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The Canada School Journal.

Vol. III.

TORONTO, SEPTEMBER, 1878.

No. 16.

JAMES A. McLELLAN, M.A., LL.D.,
PRESIDENT OF THE TEACHERS' ASSOCIATION FOR ONTARIO.

Perhaps no other name has been so constantly before the people of Ontario in connection with educational affairs, during the past seven years, as that of Dr. McLellan. The Legislature in 1871 made some important additions and changes in the School Law of Ontario. Dr. Ryerson then secured what he regarded as the crowning glory of the system whose foundations he had laid so deeply and firmly a quarter of a century before. One of the important features of this Act was the establishment of a uniform examination for teachers throughout the Province, instead of the county examinations held before that time. A committee of three was appointed to prepare and conduct these examinations. Dr. McLellan was one of the original three. He became a provincial school officer therefore in 1871, and since that time has been intimately connected with the working out of the reforms made in the school system of the country. The period from 1871 to 1878 will undoubtedly be most strongly marked in the educational history of Ontario by the growth and systematizing of examinations. The Entrance and Intermediate examinations in High Schools, and the uniform examinations for First, Second, and Third Class teachers, have been established, and have become prominent parts in the educational system of the province. Dr. McLellan not only suggested the advisability of holding some of these examinations, but did a great deal to arrange the details so necessary to the efficient working of the whole. His High School reports to the Department in 1871 and 1872 called attention to several of the weak points in the Law and Regulations, as they stood at that time, and suggested the remedies that have since been adopted.

Dr. McLellan was born in Lower Stewiacke, Nova Scotia, in 1832. His parents removed to Ontario in 1837. His boyhood was spent at Thornhill. It was in that village that he received his elementary training. He was very fortunate in having for his teachers there two graduates of Victoria College. By them he was first initiated into the mysteries of algebra, euclid, and natural philosophy—subjects which he even then studied with great delight and success. In 1848 he received a first-class certificate from the County Board, and in 1849 entered the Normal School in Toronto. Here he succeeded in obtaining a high stand-

ing and a special recommendation from the school authorities. After leaving the Normal School he taught a public school for a short time, but not being fully satisfied with the salary he received (fifteen dollars per month) he left the profession for about five years. He resumed the duties of a teacher in 1856, and has not since forsaken the field of labor for which he is so eminently fitted. In 1857 he re-entered the Normal School, and, though he attended only a part of a session, succeeded in obtaining a first-class certificate, grade A. He also received a special recommendation from the Normal School masters, T. J. Robertson, M.A., and Dr. Ormiston. He matriculated in the University of Toronto, in the following year, taking first-class Honors and a General Proficiency Scholarship. He was appointed Principal of St. Mary's Central

School in 1858, but kept up his University work, passing yearly examinations while teaching, and taking first-class honors in two departments. He attended lectures for one year, and on graduating received two medals, one in Mathematics, the other in Logic, Ethics, Metaphysics and Civil Polity. Such a distinguished position had only been previously taken by two graduates. He ranked especially well during his course in Mathematics. Professor Cherriman wrote his opinion of his mathematical ability and attainments as follows:—
"I consider him to possess great Mathematical power, and to have cultivated it with very commendable industry and perseverance. I noted him also as being not only a successful student, but an original and independent thinker, with no small facility of expression. I may further state that, at the time it was in contemplation to appoint a Mathematical Tutor in University

College, I had fixed on Mr. McLellan to occupy this position." He wrote for his M.A. in 1873, and in the language of Hon. Chief Justice Moss, then Registrar of the University, his "Thesis was adjudged worthy of a prize,—an honor made all the more distinguished by the fact, that at the time only two other persons had ever received it since the establishment of the University." He obtained the degree of LL.D. also in 1878. While in St. Mary's he succeeded in founding its High School, and establishing for it a high reputation. In 1864 he was appointed Principal of the Yarmouth, Nova Scotia, Seminary. He remained in this position for five years, during which time his students took high honors in Dalhousie, McGill, the Wesleyan, and Toronto Universities.

In 1869 he was offered the Mathematical Professorship, and the



position of Vice-President in the Methodist University at Sackville, N.B., but preferred a Mathematical Mastership in Upper Canada College, as he was anxious to return to Ontario. This position he held until 1871, when he was selected by the Council of Public Instruction to fill the important position of High School Inspector. This position he still continues to fill. And the wonderful improvement which has taken place in the High Schools during the past seven years, is universally acknowledged to be, in no small degree, due to his energy and ability. As already stated, he was also made a member of the Central Committee on its first organization in 1871. As a member of this Committee he has performed a vast amount of hard work in the interests of educational progress, both as an examiner and an adviser to the Department. In 1876 he made a tour through the British Isles for the purpose of inspecting the Public Schools, and the knowledge he there gained has been of service to the Educational Department, under whose auspices he was sent.

Dr. McLellan has published two works on Arithmetic: Examination Problems and Mental Arithmetic. In the preparation of the first named he was assisted by Thomas Kirkland, M.A., Science Master in Toronto Normal School. Both works have been well received by teachers in Canada and the United States. He is also well known, especially in Ontario and Nova Scotia, as a most effective public speaker. He was a prominent advocate of Confederation of the Provinces while in Nova Scotia. Since the organization of County Teachers' Associations under the regulations of the Education Department, he has attended many Association meetings, and rendered very efficient services. In 1877 he was elected President of the Provincial Teachers' Association. This was the highest honor which his fellow-educators could confer upon him. The Association at its late meeting unanimously re-elected him for a second term.

The value set upon his services by the Educational Department and by the people of Ontario, was justly expressed by the Minister of Education during the last session of the Ontario Legislature. Replying to some remarks regarding the policy of the Educational Department, Mr. Crooks said: "It is mainly due to the extraordinary ability of Dr. McLellan, or to what one might almost call his traits of genius, as an arithmetician and mathematician, that this country stands so high to-day in the departments of arithmetic and mathematics as well as general literature."

Gleanings.

DISORDER IN SCHOOLS.

BY J. VINCENT COOMBS.

When we speak of disorder in school, we generally mean that the children are rude and noisy. But most of the disorder does not originate with the pupils. Four parties are interested in the schools: the people, the parents, the teachers, and the children. Each, or all, may be out of order. The people should pay the expenses, and furnish agreeable houses for instruction. If they do not, they are disorderly, and will greatly embarrass the progress of the school. Many of our school houses are dirty hovels, suitable only for the home of the owl, or the abode of the bats and vampires. Once I visited a school where the temperature at the ceiling was eighty, while at the floor it was only forty-five. Yet the teacher scolded and fretted because the pupils were restless. Now, the teacher was not the cause of all this trouble. The public should furnish better buildings. You might as well expect a man to be healthy and orderly with his head in the torrid zone and his feet in the frigid, as to expect pupils to be orderly in such extreme temperature.

Parents are in order when they send their children regularly, clothe them properly, supply them with books, and encourage the cause of education. If parents knew the disorder they indirectly cause by permitting their children to squander the hours which should be given to repose, in midnight dissipation and vicious customs, they would watch the clock and see that the school child retires at an early hour.

Teachers are in order when they are masters of the subjects which they are required to teach, when they control themselves, and when they govern their pupils. The teacher should be wise. He should give absolute evidence of scholarship before he is permitted to enter the school-room. No drilling, no tact nor experience can compensate for the want of knowledge. But in addition to culture the teacher needs a professional preparation. He

needs instruction in the science of discipline. Knowledge only brings him to the problems; his own personal powers must solve them. The very worst disorder is a disorderly teacher. There are teachers whose peculiar character is whining. They whine because their school is too small, and whine because it is too large; they whine because it is unruly, and it is unruly because they whine; they whine because they are sick, and they whine enough to make the entire school sick.

I would have such teachers taken out and whipped until they laughed.

If teachers are cheerful, wise, good and enthusiastic, disorder will hide itself. It is difficult for us to listen to a dry sermon, but we hang with breathless silence for hours upon the sweet tones of Emerson. Our pupils will be attentive if we give them something worthy their attention.

Go forth, fellow-teachers, and carry the torch of instruction into the cities, towns, villages and every rural district. Instead of a system of forced obedience, propagating imbecility, let us have a system of love that will take hold of the hearts of the pupils.—*Normal Teacher.*

ANOMALIES OF ENGLISH SPELLING.

HOW THE ALPHABET IS TORTURED TO GIVE OVER FORTY SOUNDS.—One of the principal difficulties in learning the English language is the inexplicable manner in which most of the words are spelled, the twenty-six letters of the alphabet varying with each other to represent the forty or forty-two sounds of the language in the most bungling and disorderly manner.

Be the capacity of the child ever so good, yet he must spend years in learning these "curiosities of literature," while a foreigner can only master our noble language by a vast expense of labor, patience and time.

The Protean nature of the vowel sounds is familiar to all. A few amusing examples will show that the consonants are nearly as bad:

B makes a road broad, turns the ear to bear and Tom into a tomb.

C makes limb climb, hauged changed, a lever clover and transports a lover to clover.

D turns a bear to beard, a crow to a crowd and makes anger danger.

F turns lower regions to flower regions.

G changes a son to a song and makes one gone!

H changes eight into height.

K makes now know and eyed kayed.

L transforms a pear into a pearl.

N turns a line into linen, a crow to a crown and makes one none!

P metamorphoses lumber into plumber.

Q of itself has no significance.

S turns even to seven, makes have shave, and word a sword, a pear a spear, makes slaughter of laughter, and curiously changes having a hoe to shaving a shoe!

T makes a bough bought, turns here there, alters one to tone, changes ether to tether, and transforms the phrase "allow his own" to "allow his town!"

W does well, e. g., hose are whose, are becomes ware, on won, omen women, so sow, vie view; it makes an arm warm, and turns a hat into—what?

Y turns fur to fury, a man to many, to to toy, a rub to a ruby, ours to yours, and a lad to a lady!—*Moses Patterson.*

THE LIBRARY.—Though a library is an educator, it is generally a silent teacher. Careful reading can only be induced by the slow awakening of a wider interest, and by connecting the imagination with deeper renderings of the same theme. The library must be the village or city censor, limited in its office by the amount that the tax-payers are willing to contribute for their own improvement.—*Kate G. Wells, in Christian Register.*

DRAWING is the proper way to express what the eye sees, indeed the only sure test of what is seen. As the future prosperity of the country will depend largely upon diversified industrial development, as the great majority of the pupils of our public schools must enter into these industrial occupations, in one position or another, it seems only the part of wisdom to recognize this fact, and in our public schools so arrange the instruction that what pupils learn in their school years will have some practical relation to the occupation of their adult years.—*Am. Jour. of Ed.*

PUBLIC SCHOOLS IN LONDON.

The work doing in London attracts attention from all educational centres. With its population of three and a half millions, making it the world's metropolis, it has only lately taken in hand the question of its public schools. In 1870 it was stated that there were 150,000 children of the proper age excluded for want of room in the existing schools. The School Board determined to remedy this by erecting school houses for 112,000 pupils; a thorough list was made of the number in each school district in want of school facilities, and measures taken to supply them. Of course, there were legal difficulties and the opposing interests of existing schools to be overcome and reconciled, and this done, there were 134 school houses ordered in different parts of London. By September of 1874 there were 65 new schools opened for 61,985 pupils, 35 more under way for 26,736 children, and sites designated for 34 school houses to accommodate 20,207 more—in all 134 school buildings for 108,930 children. The cost of the sixty-five school houses was less than fifty dollars per pupil. The school rooms were fitted up for classes of 50, 60, 70, and 80 scholars, and the school houses planned so that there would be six with 250 children, twenty-five with 500, twenty-five with 750, forty-three with 1,000, thirty-two with 1,250 and three with 1,500. The School Board also took charge of eighty-four old schools, with 24,000 pupils, with room for 15,000 more, and these school houses were used by day for children, in the evening for adults for instruction in science and the mechanical arts. The old government of these schools was kept up as far as possible, but it was subordinate to the control of the School Board, whose inspectors made frequent visits and also held the annual general examination, which is prescribed with great minuteness of detail by law.

These schools have 243 male and 341 female teachers holding certificates, 791 pupil teachers, and about 500 on trial. The list of children attending them showed 79,700 on the rolls, room for 75,275, but an average attendance of only 58,507; but as this was partly due to the strict system of noting as absent all who did not answer to the roll-call on opening, measures were taken that reduced the number of absentees, total or partial, at least one-half, and the visitors appointed by the Board worked with such energy that the number registered was increased from 208,520 to 343,102, and that of average attendance from 171,769 to 256,391. Although competition is specially favored in all English legislation, the School Board received each year for four successive years an average of 79,000 pupils, and not one private school was opened.

The children in these schools in London pay, and 15,000 of the scholars that had formerly gone to schools provided for the poor free of cost now pay every Monday their penny. The School Board receives from 28,000 children one penny weekly, from 48,000 two pence and three pence, from 3,000 four pence, and from 1,000 sixpence. Of 1,325 families who stopped their payments, 500 recommenced, and 558 children were exempt on account of their extreme poverty. The opposition to payment came from the small dealers and from the country people, who used to turn an honest penny by the labor of their children, and did not like losing this at the same time that they were obliged to send their children to school and pay for their instruction. The law of compulsory attendance was enforced by the aid of visitors, whose best labor was in securing a large voluntary increase and in making the public schools deservedly popular.

