report of Harvard University; and the words should be borne in mind as well by the professor in a college. When the pupil has the power, in answering your questions on a given subject, to present his ideas in good shape, using just enough of words to express his meaning clearly and intelligently, in correct and well-chosen English, that pupil has a power which you cannot over-estimate. Now, I think that if you teach children to describe natural objects, as plants, minerals, or animals, you cultivate their powers of expression—powers which they can utilize in after life, perhaps, with the greatest possible advantage to themselves.

#### CORRECTION.

To the Editor of the Canada School Journal.

SIR.—I beg to correct the report of the Provincial Teachers' Association given in your September number, so far as it relates to the report of the committee which was appointed to consider the Model School question. The committee reported among other things that "6. Head Masters of County Model Schools should be ex officio members of the County Boards of Examiners, provided that they hold certificates as examiners under the present regulation."

When the committee presented their report to the Association this clause was voted down, and ordered to be struck out. You

have omitted to mention this decision of the Association while giving publicity to the decision of its committee. I have no doubt it was a case of accidental omission.

Your obedient servant,  
 October 25, 1878. VERITAS.

To the Editor of the Canada School Journal.

SIR,—As several teachers from Ontario have written to me respecting the chance for teachers in this country, instead of answering by private letter I thought it would be better for teachers in general to have my opinion inserted, if permitted, in your valuable columns. The chances are poor, as the schools are few and half of them keep open only six months in the year, and for the other half the supply is equal to the demand. The attendance is very irregular, the attention of the people being so much absorbed in farming and land speculation as to allow but little time to devote to educational matters. The consequence is they are very indifferent about remunerating liberally the faithful teacher for the time spent in preparing for his profession. Salaries range of course from \$300 to \$500, but \$500 is not so good here as \$400 in Ontario, when the cost of living is taken into account. It would be unwise, I think, to abandon teaching in Ontario for sake of the profession as it is here.

Yours, &c.,  
 Burnside, Manitoba. RICHARD EDWARDS.

To the Editor of the Canada School Journal.

DEAR SIR,—Your valuable JOURNAL contains able and practical articles on "How to Teach" nearly all the subjects on the school curriculum. Will some of your writers favor us with a few suggestions as to the best method of teaching Geometry, particularly how to make it interesting to pupils not naturally fond of mathematics?

Kingston, Oct. 28, 1878. SUBSCRIBER.

Mathematical Department.

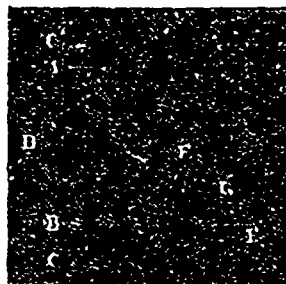
Communications intended for this part of the JOURNAL should be on separate sheets, written on only one side, and properly paged to prevent mistakes.  
 ALFRED BAKER, M.A., Editor.

QUADRATICS IN GEOMETRICAL PROBLEMS.

The solution of a geometrical problem is often equivalent to the solution of a quadratic equation, especially in cases where we are required to divide a line into parts so that rectangles or squares whose sides are the parts may be of given area. In such cases the algebraic solution will frequently suggest the geometrical construction. A few examples will best illustrate our meaning:

1. To divide a line externally so that the rectangle under the segments may be of given magnitude.

Let  $AB$  be the given straight line, and suppose that when it is produced to  $C$  the rectangle  $AC, CB$  is of the required magnitude, i.e., equal to the square on  $D$ , say. Let  $AB$  be represented by  $a$ ,  $BC$  by  $x$  and  $D$  by  $b$ . Then the conditions of the problem give us the equation  $x(a+x)=b^2$ , whence  $x = \frac{-a \pm \sqrt{a^2 + 4b^2}}{2}$ . Taking the upper



sign, how does this value of  $x$  direct us to proceed? From  $B$  draw  $BE$  at right angles to  $AB$  and equal to twice  $D$ . Then the squares on  $AB, BE$  will be the geometrical equivalent of  $a^2 + 4b^2$ , and therefore the line  $AE$  corresponds to  $\sqrt{a^2 + 4b^2}$ . From

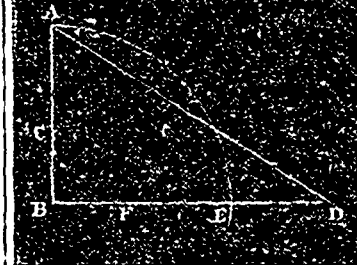
$\sqrt{a^2 + 4b^2}$  we are to take  $a$ , hence from  $AE$  cut off  $AF$  equal to  $AB$ , the remainder we are directed to divide by 2, accordingly bisect  $FE$  in  $G$ . We must now by geometrical reasoning show that  $AF$  (equal to  $AB$ ) is produced to  $G$ , so that the rectangle  $AG, GF$  is equal to the square on  $D$ .  $AE^2 = AF^2 + 2AF \cdot FE + FE^2 =$

$AF^2 + 4AF \cdot FG + 4FG^2 = AF^2 + 4AG \cdot GF = AB^2 + 4AG \cdot GF$ . Also,  $AE^2 = AB^2 + BE^2$ ; therefore,  $4AG \cdot GF = BE^2 =$  four times the square on  $D$ . Hence  $BC$  must be equal to  $FG$ . In the value of  $x$ , the lower sign has reference to the point  $C'$  in  $BA$  produced,  $AC'$  being equal to  $BC$ . The reader will remember that in geometry oppositeness of sign indicate oppositeness of direction, and the

value  $\frac{-a - \sqrt{a^2 + 4b^2}}{2}$  takes us to a point  $C'$  in  $BA$  (opposite to  $BC$ ), such that  $BC' = \frac{a + \sqrt{a^2 + 4b^2}}{2}$  without regard to sign. It is easy to show that  $AC' = BC$ .

2. Divide a given straight line into two parts, such that the squares on the whole line and on one of the parts shall be double the square on the other part.

Let  $AB$  be the given straight line, and suppose that it is divided in  $C$  so that the squares on  $AB, BC$  are together double the square on  $AC$ . Let  $AB$  be represented by  $a$ , and  $AC$  by  $x$ , then  $BC$  is represented by  $a - x$ ; and the conditions of the problem give us the equation  $a^2 + (a - x)^2 = 2x^2$ ; whence  $x = \frac{-a \pm \sqrt{3a^2}}{2}$



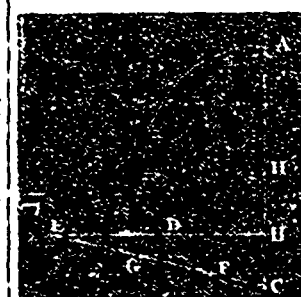
whence  $x = \frac{-a \pm \sqrt{3a^2}}{2}$

Taking the upper sign, this value of  $x$  directs us to proceed as follows. From  $B$  draw  $BD$  at right angles to  $AB$ , and at  $A$  in  $BA$  make the angle  $BAD$  equal to the angle of an equilateral triangle. Then  $AD = 2AB$ ; hence  $BD^2 = 3AB^2$ , or

$BD$  is the geometrical equivalent of  $\sqrt{3a^2}$ . From  $\sqrt{3a^2}$  we are directed to take  $a$ ; hence from  $BD$  cut off  $BE$  equal to  $BA$ , and the remainder  $ED$  is such that if from  $EB$  (equal to  $AB$ ) we cut off  $EF$  equal to  $ED$ ,  $2EF^2 = EB^2 + BF^2$ . With the above construction it remains to establish this by geometrical reasoning. Since  $DF$  is bisected in  $E$  and produced to  $B$ ,  $DB^2 + BF^2 = 2DE^2 + 2EB^2$ . But  $DB^2 = 3AB^2 = 3EB^2$ . Hence  $3EB^2 + BF^2 = 2EF^2 + 2EB^2$ ; or  $EB^2 + BF^2 = 2EF^2$ . The other (negative) value of  $x$  indicates that  $AB$  may be externally divided so that its segments shall fulfil the required conditions. In  $BA$  produced we are to take a point  $C'$ , so that  $AC' = a + \sqrt{3a^2}$ , or  $= AB + BD$ ; then  $AB^2 + BC'^2 = 2AC'^2$ . For from  $AC'$  cut off  $AG$  equal to  $AB$ . Then (Euc. Bk. II., Prop. 10)  $BC'^2 + C'G^2 = 2BA^2 + 2AC'^2$ ; or  $BC'^2 + 8AB^2 = 2AB^2 + 2AC'^2$ ; or  $BC'^2 + AB^2 = 2AC'^2$ .

3. To divide a given straight line into two parts, such that the square on one part may be equal to the rectangle contained by the other part and another given straight line.

Let  $AB, BC$  be the two given straight lines, and let them be represented by  $a$  and  $b$  respectively. Let  $x$  be the part of  $AB$  whose square is equal to the rectangle contained by the other part and  $BC$ . Then the conditions of the problem give us the equation  $x^2 = b(a - x)$ ; whence  $x = \frac{-b \pm \sqrt{b^2 + 4ab}}{2}$ . Taking the upper sign,



this value of  $x$  gives us the following construction. Place  $AB, BC$  in the same straight line. Draw  $BD$  at right angles to  $AC$ . Let the semicircle on  $AC$  cut  $BD$  in  $D$ ; then  $BD^2 = AB \cdot BC$ . If  $BD$  be produced  $E$ , so that  $DE$  equals  $DB$ ,  $BE^2 = 4AB \cdot BC$ , and  $EC$  will be the geometrical equivalent of  $\sqrt{b^2 + 4ab}$ . From  $\sqrt{b^2 + 4ab}$  we are directed to take  $b$ , and to divide the difference by 2. Hence cut off  $CF$  from  $CE$  equal to  $CB$ , and bi-

sect  $FE$  in  $G$ . Then if from  $AB$  a part equal to  $EG$  be taken, the rectangle contained by the remainder and  $BC$  will be equal to the square on  $EG$ . For (Euc. Bk. II. Prop. 10)  $EC^2 + CF^2 = 2EG^2 + 2GF^2$ ; or  $EB^2 + BC^2 + BC^2 = 2EG^2 + 2EG^2 + 4EG \cdot CF + 2CF^2$ ; or  $AB \cdot BC + 2BC^2 - 4EG^2 + 4EG \cdot BC + 2BC^2$ ; or  $AB \cdot BC = EG^2 + EG \cdot BC$ , or  $BC(AB - EG) = EG^2$ ; or, if  $AH = EG$ ,  $AH^2 = HB \cdot BC$ . In constructing for the negative root, we would produce  $BA$  to  $H'$ , making  $AH'$  equal to half the sum of  $EC, CB$ . Then the square on  $AH'$  would be equal to the rectangle  $H'B, BC$ .

Many applications of the foregoing may be found among the deductions on Euc., Bk. II. The method we have given has the advantage of readily furnishing two constructions for such problems.

SOLUTIONS OF PROBLEMS IN OCTOBER NUMBER.

1. The following is by Mr. R. R. Cochrane, Ottawa: From  $AB$  cut off  $AF=AE$ ; and from  $BA$  cut off  $BG=BD$ . Join  $OF, OG, DE$ , and draw  $DG$  cutting  $BO$  in  $H$ . Then, evidently, the triangle  $AFO$  is equal to the triangle  $AEO$ , and the triangle  $BGO$  to the triangle  $BDO$  in all respects. It remains to shew that the triangle  $FOG$  is equal in area to the triangle  $EOD$ , or to the triangle  $FOD$ , to which last  $EOD$  is evidently equal. And these triangles  $FOD, FOG$  are equal if  $FO$  be parallel to  $GD$ . Now the right angle  $BHG$  is equal to the right angle at  $C$ , and the angle  $GBH$  is equal to the angle  $EBC$ ; therefore the remaining angles  $BGH, BEC$  are equal. But  $BEC, BFO$  are equal, being exterior angles of the triangles  $AEO, AFO$ ; therefore  $BGH$  is equal to  $BFO$  and  $GD, FO$  are parallel. Good solutions were also given by Mr. J. J. Magee, Uxbridge, and by J. M., Oshawa.