The London School Board exercises its supervision over private schools, and with such effect that, in 1875, there were 85,000 pupils in them under their regulations, with a marked improvement in all respects. It has a limited power over the children left to run wild in the streets, and it has put over three thousand of them at Industrial Schools or on Training Ships. With all its outlay, the cost, which was established at sixpence on the pound in 1870, was found, after three years, to be less than a half-penny per year, including current expenses, interest on loans for the purchase of property, and building, &c. The money was borrowed at three-and-a-half per cent. for fifty years, so that the generations yet to come, who are to be principally benefited by these reforms, will also share in the expense, and in 1922, when the debt will be finally paid off, there will certainly be some substantial reward due the authors of the system of popular education inaugurated in London in 1870. The School Board still has a great work to do; for there are still 190,000 children either abandoned by their parents and given to mere vagabondage, or badly taught in inferior schools. The plan is to increase by 7,000 annually the list of their pupils, and to build ten new school-houses every year to

house them properly. The great merit of the London School Board is that it has carried its system into effect so thoroughly and so well that there has been little real difficulty in applying the law under which it exists, and in enforcing its provisions so as to secure the support of the vast population living under it, and its schools are filled with the children without distinction of fortune or position, while they are opened to those who hitherto were condemned to grow up in ignorance or vice.—*Pennsylvania School Journal*.

Native genius is not monopolized by Canadian candidates for certificates. The following answers were given at a late examination in one of the counties of Iowa:

With what country did we carry on the war of the Revolution? Ans.—Africa.

What is the first work to be performed on taking charge of a school, and what is your method of performing it? Ans.—My first work, generally, is to thrash about one-half dozen of the scholars, and my method is variegated.

Give the name of the author of the Declaration of Independence and the name of the body that issued it. Ans.—John Hancock.

What are the four prominent methods of teaching beginners to read? Ans.—To endeavor to make your own feelings and sentiments the same as the author.

Give the course of the Mississippi river. Ans.—It flows from its source to its mouth.

Decline ox. Ans.—Pos. ox, com. better ox, super. best ox.

What is cancellation? Ans.—A short operation of performing examples.

Decline Attorney. Ans.—Attorney smiles; attorneys smoke (generally).

Give your plan of a daily recitation in reading. Ans.—Form class in row, standing with book in left hand.

What is climate, and on what does it depend? Ans.—Is pure or impure air, and depends upon the condition of water, upon the ground, upon vegetation and upon the culture of the ground.

Another answer to the same is as follows: The climate is cold in the north and east, generally temperate and healthful in the middle and west, and warm in the south; it depends on social, political and commercial importance.

What is a sentence? Ans.—A line of words from one period to another.

What words should be emphasized in a sentence? Ans.—The most emphatic words.

Describe the heart. Ans.—The heart is a conical shape and situated between the right and left ventricle.

Name ten of the largest countries in Europe. Ans.—Italy, England, Russia, Prussia, Germany, Portland, etc.

What form of government has Russia? Ans.—A desperate form of government.

—Some teachers of our acquaintance are evidently laboring under a strange misconception of their duty in regard to sustaining an educational journal. With charming simplicity, they sometimes say to us: "What a splendid journal you are publishing! I can hardly wait for the first of the month; and Miss A. no sooner gets her copy than I borrow it, and read it before she does."

Another says: "I am so glad my trustees subscribed for the Journal for our library. I take it home, and keep it there until every word is read."

This is a verbatim repetition of remarks quite frequently made in our hearing.

We have a few words to say, in all seriousness, to those of our readers to whom the words apply. It should be beneath the dignity of the teacher to borrow an educational journal—in fact, no true teacher will do so. What would be thought of a lawyer who constantly borrows a commentary on law, or a physician who borrows a text-book on medicine?

So every teacher should own, at least, one educational journal; and if its merits do not reach the high standard he considers necessary, his earnest endeavors should strive to supply every deficiency, and make it in reality an aid to the educator.

Another point we desire to have understood. There are already many copies of the Journal subscribed for for the District Libraries. These copies belong strictly to the library, and not to the teacher. They are for the use of trustees and pupils, and should not be taken from the school-room, except in the same manner as are other library books. We trust no teacher will consider himself absolved from the duty of subscribing for the Journal, because his district takes it.—*Pacific School and Home Journal*.

The Canada School Journal.

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

Some weeks since I received the June No. of your Jour. J. 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, SEPTEMBER, 1878.

THE CHAUTAUQUA LITERARY AND SCIENTIFIC CIRCLE.

There are probably few Christian people in Canada who have not heard of Dr. John H. Vincent, the recognized leader of the Sunday School world. British as well as American people freely accord to him the position which his learning, experience, and administrative ability have earned for him. "Chautauqua," though an odd word, needs to be interpreted to few Sunday School workers in America. Every one knows that it means rest, enjoyment, invigoration, music, eloquence, progress, development, normal class training, &c. Many thousands annually spend their holidays at the educational watering place on its beautiful shore. But "Chautauqua," with all its past fulness of meaning, is to have a far deeper, and wider, and grander significance. Dr. Vincent aims at making it the centre of an educational work, which will give culture and mental power to the people of his nation, yea of his continent. Recognizing the fact that the vast majority cease to study or read with an aim after they leave school, and that the advantages of a "liberal education" are confined to a very limited number, he has instituted the "Chautauqua Literary and Scientific Circle" to remedy these defects in our system of secular education. The idea is a grand one. It means a change in the reading of a race, it means a unification and systematizing of study for the masses, it means the uplifting of a higher standard of general intelligence, it means the awakening of dormant powers of investigation. These are outlines of its meaning now. The shadows of its significance in the days to come are still more vast. What practical form has the idea taken? What is the "Chautauqua Literary and Scientific Circle?" Simply a class formed of men and women of all grades of society, from all parts of North America, who agree to take a course of four years' reading in History, Literature and Science, and submit to an examination or examinations with the view of receiving a diploma at the close of the fourth year. The works to be read are to be selected by the Chautauqua Department of Instruction. All must read the whole

of the course for the first two years. Options will then be allowed, so that each may choose for himself the special department of study in which he is most deeply interested, and read more exhaustively in it. The time to be spent in reading is about three hours each week. Postal cards will be sent to the members of the circle monthly, so that they may report progress to the central department. No charge is at present made for admission to the circle. A fine reference library and a large laboratory are to be established in the grove at Lake Chautauqua, and the finest apparatus and most learned professors of American Universities are to be pressed into summer service for the benefit of those who can spend the summer months, or part of them, at the "educational watering place." Two of the finest telescopes in the United States were used by the class this year under the direction of Dr. Warren of Philadelphia. It is not essential that members of the circle should attend the classes at Chautauqua. They may read at home exclusively, individually or in smaller circles, or friendly, social parties.

"Visionary," is it? Pause before deciding. It startles you. Look at it on all sides and in all lights, and you will find that it has strong, vigorous roots which are going to fasten themselves firmly in the hearts and minds of the people. It may aid you in coming to a just conclusion to know that several of the ablest University Professors, and most prominent literary men in America, have given the scheme their unqualified approval. The first member of the circle enrolled is a Professor in a University. Over 700 became members this year at Chautauqua, and many of them will organize circles at their homes. Four hundred copies of Green's History of the English People were ordered in a single day for the members of the class.

The circle will supply a want that has long been felt. Nearly every school section has its debating society, many churches and Young Men's Christian Associations have literary societies of some kind. These organizations show the desire of the people for united efforts for mutual improvement. They all fail to a considerable degree in accomplishing their objects, because they lack completeness of plan, definiteness of aim, and systematic connection with each other. The Chautauqua Literary and Scientific Circle is just the central and directing organization required to enable such societies to accomplish fully the work which they now attempt. Teachers throughout the country, who find too much time on their hands, should keep themselves from growing rusty and indolent by forming circles in their sections. The members of these circles might meet in turn at each other's houses to do their reading, regularly, or at least once a month for review. In this way the expense of purchasing the necessary books might be borne by the circle as a whole, instead of by each member. It would not then be necessary for each one to have all the prescribed books.

KINDERGARTEN TRAINING SCHOOLS.

Frequent enquiries are made regarding training classes for Kindergartners. In response to them the first advice to be

given is, BEWARE. Kindergarten is a popular word, and many unscrupulous persons are attempting to make a living on the strength of it. A recent article in *Scribner's Monthly* says: "There are several difficulties which the promoters of Kindergarten work have to contend with. Everywhere there are people who pretend to have Kindergartens, without even knowing what a Kindergarten is. Quacks, both German and American, seek to make money out of the popularity of the name." There is only one German lady in America who has successfully conducted a training class for Kindergartners. Mrs. Kraus Boelte, 9 West 28th Street, New York, conducts a genuine Kindergarten, and any Canadian ladies who desire to be instructed properly in the system cannot elsewhere in America receive so good a training. Sham Kindergartening is worse than none. There is no institution in Canada which is recognized by the Froebel society as competent to train Kindergartners. Teachers and their friends will do well to be on their guard, lest some persons mislead them by pretending to be what they really are not. It is to be hoped that ere long Kindergartening may be introduced into the Provincial Model Schools by thoroughly competent ladies.

TEACHERS' CONVENTION.

The eighteenth annual Convention of the friends of education in Ontario was a very successful one. The attendance was larger than usual, and a great deal of practical work was done. The great question of the Convention was undoubtedly teacher training—how to add to the efficiency of the County Model School system. The educational progress of the future depends to a very large extent on the thoroughness of the professional training of teachers. It is of great importance too that this training be correct at the commencement of the teacher's course. Perhaps the best suggestion made in reference to the Model Schools was, that a regular Inspector should be appointed to take charge of them. The present system of having the work of examination done by the members of the Central Committee is only a temporary arrangement, it is to be hoped. No one of them can become familiar with the work as a whole at present.

While it is well to devote especial attention to the preparatory professional training of Third-class teachers, there is a great danger of neglecting to give sufficient care to the thorough professional training of First-class teachers. If County Model Schools are to be successful in the highest sense, men must be specially trained to conduct them. In the matter of higher professional teaching America is behind England, and England far below Germany. "Higher Professional Training for Teachers" would form a good subject for the Convention of 1879.

Contributions and Correspondence.

SUPERANNATED TEACHERS' FUND.

To the Editor of the Canada School Journal:

SIR,—Whether, without Dr. Ryerson, Teachers would have got pensions is more than I know; but one thing I do know, they have long ago seen their folly in opposing him in his efforts to so-

cure for them pensions in their years of disability. The opposition did not rise, as some think, from want of forethought on the part of teachers, but simply from their want of intention to remain in an avocation in which they had failed to realize the ease, honor and emolument that had attracted them into it. The difficulty in getting a respectable certificate, the difficulty in getting a situation, and the still greater one of holding it, together with the unhealthfulness of teaching, all co-operate to make the business undesirable; and, unless some inducement had been held out by way of pension, schools would be enquired after by men who would be but little acquisition to scholars. But pensions are just. No class of literary men are, even now, so poorly paid as teachers are. Ministers, for a weekly sermon an hour long, get \$1,000 a year; but teachers, for 30 hours a week, barely get half the sum. And then there is the difference in social standing. Teachers, such as I did, 30 years ago, taught for \$10 a month and boarded around, and under three months engagement; they saved nothing and spent their best days in the worst times; the people then were just as willing to pay more as the people are now, but they were unable to do so, and the pension we get now is but the just arrears; yet we thank the Government for its recognition of the justice.

J. IRELAND, Fergus.

THE TEACHING OF ENGLISH GRAMMAR.

The article on Current Mistakes in Teaching Grammar, sent by Mr. C. P. Mason as a contribution to the CANADA SCHOOL JOURNAL, was published in *The Educational Times* in England. Its publication led to the following correspondence:

To the Editor of the *Educational Times*:

SIR,—I have read with attention the elaborate paper on "Current Mistakes in Teaching English Grammar," by Mr. C. P. Mason, which appeared in a recent number of the *Educational Times*, and I ask your permission to make a few observations upon it. Let me at once confess that I am one of the tribe of "writers of Grammars" who have excited the displeasure of this gentleman, who does me the honor to quote a definition from a little book of mine, with the addition of one of his usual complimentary epithets; although, as definitions pass current from book to book, it is just possible some other author of a "two-penny dreadful" may be the real culprit. Be that as it may, the questions raised in the paper are sufficiently important in themselves to deserve careful consideration; and as I entirely dissent from Mr. Mason's views, I readily accept his challenge to the "tussle" to which he so courteously invited his audience (of whom I was, unfortunately, not one) when his paper was read.

The discovery which Mr. Mason has made is too important to be given in any other than his own words. It appears that hitherto "the writers of Grammars which are most commonly used have not been able to grasp the not very recondite truth, that words are not identical with what they stand for—that the noun 'book,' for instance, is not the article made up of printed leaves fastened together, which we buy at the bookseller's; and that, when we buy one of these articles, we do not purchase a part of speech." I need not stay to inquire whether this gentleman seriously believes that there are many writers on Grammar who do not know the difference between a noun and a book, as I should probably be met by the rejoinder, "If they write as if they did not, *tant pis pour eux*; they are none the less 'illogical,' 'absurd,' 'stupid,' 'childish blunderers,'" &c., &c., &c. But what if it is Mr. Mason himself who has blundered.—what if it is not Professor Bain "who cannot see," nor Dr. Abbott who is "inadvertent" (happy Dr. Abbott, to get off so easily!), but their critic, who, mistaking the true province of grammar and the proper function of the grammarian, has simply misconceived the whole matter?