2. Let  $T$  be the tension of the string;  $m, m'$  the masses of  $W$  and  $P$  respectively,  $\alpha$  the inclination of the plane. The moving force on  $W$  up the plane  $= T - mg \sin \alpha$ ; and  $\therefore$  acceln. of  $W = \frac{T - mg \sin \alpha}{m}$ . Similarly the acceleration of  $P = \frac{m'g - T}{m'}$ . And, since the string is inextensible, acceln. of  $P = -$  acceln. of  $W$ ;  $\therefore \frac{T - mg \sin \alpha}{m} = - \frac{m'g - T}{m'}$ . Whence  $T = \frac{m m' g (1 + \sin \alpha)}{m + m'}$   $= \frac{mg \cdot m' g (1 + \sin \alpha)}{mg + m'g} = \frac{PW (1 + \sin \alpha)}{P + W}$ , expressing the tension in terms of the weights, since  $P = m'g, W = mg$ .

Also, substituting this value of  $T$  in the acceleration of either  $P$  or  $W$ , we have acceleration  $= \frac{g(m' - m \sin \alpha)}{m + m'} = \frac{g(P - W \sin \alpha)}{P + W}$  using weights for masses, weights being proportional to them. Let  $h =$  height of plane. Then length of plane  $= \frac{h}{\sin \alpha}$ . Also, from formula  $s = \frac{1}{2} ft^2$ , (time up plane) $^2 = \frac{\text{length of plane} \times 2}{\text{acceleration}} = \frac{2h(P+W)}{g(P \sin \alpha - W \sin^2 \alpha)}$ ; and the time will be a minimum when  $P \sin \alpha - W \sin^2 \alpha$  is a maximum. Putting this equal to  $x$  and solving as a quadratic in  $\sin \alpha$ , we see that the greatest value  $x$  can give is  $\frac{P^2}{4W}$ , and this value of  $x$  gives  $\sin \alpha = \frac{P}{2W}$ , which affords the inclination of the plane when the time up it is a minimum. The above, with slight alterations, is the solution of Mr. Shaw, the proposer.

3. The following solution is by the proposer, Mr. R. R. Cochrane, Ottawa:

Produce  $AB$  to  $E$  so that  $AE = 2AB$ . Draw  $EF$  parallel to  $AC$  meeting  $AD$  produced in  $F$ . Through  $B$  draw  $BG$  parallel to  $EF$  r  $AC$ . Then  $EF = 2, BG$  (Euc. vi, 4); But  $CD = 2DB$  (hyp.)

$\therefore AC = 2BG$ ;  $\therefore AC = EF$ , and they are parallel;  $\therefore$  if  $CF$  be joined,  $AEEF$  is a parallelogram and  $AF$  is its diagonal.

$\therefore AF$  represents the resultant of forces represented by  $2AB$  and  $AC$ .

Again  $\therefore AB = BE$ ;  $\therefore AG = GF$ ;  $\therefore AF = 2AG$ .

But  $AD = 2DG$ ;  $\therefore AD = \frac{2}{3} AG = \frac{1}{3} AF$ .

$\therefore AD = \frac{1}{3}$  resultant of given forces.

Solutions also by Mr. J. J. Magee, Uxbridge, J. M., F. J. Sykes, A. T. DeLury, and E. T. Stemon, of Oshawa.

PROBLEMS FOR SOLUTION.

1. Given the perpendicular of a plane triangle 800, the sum of the two sides 1155, and the difference of the segments of the base 495; required the base and the sides. J. S., Bracobridge.

2. There is a windmill eight feet in diameter, having eight blades, each three feet long and two in width; what is the power they will exert on a cog wheel two feet in diameter on the horizontal shaft, the rate of the wind being fifteen miles per hour, or exerting a pressure of about one pound to the square foot. Also at what angle to the breeze will the greatest power be obtained, and what will be the horse-power? A. M. SHAW, Barrington, N.S.

H. I. J., Otterville. Brackets should be used, either  $(\frac{1}{2} \div \frac{1}{3}) \times \frac{1}{2}$ , or  $\frac{1}{2} \div (\frac{1}{2} \times \frac{1}{3})$ , according to the meaning intended. We consider a candidate at an examination justified in taking it either way if brackets are omitted.

Practical Department.

Queries in relation to methods of teaching, discipline, school management, &c., will be answered in this department. J. HUGHES, Edrton.

MISTAKES IN TEACHING.

No. I.

It is a mistake to try to teach without having good order. No teacher should think of teaching at all until he had established between himself and his class a perfect understanding regarding this matter; until he had clearly shown his pupils that it was necessary that one person should be absolutely master, and that he was the person entitled to that position by virtue of his office, his superior intelligence, experience, and force of character. Without order in his business and among his employees, no business man can hope to be successful. Without the perfect order which we call discipline in an army it is a disorganized mob, incapable, unmanageable, and at the mercy of its foes. Without order in a school, at least one-half of a teacher's power is wasted, partly through the inattention of the scholars, and partly in reducing the disorder to what some teachers regard as *endurable* limits. Experience has proved this, and therefore every good teacher insists on having good order before attempting to teach. "The husband who starts in his matrimonial career as lieutenant never gets promotion." A teacher is rarely promoted in a school in which he has not earned his position by the close of the first day. There is a lamentable weakness about a teacher who allows his scholars to form the public opinion of his school, and establish its character independent of him.

It is a mistake to suppose that children like to have their own way at school. No greater mistake could be made. Children like order better than disorder. So would all grown people, if they had been properly trained at school. Children are most joyous and happy, and therefore most thoroughly educated, in those schools where the discipline is strict without being severe. There is no quicker way for a teacher to lose the respect of his pupils than by over-in-

dulging them. They will not chafe long under just restraint. Control develops reverence.

*It is a mistake to think that order means perfect quiet or stillness.* Many classes are quiet through sheer listlessness or dullness. What is needed in a school is the order of life, not the order of death. Order means having every child in a school attending to his own duty, and to that alone, and attending to it, of course, in the quietest possible manner. So long as no individual in a school is attending to another's business, or doing anything to attract the attention of any person else, I would not sacrifice efficiency for the sake of silence. A good stiff breeze is better than a dead calm. The breeze is all right if it does not come in squalls. Perfect order may be quite in harmony with a considerable amount of noise. In a factory, for instance, although the noise of machinery may be deafening, and the bustling of the workmen may appear quite confusing to an outsider, everything is usually in the most perfect order. Order does not necessarily mean repression. The order needed in school is work systematized. This is genuine order; the only kind that will last.

*It is a mistake to try to startle a class into being orderly.* Some teachers strike the desk; stamp on the floor; call "order, order, order;" or ring a bell to cause quietness. A thunder clap startles us into stillness for a few moments, but even thunder would soon lose its effect if controlled by some teachers. Disorder should be subdued, not terrified. It would be a poor way to calm a nervous child by firing cannons near it. A teacher must be deliberate, not impulsive and explosive. If he wishes to secure good order he must be orderly himself. Even the occasional ringing of the bell for order is a mistake. It disturbs every pupil, while perhaps only two or three are offending, and after a time loses its effect, because it speaks directly to no one, and gives in general terms to a whole class what should be given particularly to certain individuals. The bell is a valuable aid in securing discipline. It may be used with great profit instead of the teacher's voice, as a signal for commencing, changing, or closing exercises; or for standing up, sitting down, assembling, dismissing etc., but it never should be used to give a direct command for order. It should never convey a command that does not apply with equal force to each member of the school.

*It is a mistake for the teacher to try to drown the noise of his pupils by making a greater noise himself.* Some teachers attempt to force out disorder by talking in a loud tone and on a high key. They may avoid hearing any noise but that made by themselves in this way, but they are certain to increase the noise made by their pupils. The pupils will have to speak louder in order to hear each other. A low tone is much more certain to produce quietness than a high tone. There are certain noises which render children nervous and irritable. The noise made in filing a saw, and that made by a teacher talking in a high key, are two of them.

*It is a mistake to call for order in general terms, however quietly it may be done.* Disorder always begins with one or two, and no rational teacher allows it to proceed until it has spread throughout the whole class before stopping it. It should be quieted as soon as it commences. This should be done by a meaning look, a question quietly asked, or in some natural way that will attract the attention of no person but those immediately concerned. It is enough that the disorderly pupil should lose his time without compelling the whole school to listen to an absurd method of quieting him.

*It is a mistake to ask questions to pupils in rotation.* Many commence at the head of the class, facing the pupil there, and after putting him through as though he were the only pupil in the class, they get over number two in a similar manner, and so on to the end of the class, if happily that part be reached before the time for closing the lesson. They can teach but one at a time. The

class of such a teacher should consist of *one little pupil*, so that he could see the whole of it at once.

*No pupil should ever know who is likely to receive a question until it has been given.* No name should be mentioned, no motion made or look given to indicate who is to answer, until the question has been asked. Many teachers make the mistake of looking steadily (while proposing a question) at the pupil whom they expect to answer it. This should be so carefully avoided as to leave every pupil completely in the dark as to the intentions of the teacher. Each pupil should know that he may be asked to answer every question. Every one will thus be compelled to attend all the time; while if questions are asked in rotation, a pupil, after answering his question, may discuss the circus, or the last lacrosse match, or the next baseball match, or any other appropriate topic that may chance to come into his mind, until his turn is coming again. It is impossible to maintain good order in a natural way by such a method of questioning.

*It is a mistake to repeat a question for the sake of those who do not hear it the first time.* To do so is simply an extra inducement to the scholars to be inattentive. If a pupil knows that your question is only to be asked once, he will listen to it the first time. If he knows that, when you wish him to answer, you will shake him to get his attention, and then repeat your question, he will wait for his shaking. A pupil deserves more punishment for not knowing the question, than for not being able to give its answer.

*It is a mistake to look fixedly at the pupil who is reading or answering.* If there is one pupil who does not need watching, he is that one. He is certain to be attending to his work. We should attend to him with the ear, to all others with the eye. Many teachers, while teaching a reading lesson, divide their attention about equally between their book and the pupil who is reading. Such teachers never have good order or interested classes. In reality, neither the book nor the pupil reading should need the attention of the teacher's eye.

*It is a mistake to assign lessons without previously explaining them.* One of our most important duties as teachers is to teach children how to study, and what to study most carefully in connection with each lesson. To assign a lesson to a child without giving him some idea of its leading features, what you will expect him to know, or explain or prove next day; and how and where he can obtain most light on difficult parts, seems a good deal like sending him into a wilderness to fetch something he has never seen, and which you have not even described to him.

## MENTAL ARITHMETIC. V.

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

### METHODS.

Proceeding with the analysis of the number four. Three balls and one ball are four balls, one ball and three balls are four balls, thus showing all the possible ways of forming the number four by groups of smaller numbers. Then apply the knowledge thus gained to subtraction, &c. Three and one are four, therefore one from four leaves three, and three from four leaves one; two and two are four, therefore two from four leaves two; there are two twos in four, or two is contained in four two times; there are four one's in four, or one is contained four times in four; three is contained once in four with one remainder.

As already intimated, all these ideas are to be conveyed to the mind by means of visible objects: books, pencils, counters, the balls of the numeral frame, marks on the blackboard and the like, &c.



It may be remarked that the balls, marks, &c., should be mechanically arranged so as to facilitate the acquisition of the various combinations; for example, the number four may be represented by the following groups: (1)  $\cdot \cdot \cdot \cdot$ , showing that there are four ones in four, &c.; (2)  $\cdot \cdot$  showing that four contains two twice, &c.,

(3)  $\cdot \cdot \cdot$  showing that three and one are four, one and three are four, three from four leaves one, one from four leaves three, and three is contained once in four, with one left (or remainder). The teacher then proceeds, as before, to give practical problems. John paid two cents for a pear and two more for apples, how many did he spend? Susie has four apples, and gives her brother two of them, how many has she left? Willie paid three cents for a penholder and one cent for a pear, how many did he pay for both? James has four apples and gives three to his sister, how many had he left? What will four pencils cost at one cent each? What will two peaches cost at two cents each? I have four pencils, and I give one pencil to each of a number of boys, how many will receive a pencil? Mary gives four apples to two class-mates, how many does each receive? &c., &c. If the pupils have learned the notation of the numbers (from one to ten)—and unless they are very young, this may be given them almost simultaneously with the notions of the numbers—they may, after thorough oral drill, be taught to express by figures the combinations as given above, e. g.,

	1			1					
1	1	2	1	1	1	2	1	3	
1	1	1	2	1	2	2	3	1	
2,	3,	3,	3,	4,	4,	4,	4,	4,	4;

$1+1=2, 2+1=3, 1+1+1+1=4$ , &c., &c. Also,  $2-1=1, 3-1=2, 3-2=1, 4-1=3, 4-3=1, 4-2=2$ , &c., &c.; for there is no reason why a child should not now be taught that  $1+1=2$  is simply another mode of expression for 1 and 1 are 2.

The teacher next takes up the analysis of the number FIVE.  $1+1+1+1+1=5$  (we shall use the numerals for brevity);  $4+1=5, 1+4=5; 3+2=5, 2+3=5; 5-2=3, 5-3=2; 5-1=4, 5-4=1$ , &c.; 1 is contained 5 times in 5, 2 is contained 2 times in 5, with 1 over, 3 is contained once with 2 over, &c. As before, these various combinations are represented by proper arrangements of the balls, marks on board or slate, &c.:

$\cdot \cdot \cdot \cdot$ , showing that  $4+1=5, 1+4=5; 5-1=4, 5-4=1$ .

Also,  $\cdot \cdot \cdot$ , showing that  $3+2=5, 2+3=5, 5-2=3, 5-3=2; 3$  is contained once in 5 with 2 over,  $2+2+1=5$ . Then children may be required to give on their slates the ordinary mechanical arrangements:

	1			1
1	2	3	1	
3	3	2	2	
5,	5,	5,	5.	

Let a variety of questions combining several operations be now given:  $2+2+1-3$ =how many?  $5-2+1-3$ =how many?  $2+2-3$ =how many? &c. Then practical problems may be given, as Henry had 4 marbles and his brother gave him 1 more, how many had he then? Mary had 3 pins and found 2 more, how many had she then? Charles had 5 glass alleys, he lost 1 and gave 2 to his brother, how many had he left? John bought 5 pens at 1 cent each, how many cents did he spend? Kate had 5 roses, she gave two of her class-mates 2 each, how many had she left? James divided 5 apples amongst his class-fellows, giving one apple to each, how many received one apple? Willie has 5 cents, he

keeps one and spends the rest in pens at 2 cents each, how many pens does he get? These and many similar exercises should be given till the pupils can readily answer any problem in the fundamental rules involving only numbers from one to five.

Proceed now with the analysis of the number six. Exhibit the various ways in which the number can be made up. Place 6 balls in a row, 6 marks on slate, &c., and let the class see that  $6=6$  ones, that one may be taken six times from six. For the other combinations make suitable arrangements of the balls, marks, &c., as e.g.:

$\cdot \cdot \cdot \cdot \cdot \cdot$  showing that  $5+1=6, 1+5=6, 6-5=1, 6-1=5;$   
 $\cdot \cdot \cdot \cdot$  showing that  $4+2=6, 2+4=6, 6-4=2, 6-2=4;$   
 $\cdot \cdot \cdot$  showing that  $2+2+2=6, 3+3=6, 2 \times 3=6, 3 \times 2=6, 6-3=3.$

Give practice also in other forms of analysis, e.g.,  $6=2+1+1+1+1=2+4$  times 1;  $6=2+2+1+1; 6=3+2+1; 6=4+1+1$ , &c., &c.  $6+4-3$ =how many?  $5-1+2-4$ =how many? &c. Then give practical questions: 4 apples and 2 apples are how many? John spent 2 cents for candies and 4 for nuts, how many cents did he spend? Susie is 5 years old, how old will she be in 1 year more? Mary had 6 pears, she gave 2 to Fanny and 1 to Ida, how many had she left? I bought 3 pencils at 2 cents each, how much did I pay in all? I have six pencils, and I give 2 each to a number of little boys, how many boys received 2 pencils? &c., &c.

Also: one and 1=? 1 and 2=? 1 and 3=? 1 and 4=? 1 and 5=?; two and 1=? 2 and 2=? 2 and 3=? 2 and 4=?; three and 1=? 3 and 2=? 3 and 3=?; four and 1=? 4 and 2=?;  $2-1=? 3-1=? 4-1=5-1=? 6-1=?; 2-2=? 3-2=? 4-2=?$  &c., &c.;  $1 \times 1=1; 1 \times 2=2, 1 \times 3=3$ , &c.;  $2 \times 1=2, 2 \times 2=4, 2 \times 3=6$ , &c. These exercises are an introduction to the systematic formation of the tables; but of course they are to be given promiscuously as well as in regular order, till the class are perfectly familiar with the various combinations.

Proceed in a similar way with the number SEVEN. Illustrate, as with the previous numbers, by a suitable arrangement of the balls, marks, &c.:  $7=1+1+1+1+1+1+1, =6+1, =5+2, =4+3; 7=1+6, 2+5, =3+4, 7=2 \times 3+1, =3 \times 2+1; 7=2+2+2+1, =3+3+1, =3+2+1+1$ , &c., &c., e.g.:

$\cdot \cdot \cdot \cdot \cdot$  } showing that there are 7 ones in 7, that there are 3 twos  
 $\cdot \cdot \cdot$  } +1, that there are 2 threes +1,—that one from 7 (or 7 less 1) leaves 6, 6 from 7 leaves one, and so with proper arrangements for other exercises. Then give practice (as illustrated in connection with the number six) in the systematic formation of the tables, and in problems carefully constructed to illustrate the various processes of the simple rules.

Proceed similarly with the number eight.  $8=7+1, =6+2, =4+4, =3+5, =2+6, =1+7; 8=8 \times 1, =2 \times 4, =4 \times 2, =3 \times 2+2; 8=4+3+1, =5+2+1$ , &c., &c.; arrange balls, &c., as in previous examples, e.g.:

$\cdot \cdot \cdot \cdot$  } showing that  $4+4=8, 8-4=4, 8=4 \times 2, =2 \times 4$   
 $\cdot \cdot \cdot \cdot$  } (i. e.,  $8$ =twice 4,  $=4$  times 2). 8 contains 4 two times, and 2 four times, and so on with other combinations.

Let a similar analysis of the numbers NINE and TEN be given;  $11111$  } showing that  $4+5=9, 5+4=9, 4+4+1=9; 4$  is contained two times in 9, with one remainder.

$1111$  } showing that  $3+3+3=9$ , or that 3 times 3=9; 9 contains 3 three times.

$1111111$  } showing that  $6+3=9, 3+6=9, 9-6=3, 9-3=6;$  and so on for all combinations.

Ten=9+1, =8+2, =7+3, etc., etc. 10-9=1, 10-2=8, 10-3=9, etc., etc.; *illustrats* as before;  
 \* \* \* showing that 10=3+3+3+1, =3 times 3+1; 10 contains  
 \* \* \* three times, with 1 remainder, etc.  
 1 1 1 1 } showing that 5+5=10, that 2+2+2+2+2=10, or 5  
 1 1 1 1 } times 2=10; 10 contains 2 five times, etc.;  
 \* \* \* \* showing that 4+4+2=10, or 2x4+2=10, 4 is con-  
 \* \* \* \* tained twice in 10, with 2 remainder, etc.

By using visible objects and grouping them as in the manner illustrated, the "trusty eye" is appealed to, as well as the "trusty ear," in the oral drilling.

At the risk of being tedious we have presented these illustrations of the analysis of the several numbers from one to ten, and of the great variety of practical problems which may be constructed for drill in the application of the simple "rules." Haste here will prove to be "bad speed"; *festina lente*—make haste slowly—is the motto to be followed. If proper drilling in the primary numbers is thus given, a good foundation will be surely laid; the pupil will acquire clear ideas of the elementary processes, and will be able to solve rapidly and independently all possible problems within the numbers he has learned to analyse. Remember that a "good beginning is the half of all," therefore *FESTINALENTE*, in making this beginning.

(To be continued.)

HOW TO TEACH MENSURATION.

III.

W. J. CARSON, HEAD MASTER, MODEL SCHOOL, LONDON.

THE CIRCLE.

Give the pupils a clear understanding of what a circle is. If the circumference of a circle be described on the blackboard, about nine-tenths of the pupils will very likely point out the circumference as being the circle.

All the pupils should commit to memory the ratio of the diameter of a circle to the circumference, true to four or five decimal places. For the computation of  $\pi$  3,141592 see Loomis's Geometry, page 107; and Colenso's Trigonometry, part II., page 7. Wherever  $\pi$  is required in the solution of problems in class-room work, I would recommend that the whole number 8 be used in most cases, as three or four times the number of examples may be practised, and the principles being gone over often, will likely be better impressed.

If 8 be used, it is a part of the correct ratio, but if  $8\frac{1}{2}$  be used a part that is correct and a part that is incorrect is used, and when you require the correct ratio, you have to discard a part and take the correct decimal with the 8. However, I would frequently give a problem requesting it to be solved by using  $\pi$ , the correct ratio.

To Find the Circumference of a Circle.

RULE.—Multiply the diameter by  $\pi$ .

Ques. What are the factors of the circumference?

Ans. The factors are the diameter and  $\pi$ .

Ques. Where the circumference is given, how would you find the diameter?

Ans. I would divide the circumference by  $\pi$ , one of the factors, to find the diameter, the other factor.

When the diameter of a circle is large, and great accuracy is required, it will be necessary to use  $\pi$  correct to 8 or 10 decimal places. Its value to 10 decimal places is 3.14159,26536.

- Examples:—(1.) If the diameter of the earth is 7,912 miles, what is its circumference? *Ans.*—24856.28 miles.  
 (2.) If the diameter of the earth's orbit is 189,761,000 miles, what is its circumference? *Ans.*—596,151,764 miles.  
 (3.) What is the diameter of a circle whose circumference is 875 feet? *Ans.*—278.52 feet.  
 (4.) If the circumference of the moon's orbit is 1,492,987 miles, what is its diameter? *Ans.*—475,233 miles.

How to Find the Area of a Circle.

Begin the lesson, first by practising the class on two or three examples in finding the circumference of a circle, the diameter being given; next give two or three examples in finding the area of a triangle, the base and altitude being given, (have the area of the triangle found by multiplying the base by half the altitude;) then a few examples in finding the sum of the areas of a number of triangles, the bases being given and all having the same altitude.

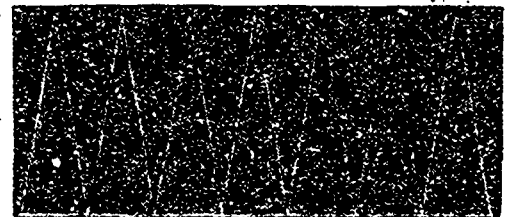
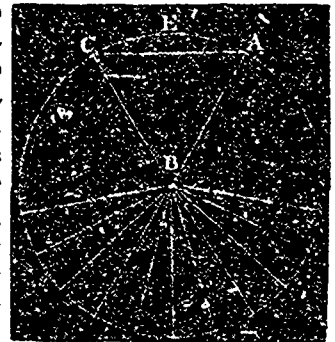
Draw four or five, or half a dozen, triangles on the board, all having the same altitude, and mark the length of the bases, and the height of the altitude, of course all the triangles having the same altitude.

Example:—Find the area of the following five triangles, the base of the 1st being 6; 2nd, 8; 3rd, 9; 4th, 12; and 5th, 18; and the altitude of each 10.

Show that the shortest method of finding the sum of their areas is to add all their bases together and multiply the sum by 5, half of the altitude 10.

Until the pupils can work off readily and correctly such examples as I have stated, do not attempt finding the area of the circle. But as soon as they understand them, proceed with the lesson in the following manner:—

Cut a circle out of leather, not out of paper, because it will tear by using it. Make the circle five or six inches in diameter, and cut the whole of it into triangles, like the lower half of the diagram. Cut from the centre towards the circumference and within about an eighth of an inch of it. Pin the circle thus cut, on the blackboard, and let the pupils amuse themselves for a minute looking at it. Then cut it open in one place and stretch it out on the blackboard, with the circumference downwards, and the apex of each triangle upwards, like the diagram. Now show the class or draw from them the fact that the circumference is the sum of all the bases of the triangles, even if there were millions of triangles, and that the altitude of each triangle is half the diameter of the circle, and half the altitude one-fourth the diameter.



Ques. How would you find the sum of all the bases of the triangles into which I have divided the circle?