Let us see how the case really stands. Taking Mr. Mason's own illustration of the "red rose;" we are all agreed that the word "rose" is a noun, and the word "red" is an adjective. As the controversy hinges on the use of this adjective and its relation to the noun, it is important that we should have a clear conception, at the outset, of the real office of the adjective as a part of speech. I shall give, in preference to my own, the well-known definition of Mr. Mill, quoted in several Grammars, as it bears directly on the illustration under notice, and his name carries an authority which even Mr. Mason will not dispute:

"As nouns substantive are the marks of ideas or sensations,

nouns adjective are marks put upon nouns substantive, or marks upon marks, in order to limit the signification of the noun substantive; and, instead of its marking a large class, to make it mark a subdivision of that class. Thus the word *rose* is the mark of a large class; apply it to the adjective *yellow*, that is, put the mark 'yellow' upon the mark 'rose,' and you have the name 'yellow rose,' which is a subdivision or species of the class *rose*."

But what is Mr. Mason's account of the matter? After a running commentary of some choice flowery of speech on the "exasperating instances of never-ending confusion between words and what words stand for," he proceeds—I must again quote his exact words—"It is but a variation of the same confusion when we are told that 'an adjective is a word added to a noun in order to mark or distinguish it more accurately.' Distinguish the noun? From what? You can only distinguish a word from a word; from what other word is the noun *rose* distinguished by the adjective *red*? Mark the noun? I say how? Does it give a peculiar shade of meaning to the noun? What logicians know as the connotation of the word *rose* is not affected in the slightest degree; the adjective does not mark the noun, it denotes the quality that marks the thing." On the contrary—with Mr. Mason's good leave—it does both. It not only denotes the quality that marks the thing, but it marks the noun which is itself a mark—or, as Mr. Mill expresses it, "puts a mark upon a mark"—and, by so doing, gives that "shade of meaning to the noun" which makes the difference between "rose," the *genus*, and "red rose," the *species*. Mr. Mason, in his own Grammar, concludes his definition of the adjective by telling us that the "adjective and noun together form a compound description of that which we have in our thoughts." It is the real character, the precise grammatical value of this compound or new description, which Mr. Mason, to use one of his own complimentary phrases, "has failed to grasp." The word "rose," standing alone, and applicable to all the roses in the world, although identical in form, has a different meaning—is, both logically and grammatically, a different word—when it appears in the combination "red rose," which applies only to roses which are red, and exclude those that are yellow or white. It has been attracted, limited, modified, or by whatever name we choose to denote the change from its original import, and "distinguished more accurately" by the use of the epithet, and the adjective has been the instrument of the change. It is nothing to the purpose to tell us that the "connotation of the word *rose* is not affected," as the common noun "*rose*" is already a connotative word.

It is the misconception of this fundamental grammatical principle which runs through the whole of Mr. Mason's paper, and has led him into the most absurd—well! let us say "inadvertences." Thus, when he asks—*à propos* of Dr. Abbott's definition of the adjective as distinguishing or enumerating the noun,—“In *three men*, how does *three* enumerate the noun *men* when there is only one noun,”—he misses the point, and simply mistakes the whole question. *Three* is not connected with the noun "men" in its general sense of *all mankind*, which would be a contradiction in terms, but with the noun in the new acceptance imposed upon it by the adjective, which, as it were, creates a special class or subdivision of men—a "three men class"—and it enumerates or tells the number of the class it has itself created. In other words, it does precisely what Dr. Abbott says it does, and what Mr. Mason says it does not do.—I am, yours obediently,

June, 1878.

GRAMMATICUS.

To the Editor of the Educational Times :

SIR,—I am sure that your courtesy will allow me space for a reply to the somewhat acrimonious attack made upon me in this number of the *Educational Times*, by a writer under the signature of "Grammaticus," a copy of whose letter you have been so good as to forward to me. I am sorry that his feelings were hurt by some of the remarks which I made in my recent lecture on "Current Errors in Teaching English Grammar." I attacked current errors, not individual crotchets. I do not know who "Grammaticus" is. Indeed, my strictures were made almost entirely on statements which, as he observes, "pass current from book to book," and which I have not had time or patience to trace to their fountain head. For the sake of precision, it was necessary to quote the forms in which the statements are presented, and so I took them now from one book in common use, now from another. Now, if people help to give currency to an absurdity or a blunder, they really must not be too thin-skinned if a critic, who gives

pretty cogent reasons for his remarks, calls a gross blunder by its right name. If he fails to make out his case, he will, of course, be duly chastised. If he succeeds, he is entitled to employ any "derangement of epithets" that the case warrants, so long as his "compliments" are addressed to statements and opinions, and not to persons. At all events, "Grammaticus" gives as good as he gets. It is Mr. Mason who "has blundered," who "has mistaken the true province of grammar, and the proper function of the grammarian, and has simply misconceived the whole matter." I have not the smallest objection to all this. "Grammaticus" is welcome to the most telling epithets and the most trenchant criticism at his command, so long as he does his best to show that they are merited. But I think it is in better taste to eschew allusions to "this gentleman," when a writer openly gives his name.

"Grammaticus" says that "he readily accepts my challenge to the 'tussle' to which I invited my audience." I must say that his acceptance covers an extremely limited range, one single point only being selected for attack. I will come to that directly. Meanwhile, I renew my challenge to him to justify the definition (which I have many times heard given by teachers) that "A Common Noun is anything that belongs to a class," and that an "Adjective expresses the quality of a Noun." Don't let him put us off with tall talk about "marks of sensations," and "marks upon marks," but take the above definitions in their literal sense, and show that they are correct to the full extent of the meaning of the words. Until he has done that, he has simply shirked the 'tussle.' Next let him take in hand the definition that "When the subject of the Verb is the doer of the action, the Verb is Active," and show either that the *grammatical subject* of a verb may be a *person*, or that a *word* may—we will say—administer a kick. That will do to start with. We will afterwards have a "tussle" about some other points, on which he is discreetly silent, and then we shall be in a better position for deciding how far he is justified in saying that "a misconception of a fundamental grammatical principle runs through the whole of my paper."

Now, to come to the point on which "Grammaticus" joins issue with me. I spoke in strong terms of the confusion between words and things involved in the definition that "Adjectives express the qualities of Nouns." I still maintain that if you call this rank nonsense, or "flat burglary," or anything else that is strongly "complimentary," you are quite justified. Even "Grammaticus" does not come forward as its champion. But I went on to say that "It is but a variation of the same confusion when we are told that an adjective is a word added to a noun in order to mark or distinguish it more accurately." I could quote from a writer who gives the definition in both forms. Elsewhere I read that in "black man," "black" marks the noun *man*, and helps me to know that *man* among other men; and that in "brave soldier," "the word *brave* marks out the *soldier* from other soldiers who are not brave, and is therefore a word that marks a noun." This shows that some writers at any rate regard the two forms of the definition as equivalent. "Grammaticus" (to do him justice) does not put the question quite in this shape. The case stands thus. I maintain that "An adjective denotes the quality that marks the thing." So far "Grammaticus" admits that I am right. He asserts, however, that the adjective does not only this, but something more; that it "gives a shade of meaning to the noun," or "imposes a new acceptance on the noun," that a noun when combined with an adjective "has a different meaning." This I very emphatically deny; and because "Grammaticus" thinks I am wrong in denying it, he says that I "mistake the true province of grammar and the proper function of the grammarian, and simply misconceive the whole matter," and "am led into the most absurd"—something or other. Truly the principle of evolution sometimes works at a tremendous pace.

Well, how does "Grammaticus" confute me? His attack consists mainly in an endeavor to knock me over with a quotation from Mill, "whose name carries an authority which even Mr. Mason will not dispute." This grand flourish led me to suppose that it was John Stuart Mill who was meant. After a little search, I found the passage quoted in the "Analysis" of the elder Mill, whose authority is not usually regarded as so overwhelming as that of the younger. For myself, I am rather sorry that it was not John Stuart Mill whose authority was invoked, as I should have been glad of the opportunity which an appeal to such authority would have given me of expressing and justifying my long-cherished conviction that he was an enormously over-

rated man,* and, so far from being the very embodiment of clear logic, was a confused and inaccurate thinker. I am disposed to pay much more deference to a statement coming from James Mill; but I take leave to say that the point in dispute between "Grammaticus" and myself is not to be settled by authority, but by clear thinking and lucid exposition.

Well, now for this wonderful quotation, which has been launched at me like a thunderbolt. The diverting part of the business is, that it turns out on examination that the view which Mill held on the subject of the functions of the adjective was precisely the same as what I hold myself. "Grammaticus" has misunderstood the passage in the most ludicrous manner. (He really must allow me that little "flower.") "If you tickle us, do we not laugh?" He has tumbled heels over head into the very pitfall in which that simple creature, Lonnie, engulfed himself, when he epitomised Lindley Murray, who, by the way, considering his lights, was not half such a fool as some people try to make out. Murray had said:—"An Article is a word prefixed to Substantives, to show how far their signification extends, as a garden, an eagle, the woman." His meaning was, that an article marks out the range of applicability of the substantive, which is quite true. Lennie thought that "signification" and "meaning" were identical in sense, and so he wrote that "An article is a word put before a noun, to show the extent of its meaning; as, a man," which is mere rubbish. The "signification" of a noun, in the passage quoted from Mill, means "what the noun denotes;" and if "Grammaticus" will take the trouble to read up the introductory part of J. S. Mill's Logic, he will find that there is a world of difference between the denotation of a term, and its connotation; between what it takes in in the way of things to which it may be applied, and what it includes in the way of thoughts; or (as Sir W. Hamilton would have put it) between its extension and its intension.

To show Mill's real meaning, I will somewhat enlarge the quotation. He says (speaking of classes, and their subdivisions):—"The subordinate class is distinguished from the rest of the greater class by some peculiarity, something in which the individuals of it agree with one another, and do not agree with the rest. Thus, to recur to the example of sound. One set of sounds affects me in a certain way, a way peculiar to that set. *Wishing to distinguish these sounds from others by a mark, I call them loud.* Another set of sounds affects me in another way, I call them *harsh*. A third set in another way, and I call them *sweet*. By means of these adjectives, applied as marks upon the mark of the great class, I have the names of four species, or sub-classes. (1) loud sounds, (2) low sounds, (3) harsh sounds, (4) sweet sounds."

It strikes me that this is amazingly like what I have said myself. Mill does not talk about the adjective being used to "distinguish the noun," but of its being used "to distinguish one sub-class from another." He does not call the adjective "a noun-marking word." A distinguishing mark can only mark a distinction that has been recognized, and there is no distinction in a noun-mark that can be thus marked by the adjective-mark. Mill's language is most cautiously framed to obviate this confusion. Instead of saying that the adjective "marks the noun," he speaks of it as "applied as a mark upon"—not "to"—the mark of the great class; the result of thus putting the one mark on the top of the other being that we get a compound mark, the function of each portion of which is to mark the objects comprised in the sub-class; the noun-mark marking them in virtue of their belonging to the "great-class," the adjective-mark in virtue of their belonging to the sub-class.

As an expository comment on the paragraph quoted from Mill by "Grammaticus," I will give an extract from Professor Bain's Shorter Grammar, which I do with the more pleasure because (as will have been seen from my lecture) there are statements in his books from which I vehemently dissent.† With reference to this

* I strongly recommend any reader who has been accustomed to hear J. S. Mill spoken of as a sort of philosophical demigod, to read the able papers on him, by Professor Stanley Jovons, which are being published in the *Contemporary Review*. For myself, I may say that I had not to wait for these papers in order to form my judgment respecting Mill. More than thirty years ago a critique of mine was published, in which I endeavored to show that the author of the biggest book on Logic in the English language totally misconceived the gist of syllogism.

† Always excepting, as a matter of course, those portions of my own English Grammar which he did me the honor to adopt. The appropriation was tolerably extensive, but at the same time it was handsomely acknowledged. I wish I could always say the same of others, who have often treated what has cost me months of patient thought as matter that may "pass current from book to book" without so much as a "by your leave" or a "thank you." I have often had a quiet chuckle over one plagiarist who betrayed himself by copying an absurd blunder which I once made, but corrected several editions ago. It still adorns his page.

very point he says:—"An Adjective is a word joined to a noun to increase its meaning, and limit its extent:—'as round towers,' 'tall men,' 'clear water.' 'Towers' is a significant or general noun, comprehending a class of things. The word 'round' selects from the class 'towers' such as are round; accordingly 'round towers' means all that 'towers' means, and 'round' besides. The class 'round towers' is at the same time a smaller class than the class 'towers.'"

Professor Bain would have done better here if he had said "to add to its meaning" instead of "to increase its meaning." The phrase, as it stands, is not accurate, though its intended sense is clearly explained in what comes after it. It is as though we should speak of a grocer putting a pound of sugar into a bag, and then throwing in an ounce more "to increase its weight." He increases the weight of the parcel, but not that of the pound that is already in it. He "adds to" the weight of that. Allowance being made for this little slip, it will be seen that Bain says exactly the same as Mill, and that "this gentleman" says exactly the same as Mill and Bain.

The truth of the matter is perfectly plain. A general name such as "rose," stands for that aggregate of resemblances by virtue of which one rose is like another. It is the handy mark of a cluster of concepts or predicates. To call a certain creature an "ape" is to adopt a compendious mode of applying to him an aggregate of predicables,—"animal," "vertebrate," "viviparous," "mammal," with any others that denote the attributes by which the class "ape" is constituted. The meaning of the word "ape" is just this aggregate. To call a certain creature a "brown ape," is to add one more predicate to the aggregate marked by "ape," so that we get a new aggregate, namely, "ape + brown," or (expanding the term "ape"), ["animal," "vertebrate," "viviparous," "mammal," &c.] + [brown]. But this addition does not make or mark the faintest shade of alteration in the previously existing aggregate. Nor does the added mark mark the previous aggregate, for it does not denote or stand for anything that belongs to, or characterizes that aggregate. This is why I reject the term "noun-marking word" as a definition of an adjective. A word cannot be a "mark" unless it represents something, and there is absolutely nothing in the noun for which it can stand as the symbol. An adjective is a "thing-marking" word, and (as Mill makes clear in his exhaustive analysis, which I have not space to quote) differs as such from a noun, or general name, simply in the fact that it marks (or stands as the symbol of) a single attribute, while a noun marks, or is the symbol of, a cluster or aggregate of attributes. Of course the adjective "red" "gives that shade of meaning" which makes the difference between "rose," the genus, and "red rose," the species. But the point which "Grammaticus" misses is, that it gives this "shade of meaning" not to the noun "rose" but to the compound name "redrose." If he wants to convince me or my readers that I am wrong, let him take such a compound name as "round towers," and point out one single conception involved in "towers" which is not involved in "round towers," or one single point of difference between "towers" and "round towers," which does not reside solely and absolutely in the word "round." The meaning of the last sentence of the last paragraph but one of his letter is to me absolutely inscrutable.

His last paragraph is a curiosity. He says (of the combination "three men")—"Three is not connected with the noun men in its general sense of all mankind, which would be a contradiction in terms, but with the noun in the new acceptation imposed upon it by the adjective." If his argument is to have any point, he must maintain that the word "men" by itself necessarily and always means "all mankind," for if, while still in single blessedness, it could take a narrower range, it is clear that it would save the adjective "three" the trouble of "imposing a new signification" upon it. Here, however, is the nice little puzzle to which "Grammaticus" brings us. The noun *man* (according to him) cannot get rid of its natural sense of "all mankind" so long as it stands by itself, that is, until it has been associated with "three," and the numeral "three" cannot be prefixed to "men" so long as the latter retains its general sense of "all men." Then how can this loving pair ever come together? The difficulty is on a par with the old question as to what would happen if an absolutely irresistible force encountered a perfectly immovable obstacle. But this general universal sense of "men" is a mere hallucination on the part of "Grammaticus." The potential applicability of a noun is not the same as its actual or general application.

I had asked: "In three men, how does three enumerate the noun

men when there is only one noun?" I am told that I miss the point, and that the adjective, as it were, creates a special class or subdivision of men, and "onumerates, or tells the number of the class it has itself created. In other words, it does precisely what Dr. Abbott says it does, and what Mr. Mason says it does not do." This is really too amusing. Will "Grammaticus" kindly rub his eyes, and look at the end of the second paragraph in the second column of p. 122 of the *Educational Times*? He will then see that he should have put Mr. Mason's name for Dr. Abbott's, and Dr. Abbott's for Mr. Mason's. Surely a class is not identical with the name that stands for it.

I am, yours obediently,
C. P. MASON

Christchurch Road, Streatham Hill, June, 1878.

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.

UNIVERSITY OF TORONTO.

JUNIOR MATRICULATION, 1878.

MATHEMATICS.

Pass.

1. If from the ends of a side of a triangle there be drawn two straight lines to a point within the triangle: these will be less than the other two sides of the triangle, but will contain a greater angle.

2. If the side of any triangle be produced, the exterior angle is equal to the two interior and opposite angles; and the three angles of every triangle are together equal to two right angles.

3. If a straight line be divided into two equal, and also into two unequal, parts; the squares on the two unequal parts are together double of the square on half the line, and of the square on the line between the points of section.

4. In a circle, the angle in a semicircle is a right angle; but the angle in a segment greater than a semicircle is less than a right angle; and the angle in a segment less than a semicircle is greater than a right angle.

5. Divide 63474915 by 399; and by short division find the quotient, as a whole number and recurring decimal, when 1769 is divided by 105.

6. Prove that $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$.

Find the value of

$$\frac{7\frac{1}{2}}{6\frac{1}{3}} + \frac{11\frac{1}{2} - 2\frac{2}{3}}{11\frac{1}{2} + 2\frac{2}{3}} \times 10\frac{1}{3} - 7\frac{1}{3}$$

and of $\left(\frac{3.5 - 1.88}{4.1 + 5.8} \text{ of } \frac{7.25 \text{ of } 1.2}{3.25} \right) + \frac{3.1 \text{ of } .101}{2.15}$

7. Find the greatest common measure of 3884, 8272, and 7567; and the least common multiple of 17, 12, 25, 33, 85, 136, and 187.

8. A person invests \$5,445 in stock paying 6 per cent. when at 90 $\frac{3}{4}$, and on the stock rising to 91, transfers to another stock paying 7 per cent. which is selling at 97 $\frac{1}{4}$; how much is his income increased?

9. Find the amount accumulated at the end of 3 years by a person who invests \$5000 now, and does the same at the beginning of each succeeding year, at 8 per cent. compound interest on the whole sum invested.

10. State when $x^n + a^n$ is divisible by $x + a$ and show that $(a + b)^7 - a^7 - b^7$ is divisible by $(a^3 + ab + b^3)^2$.

11. Describe the process of finding the G.C.M. of two algebraical expressions, and prove that the G.C.M. of two quantities is equal to their product divided by their L.C.M.

Reduce to their lowest terms

$$\frac{2x^2 - 11x^2 - 9}{4x^2 + 11x^2 + 81} \quad \frac{6x^2 - 27x^2 - 54x^2 - 16x + 96}{7x^2 + 16x^2 + 20x^2 - 12x^2 - 11x - 42}$$

12. What meaning can be attached to multiplication by a fractional quantity? Deduce this meaning from that of multiplication by an integer.

Simplify

$$\frac{1}{b+c-a} + \frac{1}{c+a-b} + \frac{1}{a+b-c} - \frac{1}{a+b+c} - \frac{1}{8abc}$$

$$\frac{(a+b+c)(b+c-a)(c+a-b)(a+b-c)}{8abc}$$

13. Define simultaneous equations of two or more variables.

Describe the several processes of solving a pair of simultaneous equations.

Ex. $ax + by = c, mx - ny = d$

$$a^2x + ay + z = a^2, b^2x + by + z = b^2, c^2x + cy + z = c^2.$$

14. How soon after eight o'clock are the hour and minute hands directly opposite to each other?

15. Give the complete solution of the quadratic equation $ax^2 + bx + c = 0$.

Solve the equations:

(1) $2^x + 1 + 4^x = 80.$ (2) $x^3 - ax^2 - 2x(1 + a^2) = 2a.$

5. 159085; 16.846190. 6. $3\frac{1}{10}$; $3\frac{2}{3}1\frac{2}{3}$. 7. 47; 112200.

8. \$32.00. 9. \$17530.46. 10. Hamblin Smith's Algebra, §84; $a+b$ is evidently a factor; taking this out, rest is evidently resolvable into $7ab(a^2+ab+b^2)^2$.

11. $\frac{2x^3 - 4x^2 + 2x - 3}{4x^3 + 3x^2 - 18x + 27}$; is in lowest terms.

12. 0. 14. $10\frac{1}{11}$ minutes. 15. (1). Put into form $2^{2x} + 2 \cdot 2^x + 1 = 81$; whence $x = 3$. (2.) $x+a$ is a factor, whence roots are $-a, a \pm \sqrt{a^2+2}$.

ALGEBRA.

HONORS.

1. If α, β are the roots of the equation $ax^2+bx+c=0$, find the values of the following expressions:

$$a + \beta, a\beta, \frac{1}{a} + \frac{1}{\beta}, \frac{1}{a} - \frac{1}{\beta}, \frac{a^2}{\beta} + \frac{\beta^2}{a}.$$

2. Prove that ax^2+bx+c and a never differ in sign except when the roots of $ax^2+bx+c=0$ are possible and different, and x is taken so as to lie between them.

If x be a positive integer then $(1-2x^2+x^{2+1}) \div (1-x)^2$ is a positive integer.

3. Show how to solve a pair of simultaneous equations involving quadratics.

Examples (i) $x^2 - 2y^2 = 71, x + y = 20.$

(ii) $x^2 - y^2 = 5, bxy + (a+c)y^2 = 2b.$

(iii) $m_1x + n_1y = m_1x^{-1} + n_1y^{-1} + m$

$m_2x + n_2y = m_2x^{-1} + n_2y^{-1} + n.$

4. A certain number of workmen can move a heap of stones in 8 hours from one place to another. If there had been 8 more workmen, and each workman had carried 5 lbs. less at a time, the whole work would have been completed in 7 hours. If, however, there had been 8 fewer workmen, and each had carried 11 lbs. more at a time, the work would have occupied 9 hours. Find the number of workmen, and the weight which each carried at a time.

5. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$ then each of these fractions is equal to

$$\frac{(pa^n + qc_n + re_n) \frac{1}{n}}{(pb^n + qd^n + rf^n)}$$

Solve the equations:

$$x+y+z=5, \frac{x+ay}{y+bx} = \frac{y+az}{z+bx} = \frac{z+ax}{x+by}.$$

6. If x varies as y when z is constant, and as z when y is constant, then x varies as yz when both are variable.

There are four cannon balls of diameters 3, 4, 5 and 6 inches respectively; show that the weight of the largest is equal to the combined weight of all the others.

7. Show how to express any integral number in any proposed scale.

Prove that in the common scale the remainder after division of any number by 11, will be the same as the remainder after dividing the difference between the sum of the digits in the odd places and the sum of the digits in the even places by 11.

8. Insert three arithmetical, three geometrical, and three harmonical means between a and b .

Sum the series $x + 2x^2 + 7x^3 + 20x^4 + 61x^5 + \dots$ ad inf. x being less than unity.

9. Find the number of permutations, also the number of combinations, of n things taken r at a time.

Find the number of ways in which 100 different things can be equally divided among 25 persons.

10. Find the expansion of $(x + a)^n$, when n is a positive integer, and find the greatest term in this expansion.

The coefficient of x^r in $(1 + x)(1 + cx)(1 + c^2x) \dots$ the number of factors being infinite, and c less than unity, is

$$\frac{(1-c)(1-c^2)(1-c^3)\dots(1-c^r)}{c^{r(r-1)}}$$

11. Eliminate l, m, n from the equations

$$al = bm = cn, l^2 + m^2 + n^2 = 1. \\ a^2l^3 + b^2m^3 + c^2n^3 = a'^2l + b'^2m + c'^2n.$$

12. If $\frac{n-1}{2}(a^2 + b^2 + c^2 + \dots + n \text{ terms}) = ab + ac + bc + \dots$ then a, b, c, \dots are all equal to one another.

$$1. \frac{b}{a}, \frac{c}{a}, -\frac{b}{c}, \pm \frac{\sqrt{b^2 - 4ac}}{c}, -\frac{b}{c}, \frac{b^2 - 8ac}{a^2}.$$

2. Todhunter's larger algebra, chapter on Theory of Quadratic Equations. Putting the expression into the form $\frac{1+x^2(x-2)}{(1-x)^2}$, we see that it is positive if x be greater than unity. Also putting it into form $\frac{1-x^{n-1}}{1-2x+x^2} + x^{n-1}$, and dividing $1-x^{n-1}$ by $1-2x+x^2$ we get remainder $\frac{(x-1)x^{n-2} - (x-1)x^{n-1}}{1-2x+x^2} = -x^{n-2}$; whence result of division is an integer.

3. (1). 13, 7 or 67, -47. (2). Obtain x in terms of y from the second, and substitute in the first. (3). $x = \frac{mn_2 - nn_1 \pm \sqrt{(mn_2 - nn_1)^2 + 4(m_1n_2 - m_2n_1)^2}}{2(m_1n_2 - m_2n_1)}$

4. $x =$ no. of workmen, $y =$ wt. each carries at a time $z =$ no. of trips each makes per hour. Then $8xyz =$ wt. of heap $= 7(x+8)(y-5)^2 = 9(x-8)(y-11)z$; whence $x = 36$ or 28 ; $y = 77$ or 45 .

5. (1.) Let $\frac{a}{b} = \&c. = x$; then $a = bx, c = dx, e = fx$; substituting, expression reduces to x . (2.) Adding numrs. and denrs. of fractions, each becomes $= \frac{1+a}{1+b}$, and equations may be obtained involving first powers of x, y, z .

6. Wt. \propto vol. \propto (dr.) $^3 = k(\text{dr.})^3$; and $k6^3 = k5^3 + k4^3 + k3^3$.

7. If the number be $p_0 10^n + \&c.$, the remainder on dividing by $10 + 1$ will be obtained from $\frac{p_0(-1)^n + \&c.}{10 + 1}$.

8. Let $S = x + 2x^2 + \&c.$; then $3Sx = 3x^2 + \&c.$; $\therefore S(1 - 3x) = x - x^2 + x^3 - \&c. = \frac{x}{1+x}$; $S = \frac{x}{(1+x)(1-3x)}$.