Ans. I would multiply the diameter of the circle by  $\pi$ , and the product would be the circumference which is the sum of the bases.

Ques. How would you find the area of all the triangles into which I divided the circle?

Ans. I would multiply the circumference which is the sum of

all the bases, by half their altitude, which is one-fourth the diameter.

*Ques.* What have you really done to find the area of the circle?

*Ans.* I have multiplied the diameter by  $\pi$ , and that product by the one-fourth of the diameter, which is the diameter squared and multiplied by the one-fourth of  $\pi = d^2 \frac{\pi}{4}$  or  $r^2 \pi$ , when  $r$  stands for radius.

*Ques.* What are the factors of the area of a circle?

*Ans.* The factors of the area of a circle are  $d^2$  and  $\frac{\pi}{4}$  or  $r^2$  and  $\pi$ .

*Ques.* How would you find the diameter of a circle if the area was given?

*Ans.* I would divide the area by  $\frac{\pi}{4}$ , one of the factors, and get  $d^2$ , the other factor, and then I would extract the square root of  $d^2$ ; or I would divide the area by  $\pi$ , one of the factors, and get  $r^2$  the other factor, and then extract the square root of  $r^2$  to get the radius; next I would double the radius to get the diameter.

*Ques.* If you had the circumference given, how would you find the area?

*Ans.* I would divide the circumference by  $\pi$  to get the diameter, then I would take the one-fourth of the circumference divided by  $\pi$ , and multiply the circumference by it, which would be  $c^2 \frac{\pi}{4}$ .

TO FIND THE AREA OF A SECTOR OF A CIRCLE.

Multiply the length of the arc  $AC$  by one-fourth the diameter or by one half the radius  $AB$ .

TO FIND THE AREA OF THE SEGMENT OF A CIRCLE.

Find the area of the sector  $ABCE$ , and the area of the triangle  $ABC$ , then subtract the area of the triangle from the area of the sector, and the remainder will be the arc of the segment.

(To be continued.)

#### PERSONALS.

Mr. John Wilson, B.A. Toronto, and "1st. A." Normal School, late second master Port Hope High School, has been appointed English master of Stratford High School, vice Mr. Stunden, resigned, at a salary of \$800 per annum. There were twenty-nine applicants for the position.

Mr. E. A. Miller, late Principal of Millbank P. S., has been appointed fourth master in Stratford High School, at a salary of \$500, an additional room being built to accommodate a fourth form and relieve the overcrowding.

Mr. F. F. Manley, M.A., Mathematical Master of Toronto Collegiate Institute, has been appointed Lieutenant of University Company, Queen's Own Rifles.

Mr. A. C. Carlyle, B.A., Head Master Port Rowan High School, has just returned from an extended tour in Europe, looking much better for his trip.

Mr. Samuel Hughes, Teacher of English in Toronto Col. Institute, is gazetted Adjutant of the 45th Battalion.

Mr. James Panten, B.A., Medallist, Univ. Toronto, and one of our most enthusiastic and successful teachers of natural science, has been appointed to the chair of that subject in Agricultural College, Guelph.

Mr. Natrass, one of the students of the Normal School who obtained a First Class Certificate, grade "A." last June, has been appointed English Master in Agricultural College, Guelph.

Miss Louisa Palmer, who holds a first-class Normal School Certificate, and who highly distinguished herself at the University Examination for ladies, last June, has been appointed assistant teacher in the Richmond Hill High School. Previous to going up for the University Examination, Miss Palmer was a student of the Whitby High School.

M. H. Richey, Esq., M.P., late Mayor of Halifax, who defeated the Hon. Mr. Jones in the recent election for the Commons, is a Fellow of the Halifax University.

Mr. M. B. Daley, M.P. for Halifax, who was returned at the late election with Mr. Richey, is Chairman of the Convocation of the University.

Rev. Professor Welton, M.A., of Acadia College, has just returned from Europe, after a stay of two years at Leipzig, where he graduated Ph. D. with honors.

D. F. H. Wilkins, B.A., Silver Medallist (Tor.) and Prizeman of McGill, has been appointed Mathematical Master of Chatham High School.

Mr. John McCulloch, teacher of Salmonville Public School, was recently presented with a beautiful album by his pupils as a mark of their appreciation of his services.

Dr. Wiggins, formerly Principal of the Blind Asylum, Brantford, is now residing in St. John, N.B. He contested King's Co. as a candidate for the Commons at the late election.

Mr. Raine, Principal of the Perth Model School, has resigned his position.

Mr. Moag has been appointed Second Master in Smith's Falls Public School.

G. W. Field, B.A., has been appointed Assistant Master in the Windsor High School.

Dr. Dupuis, of Kingston, delivers a course of lectures on Hygiene to the Model School students each session.

Rev. Prof. Halpin, late classical master of Huron College, London, died on Sunday of paralysis. He was a graduate of Trinity College, Dublin, and has resided in London for the past fourteen or fifteen years. He was a brother of the celebrated "Miles O'Reilly."

Mr. D. E. Stephenson has recently been appointed first assistant in the Cobourg Model School.

The gold medal presented by Mr. Robb, of New York city, for competition in the London common schools, has been gained by Alexander McKay, who made 765 marks out of a possible 962.

Mr. S. Phillips, B.A., an old pupil of Whitby High School, has received the appointment and entered upon the duties of Mathematical Master in that institution.

Of the ladies who passed the first University examination for women from the Whitby High School, Miss Paxton and Miss Ross obtained honors in English and French; Miss Smith in English, French, Geography and History, and the Misses Paxton, Palmer and Ross were the only candidates that obtained first class in English.

#### Notes and News.

##### ONTARIO.

The Finance Committee of the Toronto Separate School Board at its last meeting presented a report of the receipts and expenditures of the Board during the past fifteen years. The total amount received during that time was \$84,560.75.

Brockville is agitating for a new High School building.

Smith's Falls High School Board gives each successful candidate at the Intermediate a bonus of \$5.00.

The attendance at St. Thomas High School for September was 149; the attendance at the Public Schools was 902.

The Sarnia Board of Education will require \$1,969 for High School purposes, and \$4,387 for the Model and Public Schools for 1879.

A vigorous newspaper warfare is going on in Brockville between the Inspector and one of the teachers. In referring to the correspondence the *Monitor* says: "The Inspector went for his antagonist last week like a North-West buffalo bull, the teacher strikes back again this week like a locomotive."

Drill is to be introduced into Perth High School. Music and drawing are also taught in it.

The attendance at Perth Public Schools was 412 in September. The attendance at Toronto Public Schools in September was 8,724.

One thousand three hundred and thirty-eight pupils were in attendance at Brantford Public Schools in September.

Toronto School Board have secured a building for the purpose of establishing an Industrial School.

The London (Ont.) School Board at its last meeting adopted a form of contract for all public school teachers employed or to be employed by the Board, containing a clause requiring them to attend the music teacher's class, unless excused by the Board, and that such contract be executed by all new teachers when they receive their appointment, and by the present staff on their re-engagement at the new year.

The Institute for the Education of the Blind, Brantford, is in a very satisfactory condition. An exhibition of the work of the pupils in willow work, cane seating for cabinet-makers, coach-builders, etc., bead work, seine twine work, card-baskets, perforated card work, knitting in silk and cotton, frame wool work, crocheting, splint work, hand sewing, hand knitting, machine sewing, knitting, etc., was given at the Southern Fair. The neatness of the work and the rapidity and ease with which the different attachments of machines were used by the afflicted but intelligent operatives astonished spectators. The attendance has increased from eleven, six years ago, to nearly one hundred and sixty now.

The magnificent building for the Alma College, St. Thomas, is well nigh enclosed. The brick-laying is completed except on the tower, and the workmen are now roofing it.

The Globe Lightening Rod Co., of London, have offered to the East Middlesex Teachers' Association a prize of electrical apparatus to the value of \$100, for the best essay on Atmospheric Electricity or Lightning, and the best modes of averting its dangers.

Father Stafford is determined that the young women of his parish shall have a chance to learn the art of cookery, for he has inaugurated, at the convent at Lindsay, a system by which they are given instructions both in housekeeping and cooking.

The new High School in Picton has recently been completed and is now ready for occupation. It is a fine brick building, 30 ft. wide and 62 ft. in length. This school has all the modern appointments.

The annual convocation of University College was held on Friday October 10th. The following prizes were distributed by Rev. Dr. McCaul, President:—

*Classics*—4th year, Smoke, S. C.; 3rd year, Cameron, J. D.; 2nd year, Carruthers, A.; 1st year, Jarvis, F. W.

*Logic*—2nd year, Thompson, R. Y.

*Chemistry*—4th year, Miller, C.; 3rd year, McMurrich, J. P.; 2nd year, Tyrrell, J. B.; 1st year, Milner, W. S.

*Mathematics*—4th year, Hayter, F.; 3rd year, McMinn, W. J. R.; 2nd year, Loudon, W. J.; 1st year, Reid, A. W.

*English*—4th year, Keys, D. R.; 3rd year, Chisholm, J.; 1st year, Jarvis, F. W.

*History*—3rd year, Chisholm, J.; 2nd year, Jackson, J. B.

*Mineralogy and Geology*—4th year, Miller, C.; 2nd year, Tyrrell, J. B.

*Natural History*—4th year, Miller, C.; 3rd year, McMurrich, J. P.; 2nd year, Tyrrell, J. B.

*Meteorology*—4th year, Campbell, J. H. M.

*Metaphysics and Ethics*—4th year, McGregor, M.; 3rd year, Cameron, J. D.; 2nd year, Thompson, R. Y.

*Oriental Literature*—4th year, McEwen, P. A.; 3rd year, McLachlin, A. G.; 2nd year, McKay, A.; 1st year, McKay, J. S.

*French, German and Italian*—4th year, Keys, D. R.; 3rd year, Chisholm, J.

*French and German*—2nd year, Ballantyne, J.

*French*—1st year, Levan, I. M.

*German*—1st year, Levan, I. M.; Reid, J. M.

*Speakers*—1. McColl, D.; 2. McGregor, M.

*Readers*—1. Keys, D. R.; 2. Hamilton, H. R. P.

*Essayist*—1. McDonald, J.; 2. Russell, J. W.

*Macdonald Bursary, 1878*—McMurrich, J. P.

The City Council of London, at a late meeting, having refused to give the Board of Education an additional eleven thousand dollars to the twenty-five first asked for school purposes, the Chairman of the Board read at a recent meeting the legal opinion of Messrs. Blake, Kerr and Boyd, of Toronto, as follows: "That the Council had no authority to refuse the sum asked for, and that, on application to the Court of Queen's Bench, a *mandamus* would issue compelling them to appropriate the sum required."

The Brantford Collegiate Institute is showing the effects of thorough work. Three of its students distinguished themselves at the late matriculation examinations at Victoria and Queen's Universities. W. Jones, of Brantford, took 1st scholarship in classics, and J. W. Crewson, of Acton, 2nd place in mathematics at Victoria, and A. McLaren, of Lakeside, 1st scholarship in classics at Queen's.

The cost of the new High School building at Stratford, together with site, will be over \$20,000. It is to be completed early next summer.

A fine new High School building is just being completed at Seaforth. It has a magnificent site, four large rooms, modern style of furniture, and is to be supplied with a good set of apparatus.

The new High School building at Walkerton will be ready for opening at the beginning of next term.

Athletic sports are now very popular in connection with the High Schools of the Province. The annual games of Galt Collegiate Institute, held last month, were very interesting and largely patronized.

The London High School building, completed last summer, at a cost of \$20,000, is considered one of the finest buildings, for the price, in the Province. It has been occupied since the beginning of the present term. The attendance is over 200. Six teachers are now employed, and a seventh about to be appointed.

St. Mary's High School has applied to be recognized as a Collegiate Institute. It has taken a high stand, and the attendance is now over 140.

The Minister of Education and Dr. McLellan are expected to be present at the opening of the new Model School, Sarnia, the first week in November.

The County Council of the County of Lanark passed a by-law, proposing to discontinue the High Schools at Pakenham, Carlton Place and Smith's Falls, and only keep two instead of five in the county. They have communicated with the Minister of Education, giving the grounds for the change, and the matter is under consideration.