9. First person may obtain his in $\frac{100 \times 90 \times 98 \times 97}{4}$ ways,

leaving 96 from which the second may select his, and any combination the first has may happen along with any combination the second has. Proceeding in this way the number required will be

$$\frac{100}{\left(\frac{4}{1}\right)^{25}}$$

10. The coefficient of x^r will be the sum of the combinations of $1, c, c^2, c^3, \&c., r$ at a time; and this sum will be obtained by multiplying the series $1 + c + c^2 + c^3 + \&c., c + c^2 + c^3 + \&c., c^2 + c^3 + c^4 + \&c., \dots, c^{r-1} + c^{r-2} + c^{r-3} + \&c.$ For multiplying the first series by c is equivalent to placing 1 before all the terms which succeed it in the first series; multiplying the first series by c^2 is equivalent to placing c before all the terms which succeed it in the first series; and so on, and the product of the first two series gives the sum of the combinations two at a time. Suppose these combinations formed, multiplying them by c^3 is equivalent to removing 1 from the first series, combining the succeeding terms two at a time, and placing 1 with each of them; multiplying by c^4 is

equivalent to removing c from the first series, and proceeding in a similar manner. And so on till the whole no. of combinations is formed. Also these series are $\frac{1}{1-c}, \frac{c}{1-c^2}, \frac{c^2}{1-c^3}, \dots, \frac{c^{r-1}}{1-c^r}$, and their product gives the answer.

11. Let $l = \frac{k}{a}, m = \frac{k}{b}, n = \frac{l^2k}{c}$ in first two equations; then substituting in second two for l, m, n , and eliminating k , we obtain $\frac{1}{a} + \frac{1}{b} + \frac{1}{c} = \left(\frac{a^2}{a} + \frac{b^2}{b} + \frac{c^2}{c}\right) \left(\frac{1}{a^2} + \frac{1}{b^2} + \frac{1}{c^2}\right)$.

12. $\frac{1}{2}(a^2 + b^2) > ab$, unless $a = b$; $\frac{1}{2}(a^2 + c^2) > ac$ unless $a = c$; and so, until we obtain on the right of these inequalities all the terms on the right of the equation. Then $\frac{n-1}{2}(a^2 + b^2 + \&c.) > ab + ac + \&c.$, unless a, b, c, \dots are all equal.

TRIGONOMETRY.

HONORS.

1. If θ be the circular measure of an angle between 0° and 90° , show that $\sin \theta > \theta - \frac{1}{6}\theta^3$.

Show approximately what the dip of the horizon is for every mile of distance.

2. Show that $\sin 18^\circ = \frac{1}{2}(\sqrt{5} - 1)$, and hence show how to find the sines and cosines of all angles being multiples of 9° from 0° to 90° .

3. If A and B are any angles, prove

$$(1) \tan(A + B) = \frac{\tan A + \tan B}{1 + \tan A \tan B}$$

$$(2) \sec A + \tan A = \tan(45^\circ + \frac{1}{2}A),$$

$$(3) \tan \frac{A}{2} = \frac{\text{vers } A}{\sin A}.$$

If $x = \cos A \cot A, y = \sin A \tan A$, eliminate A .

4. In every triangle prove the truth of the following formulas:

$$(1) \text{Area} = \frac{1}{2}ab \sin C = \sqrt{s(s-a)(s-b)(s-c)}$$

$$(2) c = a \cos B + b \cos A.$$

$$(3) \sin \frac{A}{2} = \frac{\sqrt{(s-b)(s-c)}}{bc}$$

$$(4) \frac{\tan B}{\tan C} = \frac{a^2 + b^2 - c^2}{a^2 + c^2 - b^2}$$

5. Define the terms *logarithm, characteristic* and *mantissa*.

How are the logarithms of numbers less than unity to be found from the tables, and how are they represented?

Given $\log 4.9358 = .693116$, find the logs of 49358 and of $(.049358)^{\frac{1}{3}}$.

6. Having ascertained the logarithm of four digits of a number from the tables, show how to proceed to find the logarithm of the whole number.

Given $\log 2 = .30103, \log 3 = .477121, \log 7 = .845098$, find the logarithms of $28^{\frac{1}{2}}, 68^{\frac{1}{3}}, 98^{\frac{1}{4}},$ and $126^{\frac{1}{5}}$.

7. If a, b, c , are the lengths of three straight lines drawn from a point making equal angles with one another, and straight lines be drawn respectively joining the extremities of a, b, c , the area of the whole triangle thus formed will be $\frac{\sqrt{3}}{4}(bc + ca + ab)$.

8. Show how to solve a triangle when two sides and the included angle are given.

$$\text{Ex. } a = 765.482, b = 1006.62, C = 70^\circ.$$

9. Find the radius of the circumscribed circle of a triangle in terms of its sides and angles.

If the centres of the described circles of a triangle be joined forming another triangle, show that the circle circumscribing this latter triangle is four times the size of the circle circumscribing the first triangle.

10. A person at the top of a lighthouse describes a vessel just on the horizon; show that he can ascertain the distance of the vessel approximately by taking the square root of one and a half times the height of the lighthouse in feet and calling the result in miles.

Number.	Log.	Angle.	Log.
1772052	2484765	sin 70°	9.9729858
241188	3823555	sin 66°	9.9607302
100662	0028656	tan 35°	9.8452268
103543	0151212	tan 11'	9.2886522
		tan 22°	9.6064096

1. By "dip of the horizon" appears here to be meant the distance by which the surface of the earth falls away from the tangent plane at a point. If θ be the angle an arc one mile in length subtends at earth's centre, dip = $r(1 - \cos \theta) = 2r \sin^2 \frac{1}{2} \theta = 2r$

(θ)², approx. = $2 \times 4000 \left(\frac{1}{8000} \right)^2 = \frac{1}{8000}$ of a mile.

3. (4). $x^2 y^2 (x + y)^2 = (1 + 2xy)(1 - xy)^2$.
4. $\frac{a^2 + b^2 - c^2}{a^2 + c^2 - b^2} = \frac{2ab \cos C}{2ac \cos B} = \frac{\sin B \cos C}{\sin C \cos B} = \frac{\tan B}{\tan C}$
5. 1.6933116, 1.5644872.
6. .723579, .5997801, .4978065, .4200741.
7. Area = $\frac{1}{2}$ at $\sin 120^\circ + \&c. = \text{ans.}$
8. $44^\circ, 66^\circ, 1035.43.$

9. If $A'B'C'$ be the larger triangle, $B'C' = b \frac{\cos \frac{1}{2} C}{\cos \frac{1}{2} B} + c \frac{\cos \frac{1}{2} B}{\cos \frac{1}{2} C}$; and thence radius of circle about this triangle is $\frac{a + b + c}{4 \cos \frac{1}{2} A \cos \frac{1}{2} B \cos \frac{1}{2} C}$, which is double a common expression for radius of circle about first triangle.

10. If d be the distance of the ship, D the diameter of the earth, h the height of the object, all expressed in miles, it may be shewn that $d^2 = Dh$ approximately; or, if h be expressed in feet $d^2 = D \frac{h}{5280} = \frac{1}{D7920} h = \frac{1}{2} h$ nearly.

Mr. N. Sharpe, Trenton, sends the following solutions of problems in August number:

1. The square of half my age is my age inverted.

His age must be less than 20 or the square of one half of it would exceed 100, which would be impossible under conditions given, wherefore unity must be the left hand digit. Let $x =$ right hand digit. Then $10 + x =$ his age; $\therefore \left(\frac{10 + x}{2} \right)^2 = 10x + 1$; $x = 8$ and age is 18.

2. Let A, B, C be the triangle, A being the right angle, and AD being perpendicular to BC . On BC describe the square $BFGC$. Join BG . Produce AD to meet FG in E and BC in K . Through K draw IKL parallel to BC . Then $BKKG$ are the squares on BD, DC ; and FK, KC are equal and are together double the rectangle BD, DC . Also $BC^2 = BA^2 + AC^2 = BD^2 + DC^2 + 2AD \cdot BC$. From figure, $BC^2 = BD^2 + DC^2 + 2BD, DC$; $\therefore BD + DC + 2AD \cdot BC = BD^2 + DC^2 + 2BD, DC$; $\therefore AD^2 = BD, DC$. The proposer also sent solutions of the above.

ONTARIO TEACHERS' ASSOCIATION.

The eighteenth annual convention of the "Ontario Association for the Advancement of Education" was held in the Public Hall of the Normal School, August 13th, 14th and 15th.

Part of the following report is condensed from the reports of the *Globe* and *Mail*.

James A. McLellan, M.A., LL.D., delivered the opening address on

RECENT EDUCATIONAL CHANGES AND THE PRINCIPLES THEY INVOLVE.

Important educational reforms have been introduced during the last seven years, and I have thought that some observations on these and the principles they involve would not be out of place on the present occasion. I shall consider, first, the changes directly

affecting the Public Schools; and secondly, those more immediately affecting the High Schools.

I.

It is not necessary to enter upon an elaborate statement and vindication of the principles which underlie our entire educational system. I may remark, however, that it aims at being thoroughly national in character. It assumes that the intellectual life of a nation does not depend on the education and culture of a single class, but upon the enlightenment of the masses, and that no individual, and no associations of individuals, should be entrusted with the sacred work of popular education.

The eminent man whose life and energies have been devoted to the foundation and development of the system, has ever been guided by the broad principle—now accepted by the liberal thinkers and far-seeing statesmen of every land—that *Schools and Colleges are Institutions of the State*. This principle, which declares it to be the duty of the State to educate its citizens, is the outgrowth of a clear perception of the relationship between the individual and the State.

This relationship, as exemplified in every truly national system of education, is not one of police, but one of guardianship. The State provides for the education of the citizen, not as a matter of charity, but as a matter of justice; and the citizen not only has a right to demand, but is under obligation to receive, the education which it is the duty of the State to provide. Only when this principle of reciprocal rights and obligations is practically acknowledged can there be a thoroughly national system of education, and only under such a system can the highest results be reached in the material and intellectual advancement of the nation. Such a system is ours. It presents a properly organized scheme of national education from the most elementary to the highest stages. It has made the highest accessible to all, and it aims at making the lowest imperative on all. Such an organization can be effected, and worked with the highest attainable success, only under a proper system of municipal government. It is not possible for the central authority to do all that effective administration requires; it would not be wise even if it were possible. There are some matters that must be left entirely under the control of the central authority; there are others that should be left to the local authority. In our system the central authority has wisely invested the local authorities with the highest powers consistent with the necessary unity of aim and method, and has used every available means to encourage liberality in local legislation. Now, I suppose it is peculiarly the function of the central authority (1) to provide the requisite supply of properly qualified teachers, (2) to prescribe the courses of study to be pursued in the national institutions, and (3) to provide for the proper supervision of these institutions. In these three particulars have occurred the most important of the recent reforms to which I propose to direct your attention.

(1.)—AS TO THE FIRST POINT. (a) *There has been instituted an effective plan of examinations to test the literary attainments of all candidates for the teacher's profession.*

Since the teacher makes the school, one of the highest aims, if not the very highest, in every system of national education, is to secure good teachers—teachers who have the requisite scholarship, as well as culture and professional skill. And, beyond question, the proper test of the necessary scholarship is to be found in an examination conducted by the central authority, on subjects prescribed by the same authority. In other words, there should be a uniform system of examinations. Local authorities, such as Township or County Boards, or Boards of School Trustees, ought not to be entrusted with the important work of determining the qualifications of teachers. In some of the States of the American Union the want of a uniform State system of examination proves a serious injury to the cause of education. Examinations, we are informed, may be conducted by the State Superintendents, by city superintendents, by Boards of trustees, or by county commissioners of schools. Under such an absence of system the standards of attainment and the methods of examining "are almost as varied as the individuals conducting the examinations." And when, as not unfrequently happens, the examiners are not only deficient in scholarship, but profoundly ignorant of all that relates to the principles and practice of education, the results afford no evidence of the candidate's scholarship or professional ability. "Perhaps some peculiar vagary or conceit of the examiner, who may be a physician, or merchant, or farmer, or mechanic, or lawyer, is made

to serve as a procrustean standard by which the merits and defects of all that present themselves are judged."

Some such method as this prevailed in Ontario when the examinations were in the hands of the County Boards. The subjects for examination were, indeed, prescribed by the Department of Education; but the mode of conducting the examination, and the standard of qualification as fixed by the examination papers, were determined by the separate Boards. There were forty of these examining Boards; and there were, it is no exaggeration to say, just forty different standards. The possession of a County Board Certificate was therefore no sure evidence of scholastic proficiency, or of professional skill. The results were pre-eminently injurious to the interests of education. There was not sufficient discrimination between the worthy and the unworthy—between the devoted teacher and the hireling. The able and conscientious man who devoted himself to thorough preparation for his life-work, was rudely jostled by the illiterate self-seeker, whose exigencies had driven him to teaching as a temporary make-shift. Hundreds who had neither the proper qualifications nor any intention of acquiring them, rushed into the teaching profession. The open door was an irresistible temptation to those who wished merely to make teaching a stepping-stone to "something higher," or rather to something that paid better.

It was high time, then, that a change should be made, and accordingly the amended law of 1871 inaugurated the much-needed reform. Through the operation of that Act, the standard of literary qualification has been greatly raised, and the examination itself made a real test of proficiency in the subjects prescribed. This is one of the most important steps that have yet been taken in the interests of the public schools. Speaking generally, it may be said that the Third-class Certificate of to-day is a more certain evidence of scholarship than the First-class County Certificate of former days. Many persons have been obliged to abandon a profession for which they were quite unqualified; while many more, equally unqualified, have been excluded from its ranks. Thus the schools of the country are now in better hands than formerly; our teachers are better scholars, better managers, better instructors, better educators—possessed of clearer and nobler views of the nature of education, and inspired with a loftier enthusiasm for the great work in which they are engaged.