Rev. Prof. Grant has been very successful during his visit to London, Ont., in the interests of Queen's College, Kingston. At the meeting on Monday evening, Oct. 21st, \$1,300 was raised by voluntary subscription, and the next day \$1,000 was added to that amount.

The High School building in Markham was burned to the ground on the evening of the 21st ult. How the fire originated is unknown, but it must have been the work of an incendiary. The building was insured. Much inconvenience will be the result of the fire, as there is no suitable building in which the school can now be conducted.

Important additions are being made to the Library of the Whitby High School. We see by the *Chronicle* ten pupils of this school passed the various matriculation examinations this year, and that one of its pupils, Elbert Van Carson, took the first place in Trinity, winning the scholarship, valued at \$200.

According to Brockville exchanges, Inspector Bigg has been reprimanded by members of the County Council for assuming to transfer the examinations from Gananoque to Brockville, and has had to pay \$20 expenses incurred by a teacher through his refusal to endorse a certificate from another county.

A correspondent suggests that a small annual grant by the Government of books to High School libraries would be an excellent method of diffusing knowledge upon particular subjects.

In the last report of the High School Inspectors, complaint was made of the inadequacy of the play grounds of Whitby High School.

North Huron Teachers' Association had a very successful session at Brussels on the 10th and 11th ult. Over seventy teachers were present.

The Education Department has established a school for the Parry Island band of Indians, at Parry Sound. An Indian, trained at Muncey, named Elias, has charge of it. The attendance is now about thirty.

The Stoumont County Council has refused to grant \$100 to the Cornwall Model School, established for the training of teachers for the county.

The total number of pupils registered in the public schools of Cobourg during September was 658. There are 31 teachers in training at the Northumberland Model School.

Ten thousand dollars have been subscribed in England, through Bishop Hellmuth's exertion, in behalf of the Western University, to be located at London, Ont.

The Board of School Trustees, Kingston, want \$12,000 for school purposes this year.

All those interested in the course of the School of Practical Science can obtain a copy of the curriculum by applying either at the Education Department or to Professor R. Ramsay Wright, Secretary of the institution.

At a late meeting of the Wentworth Teachers' Association, A. Macallum, M.A., Inspector of Schools in Hamilton, announced his intention to withdraw from the County Association, as there had been one formed in the city, in compliance with the statute. The matter was allowed to remain in abeyance for a time in order to ascertain if an amalgamation of the two Associations was practicable.

ONTARIO EXAMINATION OF TEACHERS, CLASS II—DECEMBER, 1878.—*Time and Subjects of Examination*—Monday, 16th December, 1.30 to 1.45 p.m., Reading the Regulations; 1.45 to 4 p.m., English Literature. (1) Tuesday, 17th December, 9 to 12 a.m., English Grammar and Etymology. (2); 1.30 to 3.30 p.m., Geography. (3); 3.35 to 4.5 p.m., Dictation. (4) Wednesday, 18th December, 9 to 12 a.m., Arithmetic (5); 1.30 to 4 p.m. History. (6). Thursday, 19th December, 9 to 11.30 a.m., Algebra (7); 1.30 to 4 p.m., Natural Philosophy. (8); 1.30 to 4.30 p.m., Latin (9), or French (10), or German (11). Friday, 20th December, 9 to 11.30 a.m., Euclid (12); 11.35 to 12.50 p.m., English Composition. (13); 2 to 3 p.m., Chemistry. (14); 3.5 to 4.20 p.m., Book-keeping. (15). The next Professional Examinations of Third Class Teachers will be held on December 20th and 21st.

#### NEW BRUNSWICK.

The authorities of the Provincial University advertise for a Professor of Classics and History, who will be required to enter upon his duties on the 5th of January next. This is in consequence of the resignation of Prof. George E. Foster, A.B., who, no doubt, sees before him a wider and more promising field of usefulness in the press and upon the lecture platform. Certain it is that as a temperance orator Professor Foster is without an equal in Canada, and has few superiors on this continent.

The school trustees of the city of Fredericton have decided to offer for competition in each department of the city schools, a first, second and third prize, to be awarded under the standard and upon the conditions prescribed by the Board of Education in the regulation published in the JOURNAL for October. Probably many other districts, particularly in the towns, will take similar action before long.

The new Merit Book, mentioned last month, is to be used in each department of the Model Schools after the first of November, and will no doubt find its way into very many schools in this Province and elsewhere, as its excellence becomes known.

"The Merit Book is designed as a simple and effective means by which the teacher may keep as 'one whole' and daily report to pupils and parents, the school standing of the pupil under the following standard of obligation: *prompt attendance* at each school sitting; *unexceptionable conduct* while subject to the teacher's supervision, whether in the school-room or elsewhere; *industrious application* in the discharge of every school duty; and *excellence of scholarship* in the subjects of prescribed study, according to the pupil's assignments in the course of instruction pursued in the school."

It consists of four leaves of stout board, like the covers of a large book, of folio size, made so as to turn freely about a hollow cylinder of brass, which forms as it were the back of the book when closed. Two of these leaves, and the inner side of the other two (which are cover leaves) are covered with parchment, in which are rows of pockets intended to hold the cards of merit. There are thus six pages with fifty pockets on each page; and as a set of five

pockets are allotted to each pupil, the book is sufficient for a school of sixty registered pupils. The cards are of different denominations, as 1, 2, 5, 10, 25, 100 and 500. They are neatly and prettily printed in colors. For convenience in handling, a stand is provided, upon which the book may be fixed with the four leaves open at right angles to one another, in an upright position. The hollow brass cylinder which forms the back is slid down over a vertical iron rod, and the lower edges of the four leaves are fitted into grooves in a horizontal revolving disc, which latter is attached to a circular stand, and this is to be screwed firmly to the teacher's desk. Numbers on the pages, over each set of pockets, denote the same pupils as the corresponding numbers in the register for term. The following directions are taken from the explanatory sheet to accompany the Merit Book:

"On the opening of the school, or department, in any term, each set of pockets is to be filled by the same quantity of each denomination of cards, viz., (beginning directly under the printed number), in the first pocket, two halves, two ones and two twos; in the second, five fives; in the third, five tens; in the fourth, four twenty-fives, and in the fifth, four one hundreds and two five hundreds—twenty-six cards, in all, for each pupil for the term (or that portion of it during which the school is in operation). The book must be accurately filled."

"The teacher having in order the names with register numbers of all the pupils on a slate at his desk—notes thereon at the time what abatements are to be made for the half-day (or day) from the standard figure on account of *tardiness, improper conduct, want of application, or imperfect scholarship*; and on dismissing the school for the half-day (or day) gives to each pupil, from the stock allotted to him in the Merit Book, the card (or cards) to which, according to the teacher's best judgment, he is entitled. The cards of lower value are to be regularly exchanged with the pupil for those of equivalent higher values. The cards thus received by the teacher are to be inserted, at the moment, in their proper pockets. Any cards held by the pupils at the close of the term are, of course, to be taken up by the teacher."

"A pupil forfeits the value of a card if he loses it. The teacher should inform the school of this at the beginning of the term. Treating losses as losses gives necessary training in carefulness. A new card is to be inserted in the proper pocket in the place of a lost one."

"At noon and at night the book is to be slipped off the stand and locked up in the teacher's desk. No person but the teacher must be permitted to handle or have access to the Merit Book throughout the term. The rubber bands which accompany the book will close it securely, and the teacher should carry it home at night if there is not complete security in the school room, as is generally the case in country districts."

"By means of the Merit Book the teacher can utilize the advantages afforded by school cards, while he is enabled entirely to eliminate the many and serious disadvantages hitherto inseparably connected with their use. The traffic among pupils in school cards has led teachers having an intelligent concern for the welfare of their children to forego the use of cards. Experience also shows that records of school standing where each pupil keeps his own book are unsatisfactory. The amount of care required in working the Merit Book properly is only that which should be daily exercised by every teacher. Since (as will be seen) every pupil's account with the teacher is a "cash account," no pupil can successfully traffic in school cards, and every incentive to cheating in the matter of school standing is removed. The same sort of cards, therefore, can be used with perfect safety in all schools, or departments. These cards daily report to the parent the pupil's school standing. They are an attractive and persistent means of securing the co-operation of parents with the work of the teacher, while they relieve him of the necessity of keeping permanent records daily, in this behalf, for weekly or monthly reports. The school standing of each pupil can readily be found for permanent entry in the school register at the close of each calendar month, by an inspection of the Merit Book."

"Where prizes are given for the best school standing, the Merit Book will indicate at the close of the term the pupils who have earned them."

"The cards of each denomination are supplied in packets, so that the Merit Book may be refilled when the cards are soiled."

The manufacturer and patentee is Mr. Robert Sutherland, of Fredericton, who will, no doubt, be glad to furnish any desired information in reference to the invention.

Speaking of inventions, suggests the recent Provincial Exhibi-

tion held at Fredericton, and a supposed invention displayed there, which was intended to be of interest to teachers. This was a geometrical diagram with demonstration, entered by the author, Mr. Henry Hartlett, as a solution of that unsolved problem—the *bisection of an angle*. It came very near being correct!

It is understood that Mr. R. S. Nicholson, now teaching at St. Stephen, N.B., has been appointed teacher of the Fourth Department of the Model School. He will have a general oversight of the other departments, under the control of Mr. Crockett.

The Inspectorship of St. John County, vacant by the death of Mr. Duval, has not yet been filled. In all probability no permanent appointment will be made until next spring.

Dr. Jack, of Fredericton, N.B., University, was out driving with his oldest daughter, when the reins got under the horse's tail, and, in trying to release them, the doctor gave a sudden jerk, causing the animal to turn sharp round and overthrow the conveyance. Miss Jack was instantly killed, and her father knocked insensible.

The Teachers' Institute for the County of Restigouche held its second annual meeting, at Campbelltown, on the 26th and 27th of Sept. The meeting was enthusiastic and satisfactory. Dr. Rand's presence and addresses added much to the interest of the proceedings.

The second meeting of the Northumberland County Institute took place at Chatham, on the 3rd and 4th of October. It was largely attended and a good work was done.

The Queen's County Teachers' Institute will hold its second meeting at Gagetown, on Thursday and Friday, the 7th and 8th of November. The following is the programme of exercises.

Thursday, 10 a.m.—Election of Officers and Committee of Management; Address by Inspector; Paper on the study of "Etymology," to be followed by discussion.

2 p.m.—Paper on "Canadian History," its importance, and the best methods of interesting pupils in its study; Physical and Vocal Training—Examples to be given from Munroe's System on both these subjects; Practical Lessons on teaching Addition and Vulgar Fractions.

Evening, 7 p.m.—Public Lecture in Temperance Hall.

Friday, 9 a.m.—Paper on "English Grammar," its importance in Education, Practical Lesson on teaching Geography; Paper on "The influence of personal character of Teacher on the School;" Paper on "Value of the study of English Classics."

2 p.m.—Paper on Elocution; Paper on the Higher Branches of Study, and how best to instil in the pupils a desire to excel; Practical Lesson on Geometry, to be followed by a discussion on the different results produced by classical or mathematical training, Business, Closing Address, and adjournment.

On Thursday and Friday before Christmas, the second meeting of the King's County Institute will be held. The Chief Superintendent is engaged to be present.

The Winter Session of the Provincial Normal School will open on Wednesday, November 6th. A large attendance is anticipated.

The Board of Education has arranged for the opening of a Preparatory Department in the Normal School, for the exclusive accommodation of such French candidates as may not be qualified for admission to the existing departments. Those who are able, at the close of the session, to pass the Entrance Examination, will be entitled to receive a license of the third-class, valid in French districts for two years. Students in the French Department will be allowed their travelling expenses equally with other student teachers. By providing special text-books in certain subjects, and now by this arrangement for special instruction, the Education Department seems to be doing the best possible under the circumstances to extend the benefits of the public school system to all the people, without distinction of language.

#### NOVA SCOTIA.

The Rev. E. D. Hommes has been appointed Inspector of Schools for the District of Clare. The vacancy was occasioned by the removal from the Province of the late Inspector, Dr. Landry.

The Rev. John Ambrose, A.M., Inspector for the County of Digby, is spending the summer in Europe. We understand that it was his purpose to devote considerable attention to a personal study of the Educational Institutions and systems of both Great Britain and the Continent.