There can be no doubt, too, that the reform under consideration will go a long way towards elevating the teacher's calling to the dignity of a real profession. The dunce and the laggard will hardly attempt our strict examinations. The man possessed of a mere smattering of learning, sufficient perhaps for entrance into some of the "learned" professions, but utterly beneath the requirements of a good public school, will be forced to resort to other fields and "pastures new" for the means to win the object of his ambition: he will not be allowed to try his prentice hand upon our children, inflicting, perchance, a remediless wrong on the immortal natures committed to his care.

It was thought by some that the somewhat sudden increase in the difficulty of the examination might work injustice to meritorious teachers, and that the standard fixed, especially for Third-class Certificates, was much higher than was actually required in view of the work to be done. But the regulations, while observing the spirit of the law, have not been harshly or indiscriminately enforced. Special cases have received full consideration, and the deserving teacher, who really desired to remain in the profession and to qualify himself for its work, has met with every encouragement. In short, the late Chief Superintendent and the present Minister of Education have carried out this great reform with so much foresight and kind consideration of existing difficulties, that not a single case can be cited in which any injustice has been done.

I cannot admit that the standard of qualification for Third class Certificates is unnecessarily high. Surely it will not be argued that a teacher's knowledge may be limited to what he has to teach—that the minimum of knowledge prescribed for the pupil may be wisely fixed as the maximum for the teacher. This would imply a very narrow view of even primary education. Is the instruction given in the public schools to have any educative value, or is it to be merely mechanical? Mark the position taken:—The child is to be taught the elements of reading, writing and arithmetic; the teacher can read, write and cipher, therefore he is qualified as an educator. A narrower view than this of a great subject it would be impossible to take.

These elements are, of course, to be taught; and, taught by the accomplished teacher, they may, even in themselves, have some ed-

ucative value; though with such a teacher they are chiefly means to an end. But the illiterate teacher does not regard these elements as means to an end; in his view they constitute themselves the end—the "be-all and the end-all" of his irksome task. They are taught mechanically, their acquisition is mechanical; and as for true education, there is absolutely none. The teacher is himself without interest in the subject which he feebly comprehends; his own powers having not been awakened to vigorous action, he possesses but little of the life-awakening force, and none of that lofty enthusiasm which comes from a broad view of education, and a deep sense of the responsibility that rests upon the educator. If there is to be, in our public schools, any education at all worthy of the name, the teacher must be a man of "considerable education and culture, possessed of a clear insight into human nature, and well acquainted with the best methods of training." It is, therefore, no argument to say that because, in the primary schools, the quantity of knowledge to be imparted is small, the most meagre attainments on the part of the teacher will suffice. On the contrary, just because the quantity of knowledge is small, the quality of the instruction should be of the highest order. "It is not the amount of information, but the method in which it is given, that is of value here; not the imparted facts, but the quickened intelligence; not the truths and principles mechanically conveyed, but the living abiding impressions produced on the soul. The child is to be trained towards the perfection of manhood; his nature brought into the fullest activity on all sides, and his powers developed in an equable and harmonious completeness so far as time and circumstances permit." This view of education is not an ideal one which we may fondly imagine, but never hope to realize. It is easily within the reach of the earnest, cultivated teacher; it is far beyond the vision of the crude empiric whose fitness for the teacher's high vocation is measured by an imperfect knowledge of the mechanical *trivium*—reading, writing, ciphering. The child, then, is to be EDUCATED, and only the educated man or woman can do the noble work. The country has awakened to this true view of the aim and object of education, and has proposed a comparatively high standard for the intending educator. The standard may be thought high as compared with that of former times; but not too high to ensure efficiency on the part of those whose inefficiency might work an irreparable wrong; not too high, when the country has placed its easy attainment within the reach of average industry and ability. If any one has not average industry and ability, he has no business in the ranks of the highest of all professions; giving place to better men, let him dig, if "to beg he is ashamed," or study law, or plough, or swing the woodman's axe, or try his hand at any honest calling, in which if he prove not an expert, at least his blunderings will not be disastrous to the highest interests of the State. They seem to me entirely wrong, then, who take the ground that, while first and second-class teachers ought to possess comparatively high scholarship, from third-class teachers ought to be exacted only the bare elements of knowledge. For, though a better state of things will doubtless soon arrive, as yet a majority of the teachers are of this class, and therefore the work of education is still too largely in unskilled hands. No one can desire that this serious deficiency in our educating power should become permanent. It is plainly the ultimate object of the law to have the schools in charge of only well-qualified instructors. Those holding the lowest grade of certificate must rise to a higher plane; the worthy among them, whom I believe to be the vast majority, will strive to reach that higher plane,—the unworthy must give place to more earnest or more able men.

And is there any injustice in requiring the teacher to more thoroughly qualify himself for his work—to manifest in himself a little of that intellectual life which he is to communicate to others? With the extraordinary facilities for receiving both literary and professional training which a liberal country has supplied—with all the incentives to progress which surround him on every hand—what plea can be offered for the laggard who refuses to bestir himself? "Labor is life; who works not lives not," is a changeless law from which neither mind nor body can escape.

The teacher who makes no progress, who is animated by no earnest search for truth, can have no vigorous intellectual life. Having nothing in himself of that quickening force, whence can he have his vivifying power? Having no self-activity in his own spirit, how can he create it in the spirit of another? The teacher exerts a mightier influence by what he is and by what he does than by the words he utters or the information he imparts.

"It is the unconscious life in a man that most influences us."

It is the unconscious *life* of the teacher that produces the most lasting impressions. "He communicates to his pupils a large amount of himself—of his own spirit, of his own character, of his own life." Dead himself, he communicates death. He drags his pupils through a dull and dreary routine, "drugging their minds with unprofitable facts—making them read and commit to memory without once introducing them into living contact with the thoughts,"—without once touching the moral nature, or arousing the intellect to activity. I am sure, no true teacher will take the low ground that "anything will do for the ordinary public school," and that, especially, the attainments represented by a third-class certificate are sufficient for his work. And I venture to express the opinion, that no true friend of education will be found advocating principles or supporting a policy whose permanent triumph would smite the country with a lasting curse.

(b) Scholarship alone is not sufficient to make a true teacher. A man may know much of mathematics, science, literature—this is indispensable. But to be a successful teacher, there is a co-ordinate qualification—he must know how to organize, how to govern, how to teach, in short, how to *educate*, and therefore a *second great reform is that which makes further provision for the professional training of teachers*. When we speak of professional training, we imply that there is a Science of Education. That there is such a science has been maintained by some, denied by others. Mr. Lowe, for instance, ridiculed the proposal to establish a "Chair of Education" in the University of Edinburgh, because, as he asserted, there is no science of education. But it appears to me that the proposition requires little more than to be fairly stated in order to command assent. Are the conscious efforts of the teacher to develop the mental activities of his pupils mere crude experiments, knowing no law, or order, or definite aim? Education is, or ought to be, no more a series of hap-hazard experiments than, for instance, medicine. Instruction, I suppose, is an art; but as an art it is the application of systematic principles derived from investigations of the laws of mental action. Education and medicine are both practised as arts; but they are equally the practical application of general principles—the one being, we may say, an applied physiology, the other an applied psychology. Without, however, entering upon a full discussion of the question, it is enough to say that there are certain laws regulating the activities of the human mind—that some of the most important of these laws have been discovered and applied in education—and that a knowledge of them reveals right methods of instruction, and guides the teacher in the work of true education. It follows that all teachers should be thoroughly familiar with the principles of education, and as far as possible skilled in their application. For, as we have quacks in medicine, so we have empirics in education; and if the community is to be protected against the former, how much more against the latter? If we have a salutary dread of those who may kill, or maim, or enfeeble the body, with what feelings should we regard those who have a similar treatment for the soul?

The absolute importance of professional training for teachers has been all but universally acknowledged. The ablest statesmen in every civilized country which has undertaken the education of the masses at the public expense, have used all efforts to establish institutions to supply such training. In 1875 there were in Great Britain 38 Normal Schools, in France 86, and in Germany 174. Our first Normal School was established in 1847, and unquestionably has exercised a powerful influence on the education of the country. But during the earlier years of its existence its chief work was—not to give its students that professional training which it is the principal function of a Normal School to impart, but to prepare them for passing the prescribed literary examination. This was unavoidable, inasmuch as there were but few schools in the Province that were at once easily accessible, and able to give the requisite literary training. But the High Schools have, in recent years, so greatly improved that they now can give the highest literary training that the teacher may require. Accordingly a change became practicable, and was promptly made. Second-class teachers, whose training had occupied nearly all the teaching power of the Normal Schools, must now acquire the requisite scholarship and pass the prescribed scholastic examination before entering these institutions, which are thus placed in a position to discharge with efficiency their principal function, in imparting a sound knowledge of the principles of education, and a large measure of practical skill in their application.

But something further was required. It was found that about nine-tenths of the teachers of the country had received no syste-

matic training in the art of teaching. The great value of professional training had been clearly shown in the generally superior teaching and management of those who had graduated at the Normal Schools, and from all parts of the country came a demand for trained teachers. The existing Normal Schools could not meet the demand; the requisite number of additional Normal Schools could not be established without an enormous expenditure, which our people, with all their liberality in matters of education, would have been, perhaps, unwilling to sanction. It became necessary, therefore, to devise a more simple and less expensive scheme to enable teachers to acquire a certain amount of professional knowledge and intelligent experience. The system of County Model Schools was accordingly established, and it at once met with a large measure of popular favor. These schools are, in effect, inexpensive County Normal Schools—certainly not capable of doing all that we have a right to expect of a fully equipped training college—yet able to do, and, I hesitate not to say, actually doing a work which will tell with powerful influence on the public schools. I do not say that they are yet all that they ought to be; I do not say that the Normal Schools are doing all they ought to do; there is, without doubt, room for improvement in both these classes of schools. But I say that both are doing a great and noble work, and that the moral and intellectual influence of the trained teachers they send forth will tell with incalculable effect on the rising generation.

The time at my disposal prevents more than a brief reference to the subject of Teachers' Institutes. They are, when properly conducted, a most valuable auxiliary to normal and model school training. They are, on the whole, well conducted in Ontario, as I have had ample opportunity of witnessing. Their success depends largely on the Public School Inspectors. And I have pleasure in publicly stating my belief that the ability, energy and earnestness—not to say enthusiasm—which characterize the great majority of our inspectors, are nowhere more clearly seen than in the successful working of these valuable agencies in our educational work.

(2) IN THE SECOND PLACE, in order that the objects of national education may be as fully as possible attained, a *judicious course of study is of paramount importance*. What the extent of such a course should be, and what subjects it should embrace, are questions that have been widely discussed and variously answered according to the views held of the aim and scope of popular education. If its object is to put the pupil in mechanical possession of the barest elements that may assist him in making a livelihood, the course will be a narrow one, consisting of but three subjects, reading, writing, and the elements of arithmetic—since, on the utilitarian theory, these are the "knowledges" that are of most worth, and the only ones that the common citizen requires. But, as has been already said, the aim of Primary education is not confined to this; the child is to be *educated*; he is to be treated as an intelligent being, whose wonderful activities, so far as certain limitations of time and circumstances allow, are to be aroused and strengthened. No doubt, *useful* knowledge is to be imparted, but in such a way as to influence life and character. From a low view of the aim of education, the child's whole nature may be grievously wronged by the meagre programme and the blundering teacher. On the other hand, subject to truly educating influences in the impartation of even elementary knowledge, his plastic mind may receive impressions which shall outlive the rough battle of his humble life, reacting on the family and all the social forces.

Assuming, then, that the higher view of popular education is the correct one, two things are to be kept in view in the arrangement of a judicious course of study—the value of the subjects in *discipline* and their value as *knowledge*, or, in other words, practical utility. Doubtless there are subjects which are *practically* of little worth, though they may have a high value as instruments of discipline. But, for the purposes of Primary education, those should be selected which at once are valuable in discipline and practically useful. This has been done in arranging the course for the Ontario schools. Language, Elementary Mathematics, History and Geography, Elementary Science, Writing, Drawing and Music. All these are of high value, whether regarded as means of culture or sources of useful information. It will be admitted, also, that in the order of arrangement; in the number of subjects prescribed for simultaneous instruction, in their subdivisions into grades—in a degree of flexibility which leaves a reasonable latitude to both teacher and pupil—in all these essentials the new programme, while not above criticism, is a great improvement on the old. But can these subjects, or the most of them, be taught in the

efficient public school? Do they fairly indicate what such a school may be expected to accomplish? I answer in the affirmative. The child enters school at six years of age, we will say, and remains till he is fourteen—what teacher will maintain that all these intervening years are to be spent in learning to “read, write, and cipher?” This indeed has been, and is still, too often done—because the teaching has been too often done in dense ignorance of the plainest laws of mind. The most precious years of the child’s life are wasted—or worse than wasted—in a drudgery of barbarous routine—a torturing treadmill with the ceaseless alternations—reading, writing, ciphering; reading, ciphering, writing; ciphering, writing, reading; and so on through all the dreary years.

But more excellent methods are beginning to be found, and will soon generally prevail. No intelligent teacher will argue that *one-third* of the child’s school life must be given to learning the elements of Arithmetic, and as much more to the mastery of the few English words he is concerned to know. Let rational methods of teaching be followed, and our children will become better arithmeticians and better readers, in half the time that these branches have usually consumed; and the other half thus wisely and economically—not to say *humanely*—saved, may be devoted to other and equally important subjects of the course.