The new High School building for the City of Halifax is rapidly approaching completion, under the skilful supervision of the contractor, Robert Brierton, Esq. It will be an ornament to the city and a fitting crown to her system of schools. The situation is a commanding one, opposite the south-east corner of the Citadel Glacis, and as the city grows in wealth and population it will the more commend itself as the best site to be found within the civic

limits. The building is eighty-four feet in length, seventy-four in width. The style of architecture is altogether befitting an educational edifice. The material is pressed brick, with basement of rustic granite. The dulness of the brick is relieved by granite trimmings and ornamental work in white and black brick. The structure is two stories in height, with mansard roof, so that practically there are three floors available for school purposes. Besides, the basement is only a basement in name, being as light and airy as the upper stories. Here the City Board of School Commissioners will have their Board Room, and their Secretary his office. A very comfortable gymnasium will be fitted up in another part of the basement. The first floor proper comprises four class rooms, Principal's private office, etc. On the second are four other class rooms, private room for teachers' use, and an elegant chemical laboratory. The third contains the large hall, or assembly room, and two good sized class rooms. Here is provided ample accommodation for at least two hundred pupils, we may safely say for two hundred and fifty. Though the building has been designed specifically as a high school for boys, it is possible that the Commissioners may consider the propriety of admitting girls, should the attendance of the rougher sex not exhaust the seating capacity.

An unusually commodious and tasteful school edifice is in course of erection in the Village of Maitland, Hants Co. Maitland is one of the most enterprising and prosperous ship-building towns in Nova Scotia, and its people are evincing their progressive spirit in the right direction. It is hoped that the building will be in readiness for the November term, and the Superintendent of Education is expected to visit Maitland in connection with its opening.

The University of Halifax is proving its usefulness by affording students who cannot, from want of time, or means, or both, attend a college, the opportunity of obtaining a degree by simply passing examinations of a high standard. Of nine successful candidates at the recent Matriculation Examination, seven had prepared themselves by private study. The two prizes offered by the University to the candidates making the highest number of marks at this examination, were carried off by Mr. John McKercher, Royal Arthur School, Montreal, and Mr. Arthur H. Cameron, Brooklyn, N.S.

Vice-Chancellor Stairs, who was absent on a visit to Europe, has returned.

All the Colleges throughout the Province have now resumed work, the various members of the faculties having all returned. Prof. Currie, St. Mary's, Prof. MacDonald, and Prof. Johnson, Dalhousie, and Prof. Oram, King's, who spent the long vacation in Europe, all returned by recent steamers. Prof. De Mille, Dalhousie, returned from New Brunswick a few days ago.

The Technological Institute, organized in Halifax last winter, is entering upon its winter course of lectures under enlarged auspices. The gentlemen to whose enthusiastic devotion to the cause of scientific, practical education the Institute owes its origin, comprises many of the leading scholars, scientists and mechanics of the Province. Arrangements have been made for classes in *Mathematics, Mechanical Engineering and Naval Architecture, Drawing and Design, French and German, English Language and Composition, Inorganic and Industrial Chemistry, Architecture, Zoology, and Physiology and Use of Microscope, Physics, Mining and Assaying*. Most of the classes already embrace a gratifying number of young men eagerly seizing upon this golden opportunity. Professor Bossnack has secured the loan of many valuable models, &c., from the great Polytechnic establishments of the United States.

The new Normal School building at Truro is now finished, and in the course of a few days it will assume its high functions in the educational work of the Province. The formal opening will take place on Wednesday, November 13th. The building, including heating apparatus and furniture has cost about \$40,000. It is built of pressed brick with freestone trimmings. The main building has a frontage of about 100 feet and a depth of about 55 feet. The wing in the rear is 40 feet by 60 feet. The building has a mansard roof, surmounted at the front by a square cupola with turret, the top of which rises to the height of 90 feet from the ground. The principal entrance is at the centre of the front of the main building. Near each end of the main building are two entrances, one in the front and one in the rear, for the students, male students entering at one end and female at the other. The basement, which extends under the whole structure, is well lighted, and contains furnace room, laboratory, ladies' lavatory, and other apartments adapted to indoor physical exercises. On the first floor of the main building are the library, Principal's



office, and hat and cloak rooms. In the library are two large rooms. One of these with an apparatus room adjoining, is intended for the Natural Science Department; the other is seated for children, and is designed for the practical training of the students in the business of teaching. On the second floor the main building contains two class rooms, one for the Mathematical Department and the other for the English Department. The wing is occupied by the lecture room, or assembly hall, which extends forward into the main building, forming a spacious room 58 feet long, 52 feet wide, and 20 feet from floor to ceiling. In the attic of the main building are rooms well suited for museum, reading room, or such other purpose as the growth of the Institution may render necessary. A stairway leads to the cupola, from which one can obtain an excellent view of Truro and the surrounding country. The approaches to the building are tastefully laid out in curves, and the ample grounds are put in order for the reception of trees, shrubbery and flowers, which have been ordered to be ready for the spring planting. Most fittingly, too, as the first occupant of the grounds, the granite monument erected several years ago on the public square of Truro to the memory of Dr. Forrester, by the teachers of Nova Scotia, has been removed to a prominent place in front of the building. The new building, which we have somewhat minutely described, will accommodate 200 students. It seems to be in every respect adapted to the purpose for which it is designed; and whilst it affords evidence of educational life in the Province, it also may be regarded as a pledge that this life is progressive and destined to attain a yet grander development.

#### PRINCE EDWARD ISLAND.

The commercial depression in Prince Edward Island has affected two gentlemen who have taken great interest in educational affairs since the inauguration of the present system. The great failure of the firm of James Duncan & Co. has had a serious effect upon the country. Of this firm the Hon. James Duncan is the leading member. As one of the city school trustees he wrought energetically with the other trustees in getting the schools into a proper state of organization, and encouraged, in his capacity as chairman, the Board to undertake the work of erecting for school purposes one of the finest buildings in Charlottetown. At the school examinations he was always present, and was donor of the Duncan Silver Medal to the Girls' High School, and other prizes. Another member of the firm, the Hon. John Robinson, was a member of the Government which brought in the Bill in 1877 for the introduction of an improved system of education, and was also a member of the Board of Education. The Hon. Mr. Duncan, having been obliged to spend the winter in the south of France on account of his health, resigned his position as chairman and trustee, and Mr. Robinson, his partner, now retires from the Board of Education. Much regret is expressed at the withdrawal of both gentlemen from the positions they have occupied as active friends of education.

There was a talk some time ago about the organization of a Teachers' Association for the Province, but the rumors pointing to certain educational changes have probably interfered with the advancement of the work. There is no doubt that such an Association would have a very beneficial effect upon the whole machinery of our system, if for nothing else than to bring the teachers together for the exchange of ideas. There were some hopes entertained that the Teachers' Institute of Prince County would develop into a larger society for the Province, but these as yet have not been realized. The teachers of Prince County, we have heard, intend holding a meeting next month. An increase in the circulation of the JOURNAL throughout the Island will undoubtedly assist us in arranging for the Provincial Association.

It has always been a matter of pride with the people of Prince Edward Island that they were the first in the Maritime Provinces to establish a system of free education, and as much will it be a surprise to others to know that the present law has a compulsory clause, which, however, has not as yet anywhere in the Province been put in force. The clause referred to reads as follows: "Every person having under his control a child between the ages of eight and thirteen shall annually, during the continuance of such control, send such child to some public school in the city, town, or school district in the county in which he resides at least twelve weeks, if the public schools of such city, town, or school district in the county so long continue, six weeks of which time shall be consecutive; and for every neglect of such duty the party offending shall forfeit to the use of the trustees of such city, town, or district a sum not exceeding twenty dollars." This clause as it

stands, but subject to several exceptions which are enumerated, will eventually be a strong lever in raising the educational status of the island. There is evidently no need for it at present.

#### MANITOBA.

There are upwards of fifty candidates for teachers' certificates in Manitoba. The examinations, which are held at Winnipeg and Portage la Prairie, are conducted by Rev. J. W. Bell, B.A.

Chief Justice Wood gave judgment lately at Winnipeg in regard to the protest of the Hudson's Bay Company against a Provincial tax of five cents per acre for educational purposes. The Act especially defined the company as non-residents, whereas residents are only taxed one cent per acre. The judgment sustained the appeal, on the ground that the tax is an exceptional one, and therefore beyond the power of the Legislature to impose.

Manitoba has three colleges—St. Boniface, belonging to the Roman Catholic Church; St. John's, to the Church of England; and the Presbyterian College—all of which are affiliated to the University of Manitoba, an examining and degree-conferring body. It is said that the Methodists also will shortly establish a college of their own. Four colleges in one small Province!

At the last Provincial Examination for teachers' certificates in Manitoba there were granted 1 first, 13 second, and 18 third-class certificates.

The teachers of Western Marquette met at Portage la Prairie on Saturday, the 5th Oct., and organized a Teachers' Association, the first, I believe, in the Province. The officers are as follows: President, Mr. Gerrond; Vice President, Richard Edwards; Secretary, J. Ferguson; Treasurer, Miss Irvine. Quite a number were present, all agreeing to take an active part in furthering the interests of the Association. At the next meeting the following teachers kindly consented to assist in making the Association as attractive and profitable as possible by giving their methods in teaching certain subjects: Mr. Ingram, the Elementary Rules of Arithmetic; R. Edwards, Fractions; Mr. J. Ferguson, the Rudiments of Grammar; Miss Irvine to write an essay on some educational subject.

#### FOREIGN NOTES.

The London University is the only British university which insists on no conditions of collegiate residence as a qualification for a degree. The Chancellor, Earl Granville, is in favor of admitting women to its degrees.

The schools of the London (Eng.) School Board have penny savings banks attached to them; the deposits in 40 of them, last year, amounted to over £3,000.

According to the census of the School Board, there are only five children in Henley-on-Thames, in the vicinity of London, who are not in regular attendance at schools.

In the State Normal School of Nebraska, the custom prevails of having a "Students' day" in each term. On this day the school is managed exclusively by students. A principal is elected from among them by ballot, the whole school voting, and in like manner each class elects a teacher. For the day the student faculty have entire charge of the school, and the regular faculty receive the treatment of visitors. Students' day is considered one of the best days of the school.

A recent law passed in Germany prohibits corporal punishment in schools, under penalty of a heavy fine upon both the institution allowing and the professor committing such an act. The professors consider such an enactment an infringement upon their prerogatives, and numerous petitions have been sent to the Minister of Education protesting against it.

The students at Strasburg University have determined to erect a monument in memory of Goethe.

When Cambridge conferred the degree of D.C.L. upon Charles Darwin, as the distinguished recipient of university honors marched upon the platform, clad in the scarlet robes of the Doctor, the effigy of a monkey was slowly lowered into the middle of the hall from the most prominent point of the undergraduates' gallery, which effigy was robed in the academic gown, bearing the legend, *The Missing Link*. The second story details the circumstances under which an unpopular junior dean of Trinity College, Dublin, summoned the police to his protection on the last Sunday of last February: "At midnight a large number of students assembled in front of his residence and sounded fog-horns. The dean, on going out to intimidate them with threats of expulsion, was assailed by students, who wore masks and veils, and who pummeled

him until a stalwart porter sprang to his rescue. Doors were torn from their hinges, bonfires were kindled, windows were smashed, the keys of the belfry were purloined, and the bell was tolled."

**TECHNICAL SCHOOLS.**—Australia has 1,037 schools for technical instruction, 4,296 teachers, and 67,713 pupils, besides schools of forestry, mining, and agriculture. Bavaria has 1,671 industrial schools for girls, with 1,887 teachers, and 71,635 pupils, a polytechnic school at Munich, 36 technological schools, and 4 of agriculture. In Germany there are 34 schools of architecture, 25 of mining, 17 of forestry, 108 of commerce, 146 of agriculture, 10 veterinary, and 86 other technical schools. Denmark has 49 "Farmers' High Schools," with 3,135 students, of whom 1,004 are females. In Holland there are 11 navigation schools, and 32 industrial and drawing schools. In Switzerland 4,373 females are employed in schools teaching needlework.

**ENGLAND.**—In order to encourage the study of naval architecture and marine engineering, there is some probability of Lloyd's making an annual grant for the assistance of a certain number of private students at the Royal Naval College at Greenwich.

A memorial on the subject of spelling reform, signed by 130 school boards, including those of many of the most important towns of the kingdom, will be presented to the British Parliament in a few days, and it is expected that a royal commission will be appointed to consider the matter seriously.

The English crown diamonds are at the Paris Exposition and are valued at \$8,500,000. They are in a thick iron chest guarded by sentinels day and night. There is a diadem of eighty-six diamonds of various sizes, in the middle of which is the celebrated Koh-i-Noor, alone valued at \$320,000; also a collar of one hundred and eight diamonds, in the centre of which is an emerald, said to be the purest and most beautiful extant. A second diadem is a blending of diamonds and emeralds. In the centre is a large Kaudavassy diamond, valued at \$600,000. It would be rated at a higher sum were it not for a slight defect. These and many other valuables of the kind belong to the English crown. A portion are used by the Princess of Wales on special occasions; the others are reserved for the Queen. The Kaudavassy was formerly the eye of a one-eyed Hindoo deity, and has been but lately added to the collection.

The authorities of the Queen's University in Ireland declare that they are willing to examine female medical students, but are unable to do so because the ordinary regulations require a year of study in one of the affiliated Queen's Colleges, and none of these has as yet consented to admit women to instruction. Besides the extensions demanded at Girton College, Newham Hall, at Cambridge is being enlarged, and a new school is to be established at Maida Hill. During the past year two of the young women at Cambridge have been examined for the mathematical and natural science tripos, and both gained honors, one reaching the first-class standard. The latter's knowledge of the "ologies" has not damaged her matrimonial prospects. Since her examination she has married, and been appointed principal of the training college for high-grade teachers, which is soon to be opened.

ANSWERS TO QUERIES.

1. I hold two third-class certificates. One expired in July, 1878, and the other is valid until July, 1879. Can I still teach on the latter?

SUBSCRIBER, Dresden.

Yes, if your Inspector endorses it at the request of your School Board.

2. If I taught up to the midsummer holidays on a third-class certificate, which then expired, can I collect my salary for the holidays?

SUBSCRIBER, Dresden.

Yes.

3. On what conditions can a 2nd A. be obtained?

I. G., Acton.

The percentage required is 80 per cent. on each individual subject, and 50 per cent. on each group. A 2nd A. may now be taken on the Latin, French, or German optional subject.

4. Will there be any change in the subjects for the next Entrance or Intermediate Examination?

G. M. K., Rugby.

None for Entrance. The changes for Intermediate were given in the September number of the JOURNAL.

5. What mathematics are required for first-class certificates?

E. S. E. D., Chatham.

*Arithmetic and Mensuration. Algebra, through Binomial Theorem. Euclid, six books. (Definitions only of Book V.) Natural Philosophy, properties of matter, statics, hydrostatics, pneumatics and dynamics. Physical Science, heat, light and electricity.*

6. Will candidates for 2nd class be examined in music and drawing in 1878 and 1879?

TEACHER, Alb.

Yes, at the professional examination after passing through the Normal School. Walter Smith's *Intermediate Drawing Manual* is recommended.

7. Must a person passing the Intermediate Examination pass his professional examination in the county where he passes his non-professional?

SUBSCRIBER, Claremont.

The Intermediate being Provincial, he may receive his Model School training in the county in which he intends to teach.

8. Can an Intermediate or second class A. who has not taught on this certificate, but who taught successfully three years on a third class certificate, after taking out his professional second at a Normal School, take out a first class without teaching at all on the second? If not, how long must he teach on his second? Must he attend the Normal School to prepare literary work for a first, and if so, how long?

A. S., Whitby.

He has the option of teaching two years or attending the Normal School for one year after receiving his second class certificate before writing for a first.

9. Can a teacher who obtained a third class certificate for three years, and did not teach during the first half-year, have his certificate extended so as to enable him to teach the full three years?

SUBSCRIBER.

The Minister of Education may extend the certificate on the recommendation of your Inspector.

10. In a case where a Union School Section has been dissolved during the present year, the dissolution to take effect on Jan. 1st, 1879, can the Trustees who belong to the parts separated from the main section assist in engaging a teacher for that section for the coming year?

A. M.

The Board remains in force until the dissolution takes place. Their action in relation to a part of the old union section would require ratification by the new Board in that part.

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.

LEEDS.

The next regular meeting of Teachers' Association, District No. 2, will be held at Farmersville, on Friday and Saturday, 15th and 16th November, 1878, commencing at 9 a.m.

**PROGRAMME.**—Friday, November 15th—Practical Work in the Model School. Discussion on "Merit Cards, and Mode of Distribution," opened by R. Kinney, Inspector of Public Schools. "Chemistry for Second Class Candidates," by A. Bowerman, M.A., Head Master Farmersville High School. Essay: "The School," by Miss Beatty. Analytical Arithmetic, by H. E. Eyro, Mathematical Master, High School, Farmersville. "Question Drawer." Evening Session, 7.30—Addresses, and a paper on the "History of Educational Efforts, with special reference to Method," by J. A. MacCabe, Esq., Head Master Normal School. Saturday, November 16th—Discussion on "The present phase of English Grammar," introduced by Mr. Bowerman. "Natural Teaching," by Mr. MacCabe. "Object Lessons," by Charles Clarkson, B.A., Head Master Brockville Model School. "Decimal Fractions," by I. S. Rowat, Head Master Farmersville Model School. Essay on "Order," by Miss Fulton. "Question Drawer." Discussion on "Prize Giving." "English Literature" Fiction of Officers. Auditing Accounts, &c.

It is expected that all teachers in the district will be present, and take part in the work of the Association.—R. KINNEY, Secretary.

WELLINGTON.

The half-yearly meeting of First Division of Wellington and Town of Guelph Teachers' Association will be held November 1st and 2nd, 1878.

**PROGRAMME.—Friday, November 1st—10 a.m.,** Object Lessons, Mr. Somerville; 11, "How to Make Country Schools Attractive," Miss Foster; 11:30, Roll Call, Financial Report, &c. 1:30 p.m. "School Discipline," G. W. Ross, M.P.; 2:40 p.m., Provincial Association—Report of Delegate, Mr. Boyle, 3 p.m., "Time Tables, Registers, Reports, &c.," Mr. Moran; 4 p.m., General Discussion, Evening Session—7:30 p.m., Public Lecture, Town Hall, "Elements of National Power," G. W. Ross, M.P. **Saturday, November 2nd—9 a.m.,** Question Drawer Answers, 9:30, Incidentals of Teaching, Miss Smith, 10, Competitive Examinations, Mr. Sanderson, 11, Address to Teachers, G. W. Ross, M.P., 12, General Business.

#### FRONTENAC.

The semi-annual meeting of the above association will be held at the Court House, Kingston, on Friday and Saturday, 1st and 2nd November, 1878.

**PROGRAMME.—Friday, November 1st—11 a.m. to 12,** Business Meeting; 1:30 to 2:30 p.m., Arithmetic, Mr. Sumner; 2:30 to 3:15 p.m., A Reading with Discussion, Mr. Bolo; 3:15 to 4 p.m., Geography to Beginners, Miss Woodard; 4 to 5 p.m., Irregular Attendance, Mr. T. Bridge; Evening, 7:30, Public Lecture, **Saturday, November 2nd—9 a.m.,** Incidentals Address, Prof. Dupuis; 10 to 11 a.m., Elementary Composition and Letter Writing for Primary Classes, Mr. D. Robb; 11 to 12 m., Question Drawer—Grammar, Mr. S. Woods; Discipline, School Management, &c., Committee; 1:30 to 2:30 p.m. Free hand Drawing, Prof. Dupuis; 2:30 to 3, Selection of Time and Place for holding next meeting, &c.

The meetings will be open to the general public and all persons interested in the cause of education are cordially invited to attend. All persons who intend to be present are requested to prepare themselves to take part in the discussion of the subjects brought before the Association. The committee trust to secure the services of an eminent gentleman for the public lecture, but they are unable, at present definitely to announce it. S. Woods, Esq., M.A., has kindly consented to answer questions in grammar through the medium of the Question Drawer.

N. F. DUPUIS, President. J. W. HENSTRIDGE, Sec'y-Treasurer.

**NORTH HASTINGS TEACHERS' CONVENTION.**—The first semi-annual meeting of the North Hastings Teachers' Association was held in the new school, Madoc, on 3rd and 4th prox., and was a splendid success in every respect. Nearly every teacher in North Hastings was present, and many friends of education from all parts of the county. At 10:40 a.m. the Association was called to order, Inspector Mackintosh, President, in the chair. Mr. Curtis, of the Madoc Model School, delegate to the Teachers' Provincial Association, made his report, and the Association then adjourned, to meet at 2 p.m.

At 2 p.m., Mr. Curtis proceeded to discuss the II class Grammar paper of July 1878. He fully analyzed the different extracts, parsing the more difficult words and handling his subject in an able manner. The Hon. A. Crooks, Minister of Education, and Dr. McLellan, M. L. D., now entered. An address from the Association to the Hon. Mr. Crooks was read by the Secretary, Mr. Curtis. The Minister of Education, in his reply, referred to the progress in education indicated by the erection of such a fine school house in the village of Madoc; expressed his great pleasure at meeting so many teachers from the different parts of the county; recognized Mr. Inspector Mackintosh's peculiar fitness for such a county as this, and concluded an eloquent address amidst loud applause.

Mr. J. W. Rodgers, Principal of the Stirling Public School, then read a thoughtful and exhaustive essay on "How to teach Reading."

Dr. McLellan then took up "Algebra," and prefaced his discussion of this subject by a few remarks. He said it gave him great pleasure to be present at the opening of this fine school; thought that school houses like this one in which they were assembled should have an opening celebration. He then proceeded with the subject of algebra, giving the teachers many useful hints and splendid methods of the more difficult factoring, &c.

On the morning after, Miss Cowie read an able essay on "Method of teaching oral lessons."

Short speeches on the subject were made by Inspector Mackintosh, Mr. Curtis, Inspector Johnston and Mr. Thompson.

"Methods of teaching writing," by Mr. Merton, was then introduced. He read an instructive paper on the subject, which was followed by general discussion.

Mr. Thompson then read an essay on "How to teach History," which was characterized by Prof. Dawson as the best essay he had ever heard read at an institute.

In the afternoon, Prof. Dawson took up the subject of "English Literature." He cordially approved of the introduction of this subject into the course of the studies for third class teachers; showed that its tendency would be to encourage a more extensive reading of the best English authors among us Canadians; if properly taught it would enable the children to appreciate the beauties of the best authors; warmly defended Lord Byron against the slanders of Mrs. Harriet Beecher Stowe, and concluded an able discussion of the subject amidst applause.

Short speeches on the subject were also made by Inspectors Johnson and Mackintosh, Dr. McLellan, Mr. Curtis, Mr. Rodgers and Mr. Thompson.

Dr. McLellan followed with the important subject of "Arithmetic," which he discussed with his usual great ability.

On the evening of the 3rd, the Hon. Adam Crooks gave a lecture in the Presbyterian Church, which was crowded by the elite of Madoc, and all the teachers attending the Association.

A. F. Wood, Esq., was called to the chair. He made a few appropriate remarks, and concluded by reading an address on behalf of the Board of Trustees of the village of Madoc, to the Hon. the Minister of Education. The Hon. Mr. Crooks, after a suitable reply, delivered an able lecture, in which he touched upon the progress of education in Ontario, and an-

nounced that Ontario had been awarded a gold medal of the highest class for her splendid school exhibit at the Paris Exposition. At the conclusion of the lecture, Dr. Boulter, M.P.P., gave a speech in his usual happy style, and concluded by moving a vote of thanks to the Hon. Mr. Crooks, which was responded to by the whole audience rising to their feet.

The evening of the 4th was principally occupied by Dr. McLellan, who delivered an able and eloquent address in his best style, which was frequently applauded.

HALTON held its half-yearly meeting at Acton, Sept. 27th, 28th and 29th. The chair was occupied by the President, R. Little, Esq. Various subjects of interest were brought before the teachers; Grammar and Composition, by John McNabb Malcolm; School Discipline, by Rev. D. B. Cameron, of Acton; Geography for Advanced Classes, by the President; and Hygiene, by Dr. Lusk. Uniform Promotions, by Mr. H. Cameron; this question was earnestly and warmly debated, and at last laid on the table for further consideration.