But admitting that the course of study is quite within our reach, is it necessary—is it expedient—to give the children of the masses so liberal an education? To this question, if the views of popular education already set forth are sound, there can be but one answer. Once more, it is the great aim of the Public School to place within the reach of all a course of education sufficiently extensive and thorough for all the ordinary pursuits of life, and to create a national intelligence which shall be effective in national progress. That national intelligence is an essential element in national advancement, is a proposition that will hardly be questioned even by those who are constantly magnifying a purely practical or industrial education at the expense of intellectual education. The attitude of man in nature is one of perpetual struggle with the forces of nature, and human progress is mainly the triumph of intelligence over matter and material phenomena. Man interrogates nature; he passes in review her grand domain; he demands the surrender of her secrets and her treasures; and nature, recognizing the voice of her appointed Master, and answering, obedient to the imperial summons, enlarges his understanding by a revelation of her mysteries and pours her richest treasures at his feet.

All that has been discovered in the region of science, all that has been invented in the industrial arts, has been discovered and invented by the exercise of mind. Can it then be fairly maintained that intellectual education is of little worth in material progress? Shall the inventive mind lose its ingenuity, and the skilled hand its cunning, when guided by intelligence? Nay, the increase of popular intelligence ensures material progress and national power—the wider diffusion of liberal education, means more splendid achievements in all the industrial arts and in all the realms of thought. The very spirit of national education is that it places within the reach of every man the means for the harmonious development of the powers with which he has been endowed. All talent, all genius, is useful to the community at large; and the liberal course of study adopted for the schools will bring to light hands that may sway “the rod of empire, or wake to ecstasy the living lyre.”

3. IN THE THIRD PLACE. *A completely effective system for the supervision of the Public Schools has been established.*

In every complete organization of public instruction, a system of thorough supervision is essential. Good teachers are indispensable; good inspectors are equally so. They must be men of education and of large experience. It is not their chief duty to regard teachers as suspicious characters, who need the attention of a severe police; but to see that the regulations for the management of the schools are properly carried out, and that rational methods of instruction are followed. The qualified inspector is in thorough sympathy with the earnest teacher—gently pointing out his errors, assisting him in difficulties, praising with pleasure, and censuring with regret.

One of the greatest defects—if not the greatest—in our educational system was the want of proper school supervision, and, therefore, the institution of the present system constitutes one of the most important of our educational improvements. Instead of a perfunctory discharge of duties for which, under the old plan, the superintendent had but little fitness and but little sympathy, the proper fulfilment of the duties of an inspector now requires

high literary attainments, a long professional experience and an entire consecration of time and energy to the work. By the new system the schools in each inspectorate are placed under the supervision and, to some extent, control of an officer whose duty and ambition it is to see that all parts of the system, of which he is the head, are harmoniously and effectively worked. The standard of education is thus raised; for in every school are introduced method and discipline; the weak points are noticed and gently corrected; irregularities checked, vicious modes of teaching banished from the school-room; order and control introduced. The teacher feels that his work comes before one on whose judgment he can rely. Knowing that the results of indifference, laziness, or slovenly teaching, cannot escape the searching eye of his inspecting officer, even the careless teacher is quickened into some semblance of life. On the other hand, the really able and earnest teacher, feeling that energy, industry and earnestness are sure to be acknowledged, is encouraged to qualify himself yet more fully for his vocation.

Trustees are more confident in the discharge of their duties when they know that within easy reach they can secure the advice of a competent officer, and when they can ascertain on the occasion of his visits the quality of the work done in their schools—its faults and its excellencies. The people have a guarantee that under the control of an officer of experience and wisdom, their school system, for which they pay so much, and on which so much depends, will attain to a high degree of excellence, and that too without the sacrifice on their part of any necessary rights or powers. And lastly, the Government can expend its vast sums for the education of the rising generation with confidence and security, and at the same time with justice, only when it possesses such data and information as systematic inspection can supply. These benefits were, to some extent, secured by the old system of township inspection, and perhaps no other mode was practicable at the time of its inception. But we have at last been able to establish a more thorough system, and I believe that, with some slight amendments, it will secure all the advantages which flow from a complete supervision of the schools.

II.

The establishment of Primary Schools would be comparatively unavailing without proper provision for secondary education. In every national system worthy of the name, the State has provided a well-organized system of High Schools. In fact, where education is regarded as a national duty, all treatment of the question must have reference not to one class of the community but to all—not to the elementary schools merely, but to the High Schools and the Universities also—the entire series of institutions being adapted to all classes of the people, and forming a united and harmonious whole. No objection can be urged against provision for higher education by the State that will not tell with equal force against provision for primary education. “I will thank any person,” says a great American statesman, “to show why it is expedient and beneficial in a community to make a public provision for teaching the elements of learning, and not expedient or beneficial to make similar provision to aid the learner’s progress towards the mastering of the most difficult branches of science and the choicest refinements of literature.” “No system of public education,” says Huxley, “is worthy of the name of national unless it creates a great educational ladder with one end in the gutter and the other in the University.” These are the principles that have enabled the great statesmen of Germany to found and develop a system which is the admiration of the civilized world. When Prussia had been reduced to the verge of ruin by the ravages of Napoleon, her great men, summoned to their country’s aid in the darkest hour of her history, saw in education the means of her salvation. It was declared—it became an article of the nation’s faith—that most was to be expected from national education—that under methods of instruction based upon true conceptions of the moral and intellectual nature of man, a race physically and morally strong would grow up and a better future dawn upon the nation. And her marvellous success in every field of human activity vindicates the foresight of her statesmen and the soundness of her people’s faith. On such principles as these has national education in Ontario been organized. “A national system,” says Dr. Ryerson, “must include within itself a systematic and complete gradation of schools from the lowest Elementary School up to the University itself, without a missing link or break in the chain.” The benefits derived from a national organization of secondary education are very great. It is essential to the existence of an efficient system of public schools; it places a liberal education within the reach of all

who have the capacity to receive it, and brings to light genius and talent which otherwise would lie "mute and inglorious."

There can be no doubt that the efficiency of our High Schools has greatly increased since 1871, and I shall refer to a few of the changes to which this is to be chiefly ascribed. In the first place, through the pressure wisely exerted by the Department, a greater number of masters is now employed, though the number of schools has slightly diminished. In the year mentioned very few of the 107 schools employed more than one master, now there is an average of three masters to each of the 103 schools. Some schools that formerly had but one master now have four, and there is not a single instance in which *one* master is found attempting the stupendous task of teaching all the subjects of the curriculum. Thus we have better classification, better discipline, better teaching, greater industry on the part of the pupils, and, on the whole, a state of efficiency incomparably in advance of that of former days.

In the second place: I have no doubt that the action of the Department regarding Union Schools, and the qualifications of masters, has been attended with good results. Thirdly, the Entrance examination and the Intermediate have produced so marked an influence that they deserve more than a passing notice.

All experience has shown the necessity of a change, both in the standard prescribed for entrance and the mode of conducting the examinations. Boys and girls possessing a mere smattering of the elements of a public school education had been allowed to swarm into the High Schools to swell the average attendance, and increase the grant from the public treasury. The consequence was that the character of the public schools was greatly impaired, while many of the high schools, far from doing the work for which they were designed, might be said to have a local habitation and a name, but nothing more. It became necessary, therefore, to institute a more rigid examination and to make it uniform for all the schools. This was done; and the excellent results of the change are universally admitted. Justice has been done to the better class of schools at whose expense many of the inferior schools drew large sums from the public funds—not a few of the low-grade schools have been raised to a higher plane—the really good schools have become still better, and new life has been infused into the public schools.

The Intermediate examination, though it has not been so long in operation as that for entrance, has told with great effect on our High Schools. It was instituted, as is well known, at a point about midway between the beginning and the end of the High School course. It is not a competitive, but a qualifying examination; it has been established to render the work of inspection more definite and thorough, and to enable the Department to apply the principle of payment by results. It is really an *injunctional* examination. The questions being, for the most part, prepared by the Inspectors, who are familiar with the amount and character of the work done in the various schools, the examination is, in all essential particulars, such as an able teacher would prescribe to test the proficiency of his pupils.

I believe that properly conducted written examinations form a most valuable element in every well-organized system of public instruction. They not only afford a necessary test of the amount and thoroughness of the work done in a given time; they also possess a high educative value. Every teacher, of course, examines orally, teaching and oral questioning go hand in hand; teaching is what the school-boy needs; mere lecturing may do for the University student—though, even in his case, less talk and more socratic teaching would be greatly to the purpose. But oral examination is not enough; there must be frequent written examinations if the best results are to be secured. The teacher, for example, goes over with his class the work prescribed for a given time. Does he rest satisfied with oral questioning merely? Does he not know that the hasty questions given in class examination cannot test the pupil's knowledge like the carefully prepared questions of the written paper? Does he infer that, because the general answering of the class during recitations has been satisfactory, they are thoroughly masters of the work gone over? On the contrary, he resorts to his written tests, at once fair and uniform, and on the results of these he determines the actual proficiency. He can judge from these whether he has attempted too much or too little in a given time; or whether, as sometimes is the case, his teaching has been at fault. For if the examination proves a comparative failure, he concludes that he has attempted too much, or that his teaching has been defective, or that his students have been less able and industrious than he had given them credit for. It not seldom happens that the ambitious teacher, ani-

mated by a laudable desire to have his school distinguish itself at an examination, attempts too much work within a given time—as when a master, in a few months, hurries a class over all the work prescribed for the "Intermediate." Or the failure may be due to defective teaching. Clever and industrious students, we will suppose, have decidedly failed. Then the conscientious teacher will enquire whether the fault is in himself. Knowing a subject well himself, he often overlooks the fact that what long familiarity has made mere axioms to him, presents real difficulties to the learner. Or there may have been some fault in his *method*, and a careful examination of his pupils' answers, and comparison with his actual treatment of the subject, will enable him to detect his error, and for the future adopt a better method.

But further, the educative value of written examinations is very great. I assert, says Prof. Jevons, that *examination* is a main element of success in training. It represents the active use of the faculties as contrasted with that passive use which too often resolves itself into letting things come in at one ear and go out at the other; examinations excite emulation in the active and able; they touch the pride even of those who do not love knowledge much, but still do not like to write themselves down absolute blockheads; and they are themselves an exercise in English composition, in the control of thoughts and the useful employment of knowledge. Examination is education. It is not merely that which goes into the eyes and ears of a student which educates him; it is that which comes out of him. It is said that to know a subject one must write a book on it. No one certainly knows himself master of a subject till he has reproduced it. So no student is certain that he is really master of a subject, or a portion of a subject, till he has passed an examination on it. Every teacher remembers how often he was deceived in his own student days; how often after listening to an exposition of his lecturer, or reading a demonstration in a text book, he thought he had made it thoroughly his own, till his self-deception was revealed in a humiliating attempt to *reproduce it as his own*. In short, written examinations give a thorough mastery of the subject, prevent the student from sinking into an attitude of mere passive receptivity—educates to logical habits of thought, and clearness and precision of expression. They are, as Prof. Jevons says, "the most powerful means of training the intellect."

The Prussians, even more than ourselves, are a great people for examinations, which really constitute an important feature of the system of education. Entrance into the learned professions, the civil service, and nearly all public offices, depends upon them. They, like ours again, are *school* examinations, and are always tests of the school or university training. The State has a guarantee that the candidate has had a sound intellectual training. In the various classes of the German High Schools, an examination always takes place before a scholar is allowed to pass from a lower class to a higher, and certificates are given on passing. These certificates are guarantees of competency which not only the State and public corporations, but business firms and others, require from applicants for admission into their service. The certificate from *Secunda* or *Tertia* is required by many merchants and by the Government for the Civil Service; such a certificate is now almost indispensable for any young man about to enter a mercantile life.

Every effort should be made to make our Intermediate and other educational certificates highly valued by the Government in determining appointments for the Civil Service—by the learned societies, by the universities, and by the public at large. Already something has been done in this direction. The Intermediate Certificate has been made equivalent to a second-class non-professional certificate; Victoria University was the first to accept it, *pro tanto*, in her matriculation examination, and Queen's has quickly followed her example. These Universities deserve, and I am sure will receive, the hearty commendations of all friends of education, for lending their powerful influence to promote the great work of secondary education. The High Schools thus receive very great encouragement from these denominational Universities; are they treated with equal consideration by the "National" University?

I may remark, while upon the subject of examinations, that perhaps one more may be tolerated—namely, a High School *Leaving* examination similar to the *Leaving* one of the German Gymnasias, the most famous of them all. We have an Entrance examination and an Intermediate; why not have, in time, a final examination at the completion of the High School course? I should be strongly in favor of such an examination if the example of Germany could be followed, which makes the *leaving* certificate *necessary* and *sufficient* for matriculation in any of the Universities.

And now a few words in conclusion.

We may well be proud of our noble system of national education. Theoretically almost perfect in its organization, it is rapidly, I believe, approaching a degree of efficiency which will leave it without a rival among the nations. It is already multiplying the elements which are effective in material progress, and creating that national intelligence which shall lay broad and deep the foundations of national liberty. But great things are yet to be done, and their accomplishment rests in the teacher's hands. The system may be as perfect in theory as human genius can make it; but it must fall far below its high ideal without its army of able and devoted teachers. You are workers in the grandest field of effort that ever engaged the heart and intellect of man. Daily, hourly—through earnest, conscious effort, and still more through the silent, ceaseless influence of the unconscious life,—you are leaving impressions which are ineffaceable, you are touching chords that shall vibrate for ever. Inbued by somewhat of that enthusiasm for humanity which characterized the Divine Man, it is yours not only to awaken intellectual life, but to touch the moral and religious nature—to inspire a reverence for that divine *spirit* of the Gospel, which, rising in imperishable grandeur from the warfare of dogmas, "is silently and gradually operating with ever widening, humanizing and enlightening influence on the destinies of mankind."