Dr. McLellan was present and delivered his excellent lecture, "This Canada of Ours." He also showed how to teach Arithmetic to junior classes, afterwards solved several apparently difficult problems on the analytic method. R. Lewis, of Toronto, gave a very interesting lecture on "Reading, and how to teach it." A. Macallum, of Hamilton, delivered a very instructive lecture on the "History of Education in Ontario."

An entertainment was given on Friday evening, 28th, at which the people of Acton rendered very valuable aid. Proceeds, about \$20.00. About sixty teachers were present, and at the close all went to their homes feeling they had been fully rewarded for their attendance at the meeting. All the teachers were accommodated with free homes by the kind people of Acton. Next meeting will be held at Georgetown, Feb. 27th and 28th, 1879.

ROBERT LITTLE, Esq., President.

Lowville, Oct. 7th, 1878.

R. COATS, Secretary.

**EAST MIDDLESEX TEACHERS' ASSOCIATION.**—The regular meeting of the above Association was held in the County Hall, London, on the 18th and 19th prox. Mr. J. Dearnness, President, in the chair. The Management Committee reported that the receipts of the Association during 1877 had been \$388.07, and the expenditures \$283.92, leaving a balance in favor of the Association of \$104.15. The Library Committee reported that there were 389 volumes in the library; that no additions have been made during the past year, and recommended the purchase of several scientific works. Mr. Noble Dickie took up "Short Methods in Arithmetic," and explained a number of valuable hints. Mr. Dearnness and Mr. Hart, of New York city, followed by explaining others which many were unacquainted with. Mr. Alex. McMillan then ably discussed "Incentives to Study." Messrs. Dearnness, Hart and Eckert followed in a few remarks on the same subject. Mr. Hands next took up the subject "How to Teach Chemistry." He favored experimental chemistry, as the best means of obtaining a full knowledge of the subject. The first subject under consideration on the second day was "Canadian History," by Mr. Alex. McQueen. He said Canadian history was a subject to which very little attention had been paid heretofore. As we had no good text book on the subject, it became the duty of the teacher who expected to teach it successfully to arrange the leading facts so as to be easily understood. The teacher should instil into the youthful mind a spirit of patriotism, and by this means create a desire for its study. He would commence by asking them to draw the national flags of Canada and Great Britain, and by this means they would become interested. He divided the subject into two parts: 1st, Canada under the French, from 1497 A. D. to 1760 A. D.; 2nd, Canada under the British, from 1760 A. D. to the present time. These he again subdivided into two and four divisions respectively. The several subdivisions were arranged in tabulated form, showing the principal events and leading features in each.

The next subject, "Geography," was taken up and ably handled by Mr. D. W. B. McKay.

Mr. Carson, of the Model School, next dealt with that very important subject, "Map Drawing." He divided his lesson into seven parts, taking up the leading features under each head. He adopted the plan of allowing one pupil to draw out line maps on the blackboard, while the others were at the same work at their seats. He taught but few facts at a time, and those thoroughly.

Mr. J. Houston, M. A., took up the subject "English Literature, particularly that of Milton." He divided Milton's works into three divisions, viz:—Epic, and Dramatic. He arranged the divisions in a tabulated form, setting forth the different subdivisions under each. He divided the subject for the purpose of teaching into periods and sub-periods, dates, life, works and influences. A clear and accurate description of a number of the characters, together with a splendid analysis of the whole subject, was given.

The last subject on the programme, "Mensuration," was ably treated by Mr. Wm. O'Connor, M.A., of London High School.

**DURHAM.**—The County of Durham Educational Association held its semi-annual meeting in Bowmanville, on the 4th and 5th October.

Friday forenoon was spent in arranging for the Competitive Examinations.

tions to be held next March in each township in the county. The regulations, briefly, are, that pupils shall be divided into four classes, viz.: Special, Senior, Intermediate and Junior. The pupils of the Special class shall not be over 17 years of age, and shall be examined in the subjects of Arithmetic, Euclid (Book I), Algebra, Simple Equations, and Book-keeping. Senior class, not over 17 years; subjects: Reading, Writing, Spelling, Arithmetic Grammar, Geography as prescribed for Fourth Class of Public Schools, and English and Canadian History during the reign of Queen Victoria. Intermediate Class, not over 12 years; subjects the same as Senior, except that they are to have no history. Junior Class, not over twelve years; subjects those prescribed for Third Class in Public Schools.

To provide funds, every school sending candidates shall contribute one dollar for each class represented, and twenty-five cents for each pupil for each class in which he may write. In the Special Class three General Proficiency prizes will be given, and one prize in each subject. In each of the other classes eight General Proficiency prizes will be offered, and one prize for each subject; but no pupil will be entitled to receive a prize who does not take forty per cent. of the marks on the subject. Also Honor Cards will be granted to all who take forty per cent. of the total amount of marks of each subject.

In the afternoon W. Oliver, B.A., lectured on "Practical Chemistry," illustrating his subject with quite a number of interesting experiments. Then A. Purslow, B.A., delivered a most practical lecture on "English Idioms."

In the evening J. M. Buchan, M.A., High School Inspector, lectured in the Town Hall on "Poetry and Politics." The lecture was a clever review of the history of several nations, particularly the English, pointing out the close relation between political liberty and the highest development of literature.

On Saturday the first subject was "Geography," by Mr. R. J. Rowe. He was followed by J. M. Buchan on "Grammar." The next paper was on "The relation of the teacher's work to the success of the pupil in after life," by John Squair. Mr. Buchan then took up the subject of "English Literature," and gave practical illustrations of the best modes of studying it by selections from some of the lessons set for the examinations.

At the close of the lecture, it was resolved that in the opinion of this Association the work in literature prescribed for Entrance Examinations to High Schools ought to be shortened. It was also resolved that the work in literature prescribed for third class certificates ought to be shortened.

The Association adjourned, to meet again in Port Hope on the first Friday and Saturday of May, 1879.

**NORTH HURON TEACHERS' ASSOCIATION.**—The annual meeting of the above Association was held in the public school, Brussels, on Thursday and Friday, October 10th and 11th.

The president, Mr. Dewar, P. S. I., opened the meeting with a brief and appropriate address. Mr. James Turnbull, B. A., of Clinton, then followed, and gave a very interesting account of the proceedings of the Ontario Teachers' Association, for which he received the thanks of the meeting.

Mr. James Dickson, of Grey, took up the subject of Arithmetic, and gave some very neat solutions to questions appearing on third class papers.

During the course of the afternoon Mr. J. A. McLellan, M.A., LL.D., of Toronto, took the platform, and in his usual masterly and happy style handled the subjects of arithmetic and algebra. His remarks on the former of these were highly edifying and exhaustive, embracing comments and hints on the subject from the first notions of numbers to the most complex problems. His lesson on algebra was most excellent, and was received with a keen relish by all present.

Mr. McFaul, of Seaford, gave a number of admirable solutions to questions set forth in the third-class algebra for July, 1878.

At 8 o'clock in the evening, Dr. McLellan appeared in the town hall, to give his lecture on reading, and although notice had only been communicated to the citizens during the evening, the spacious room was filled to its utmost capacity. He began by referring to the paramount importance of this subject, and reviewing at some length the means by which it might be successfully taught in our public schools. He considered reading one of the most poorly taught subjects on our curriculum, and attributed this partly to the fact that it is only taught incidentally, as a means of obtaining other information, and partly to the lack of elocutionary power among our teachers.

Dr. McLellan next treated the audience to a lecture on education. He referred in high terms to our national system of education, its excellence, its liberality, and its superiority over that of contemporary systems. He maintained that the profession of teaching is one of the noblest on earth, in the dignity of its object, in the responsibility of its action and in the sublimity of its character. As he gave a synopsis of his life, in reference to the difficulties he had encountered, and the obstacles he had overcome,

every young teacher swelled with noble resolutions, and acknowledged the encouraging and electrifying power of the individual who addressed him.

Friday the programme was resumed, Mr. Jas. Turnbull, of Clinton, taking second-class literature, to the entire satisfaction of all present.

Mr. Acheson dealt with third-class grammar in a very sensible manner.

Mr. Jas. Ferguson, of Wingham, criticised the readers very nicely, and afterwards read a well-prepared essay on "The Defects of Our Educational System."

Rev. P. Musgrove delivered an excellent address on "Morals in Public Schools."

About seventy teachers were present, and the success of the affair surpassed the most hopeful anticipations.

**SOUTH GREY TEACHERS' ASSOCIATION.**—The teachers of South Grey held their semi-annual meeting in Princeville, on Thursday and Friday, September 26th and 27th. The President, Mr. W. Ferguson, P. S. I., in the chair. Some valuable practical suggestions were made by the President, which were considered and discussed by the Association at various stages of its proceedings.

R. Ingate read an interesting paper on the educational difficulties he experienced in enforcing the School Law and Regulations, especially as applies to the instruction of pupils in Grammar, Geography, Arithmetic, Latin and Greek Roots, etc., his idea being that there was too little that was practical and useful inculcated by the text books and teachers of the day.

Dr. Gunn, of Durham, then read an able paper on "Chemical Affinity." This was followed by a carefully prepared paper on the subject of "How to Secure the Continued Efficiency of the Association," by Mr. D. Prior. Amongst other ideas the essayist recommended compulsory attendance, the importation of foreign talent, and the cultivation of a generous social Christian spirit amongst the members. On Friday, papers were read by Mr. R. B. Walker, on "Teaching and promoting good reading in all classes," by Mr. A. Ferguson on "Concurrent promotion examinations," by R. Bell on "Teaching Geography" to junior classes, and by Mr. J. I. Buchanan on "Music in the School." He showed that it was the duty of teachers to harmoniously cultivate all the talents of pupils, the utility of music, how it improves the heart, soul and health, and conduces to cheerfulness, happiness and order. Resolutions that all meetings of the Association should in future be held in Princeville, and that all teachers should urge upon trustees the necessity of paying their salaries quarterly, were passed, and the Association adjourned, to meet next May.

**NORTHUMBERLAND TEACHERS' ASSOCIATION.**—The semi-annual meeting of this Association was held in the High School, Brighton, on Thursday and Friday, 10th and 11th October. The programme was (1) Thorough Preparation of School Work on the part of the Teacher, by W. E. Sprague, Principal Model School, (2) How to Teach Arithmetic, by Inspector Scarlett; (3) Reading, by W. E. Bartlett; (4) How to Secure the Co-operation of Trustees and Parents, by Mr. Hayward; (5) Geography and History, by Prof. Macoun, Albert University; (6) Time Required to Complete each Form in the P. S. Curriculum, by S. Kinney. The President, Mr. D. I. Johnston, opened the meeting by reading an admirable paper on Mental Impressions. The theme was a very appropriate one for a President's Address, and was handled in such a manner as to leave its impress upon the minds of the Teachers. Mr. W. E. Sprague then read in his masterly style a paper on "Thorough Preparation of School Work on the part of the Teacher." The article was most comprehensive yet concise, and well calculated to still further arouse the teachers to renewed effort in making their school work a part and parcel of themselves. Mr. Sprague is thoroughly modern in his views and fully up to the times. He was evidently master of his subject, and displayed anew that ability to summarize and fitly present a subject which has ever characterized him as a teacher and an educationalist, and reassured all present that we have every reason to feel proud that the training of teachers in our County Model School has been entrusted to a gentleman so thoroughly competent in every respect. Inspector Scarlett addressed the teachers on Arithmetic. Many valuable hints were thrown out—hints that cannot fail to benefit teachers even of large experience. Mr. W. E. Bartlett, then introduced in a very lucid and satisfactory manner the subject of "Reading." Prof. Macoun then followed with Geography. The Prof. exhibited a thorough mastery of his subject, and so portrayed his valuable ideas that his every remark must find permanent lodgment in the minds of all that had the pleasure of listening to him. His presence added much to the life of the Association. Mr. Kinney read an essay on the P. S. Curriculum. It was based on his own experience, was thoroughly practical and well received. Prof. Macoun's lecture in the evening on the "North-West" was a complete success. As the Prof. is an old friend of the teachers in this county, he will ever be welcomed in our midst and highly appreciated. The attendance of teachers and friends of education was good, and the business transacted and the topics discussed were of importance to the teaching profession.

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