On the self-sacrificing efforts of the teachers throughout this great Dominion largely depends the destiny of our country. Shall it have a glorious future, or stand, after a brief semblance of life, a "skeleton among the nations?"

We believe a grand future is before us. We have been called to a great inheritance and entrusted with an exalted mission among the peoples of the world. Never was nation more splendidly endowed with the elements of a vigorous life, never was national birthday ushered in under brighter auguries for future greatness. We have a climate, under whose invigorating influence is attained the highest degree of physical and intellectual life; we have a geographical position affording unsurpassed facilities for achieving maritime and commercial greatness; we have a rich exuberance of material resources for the rapid development of all the industrial arts; we have in our fertile plains and valleys "ample room and verge enough" for the support of a mighty population. We have more than this. We have all the high instincts and all the manly qualities that distinguish the British race, whose valor and whose genius and whose love of liberty, consecrated ever by the spirit of religion, have made them the leaders in the grand march of humanity. We have more than this. The rich heritage of Britain's history is ours; we share in the renown of her immortal deeds; her glory is reflected from our national escutcheon; the spirit of her illustrious dead inspires us to high purpose and heroic endeavour. We reflect on her gallant conflicts with despotism, her splendid achievements in science and literature, and all the priceless triumphs in civil and religious liberty she has won for the human race, and we are lifted to the requirements of a grander destiny, and impelled to strive for a future worthy of so magnificent a past. We have more than this. The English language is ours, by no means the least valuable element in our peerless heritage; it is of all living tongues the noblest vehicle of human thought; it is the language which no nation can speak and remain enslaved—the language of liberty, of science, of religion—the language "which stronger far than hosts that march with battle-flags unfurled goes forth with FREEDOM, THOUGHT, and TRUTH to rouse and rule the world." We have more than this. The accumulated wisdom and experience of all past ages of the world are ours. To Egypt descended only the civilization of the East; Greece inherited that of Egypt and transmitted it purified and enlarged to Rome, which in turn bequeathed modern civilization to the world. We enter, therefore, upon our national career with the light of all the past beaming on our pathway, "the heirs of all the ages in the foremost files of Time." We have more than this—immeasurably more. Effective in national development, more fruitful of national happiness, more conservative of national greatness, we have institutions enshrining the very genius of liberty—founded on the great principle of human brotherhood and equal rights to all. And we have that pure religious FAITH, which exercises upon all other elements of national life a purifying and a vitalizing power, and without which no nation can win enduring greatness.

If, then, we are true to ourselves, a grand future lies before us. No power can quench that spirit of enterprise, that love of liberty, that universal intelligence, that religious zeal which characterize our race and which guide and impel us onward in an ever-brightening pathway. Sublime destiny! I seem to hear the tread of the uncounted millions coming up to the possession of this great Canadian

zone. They are millions of the truly noble whom virtue and intelligence have ennobled; millions of the truly free whom the truth of God has made free. Their lineaments are the lineaments of the British race, their speech is the speech of freemen—the noble tongue of England. In a mighty chorus of voices, like the sound of many waters, I hear the melodies of a divine religion blending with the songs of liberty. I look, and visions of a beautiful land break upon my view. The fairer forms that cultivation glories in have been won from the savage wilderness; the genius of intelligence has breathed over the solitary places, a thousand forms of beauty have started into being, and the song of civilization has broken on the immemorial solitudes. Throughout the boundless extent of our rich domain the workshops of industry have risen in thousands, where the genius and skill of myriads of artisans are daily added to the national wealth. I see Schools and Colleges so increased in number and efficiency, that the blessings of a liberal education have become universally diffused, and ignorance finds no lurking place in all the happy land. I see political institutions become as nearly perfect as anything of human origin can be, and all the great purposes of government accomplished with the simplest machinery. I see politics lifted from the mire and invested with unwonted dignity. I see pure laws and high intelligence and refined manners, and truth, and justice, and honour, and patriotism and divine benevolence everywhere prevail. I see the universal people, amid all their material prosperity and marvellous intellectual progress, governed ever by the immutable principles of pure religion,—repressing vice, exalting virtue—true to themselves, true to humanity, true to the high purposes of heaven, exalted by that righteousness which exaloth a nation—brave and free, and happy and powerful, working out their glorious destiny under the benignant guidance of the Ruler of nations.

PROFESSIONAL TRAINING OF THIRD-CLASS TEACHERS.

Mr. William McIntosh, Public School Inspector for North Hastings, introduced this subject. He said: Since 1871 the number of Third-class Teachers had been rapidly increasing. From all parts of the Province a complaint loud and deep came from the inspectors and the people that the schools were falling into the hands of men who had no preparatory training for their work, and they asked that the Department should devise some scheme for giving third-class teachers some training. The existing Normal Schools were not equal to the task, and it was impossible to increase them sufficiently for the purpose. This led to the scheme of utilizing the Public Schools for the work of training third-class teachers. The Model School system having been in force for only about a year, it was perhaps too early to look for results, but he thought they had in the main done good work, although his opinion was, that they were not entitled to the amount of laudation that had been bestowed upon them. As to the details of the system, the course of study laid down he considered rather ambitious, imposing more work on the head-masters than they were physically able to overtake. Some subjects on the professional list should be relegated to the non-professional, the former being restricted to real work of training as apart from literary and scientific instruction. He thought the subjects of hygiene, mental arithmetic, and school law should be attended to, if possible, in connection with the non-professional course. A matter of dissatisfaction on the part of some was the shortness of the session; but, taking into consideration that they were only giving teachers a third-class training, and that there were a large number of counties that had not a sufficient supply of teachers, the session was probably as long as the country would care about having at present. In order to make the Model Schools as efficient as it was necessary to have them, the head-masters should be thoroughly qualified, and the difficulty of obtaining such would, he feared, be the principal obstacle to the success of the system for the next few years. This difficulty was owing to the fact that until recently the Normal Schools of the Province were not training teachers in the way they should, although that state of things had been somewhat remedied by the recent regulations. If the Model Schools did their work well they would be a blessing to the country; if not, they would become a nuisance. The Central Committee should see that no first-class teachers were turned out except those who were perfectly qualified for their work. (Hear, hear.) In order to secure as efficient head-masters as possible, the Department should reserve to itself the power to recommend the dismissal of teachers from the Model Schools, and should establish a thorough system of inspection of them by a competent man appointed by the central authority, providing that a copy of his report should be sent

to the trustees and the County Councils. Encouragement, in the shape of some duty in connection with the Model Schools, should be given to local inspectors to take an interest in them. The grant of \$100 to the Model Schools was, he considered, too small, and might with advantage be increased.

Mr. H. S. Dickinson, of Stratford, thought the County Model Schools might be improved by uniting several counties, say three, for Model School purposes. A person should be appointed to take charge of the schools thus united, each county to devote a certain amount towards their support. He also urged that the regulations relating to the qualifications of Model School teachers be rigidly enforced.

Mr. Miller, Walkerton, advocated that the time of the sessions at Model Schools be lengthened to three months and a half. In regard to efficiency, he said something could be done in regard to making professional ability more important than it was at present. Ability was, he believed, of more importance than mental attainments. A teacher's certificate was too much looked to, and the ability to teach overlooked.

Mr. Archibald Macallum, Hamilton, believed the Model Schools were destined to accomplish a very great and a very useful work. The scheme of amalgamation was a good one, and he hoped it would be carried out. He did not think the difficulty of obtaining head-masters was as great as had been stated. Before their appointment these men had been excellent teachers, and he believed that they were fully equal to the task, except in the particular that it was adding too much to their other work. The time was too short—the session should extend from September till the middle of November. One or two subjects that were now in the professional should be in the non-professional class.

Mr. Smith, Wentworth, said the recent change in the Model Schools was one of the most important which had been made in the Public Schools. If they made the Model School system what it should be, it would be a great boon to the youth of the country. All the faults of the present system should be exposed. His idea was that a rural class should be established at each Model School, so that the teachers could be trained to organize and manage an ordinary county school. The difficulty of teaching subjects was not so great; it was administrative ability that required cultivation. None but the best teachers should be in the Model Schools; not men who held high diplomas, but those who understood child nature and had ability to teach. He suggested that all certificates should be dated from the first of the year, so that they would expire at the same time.

Mr. McFaul, Lindsay, said one of the evils referred to in connection with Model Schools was the failure of their qualified teachers to take charge of ungraded schools. His method was to question pupils as to their mode of classifying pupils and conducting a school. He maintained that there was no difficulty in this, and it could be carried out in all schools. He favored the organization of rural classes at Model Schools, and he was sure this would correct the evil.

Mr. Goggin, Port Hope, said the new Model School system had been tested with success, but at the same time the regulations might be improved. The length of the session should be at least three months for third-class teachers, and half a day should be given by masters to Model School work. He favored a uniform examination. As to ability, he said inefficient members would soon be found out, and good men would get possession of the schools in the end. As to the union of counties, the scheme was a sound one, but he did not think it practicable at present.

Mr. Knight, Lindsay, thought that some improvement could be made in the regulations of Model Schools, but it was of detail rather than in the system. The teaching at Model Schools might be adapted to mixed schools, and it behoved head-masters to do their best, that teachers might be properly trained in this direction. He was in favor of lengthening the time of the session, or even of having the schools open throughout the year, thus making them permanent.

Mr. Dearness, Middlesex, believed the Model School session was rather short, and favored its extension. He had requested three teachers trained at the Model School to resign this year, because they lacked administrative ability.

Mr. J. R. Miller, Goderich, hoped the matter would be referred to a Committee. He was in favor of a uniform examination, with the privilege of allowing each county to fix its own percentage. While the new Model system had worked well, still there was room for improvement.

Dr. Kelly, Brantford, said that additional expense in connection with schools would not find favor with the people. It would tend to retard rather than promote the cause of education. In Brant the Model School had done fair work, and the pupils turned out did well.

On motion of Mr. McIntosh, a Committee, consisting of Messrs. Smith, Goggin, Dearness, McFaul, McQueen, Miller (Huron), Alexander, Dickinson, and the mover, was appointed to consider the question of the professional training of teachers.

The Committee subsequently reported as follows:

(1.) That in the organization and management of County Model Schools special consideration be given to the requirements of rural schools, by occasionally selecting a number of pupils from the different classes and arranging them so as to illustrate the method of conducting an ungraded school.

(2.) That military drill and calisthenics be added to the curriculum.

(3.) That the continuation of thorough inspection of Model Schools is necessary to their efficiency.

(4.) That uniform professional examination papers are desirable.

(5.) That the present regulations respecting the qualification of Head Masters of County Model Schools be carried out in future.

(6.) That Head Masters of County Model Schools be *ex officio* members of the County Board of Examiners, provided that they hold certificates as examiners under the present regulation.

(7.) That the Government grant be increased, and the payment of the municipal grant be made compulsory.

(8.) That it is advisable to lengthen the sessions of County Model Schools.

(9.) That the professional training in a Normal School for the length of time specified in Sec. 1, chap. 3 of the revised regulations should be received by every candidate for a first-class certificate before obtaining such certificate.

(10.) Since the character of the work done in the County Model Schools, and the efficiency with which the inspection of public schools is performed, depend largely upon the thoroughness of the previous training received by inspectors and Model School Masters, it is necessary in the interest of education that the work of professional training carried on in Normal Schools be performed with great thoroughness and efficiency.

The report was adopted by the Convention with the following amendments: In clause 2 the word "military" was struck out and the following added at the close: "The teaching may be done in connection with the ordinary Public School work." The following was added to the 4th clause: "But that County Boards should be allowed to fix the percentage to be obtained by successful candidates."

NON-PROFESSIONAL TRAINING OF TEACHERS.

Mr. George Dickson, B.A., Hamilton, read a paper on this subject. He considered the subject from a variety of standpoints. In his opinion a special training for teachers was needed. Self-made men were sometimes good, but such men possessed genius. The vast majority of self-made men never attained distinction, and seldom reached even a mediocrity of skill, and sometimes they made the tastes and opinion of the public on the subject of popular education corrupt. Hence there was a necessity for special training in academic subjects. As the work of teaching was a direct contribution to the public welfare, the training of teachers ought to be at the public expense to a far greater extent than it was at present. He made the following recommendations as to the subjects for non-professional examinations. For Third Class Teachers, (1) the standard should not be too high; (2) the idea that anyone could teach little children was not sound; (3) therefore School Boards should engage the best teachers. Scholarship was the first requisite of a teacher; but high scholarship should not be confounded with a high degree of communicative ability. The objects of the present system were too closely adhered to by the official programme and prescribed methods; and there was not enough of independent effort on the part of the pupil. Under the head of "Second Class Teachers" he pointed out (1) the beneficial effects likely to result from substituting Latin, French, or German for the Physical Sciences; (2) from extemporary translating, constant practice in English composition, and a comparison of the different idioms. The standard for passing in the classical group was too high; the Latin prose was too severe, and out of all proportion in point of difficulty to the amount of Latin which a candidate for the second class was supposed to have read. The tendency of the present system was to

discourage the study of languages. For first class certificates the option of taking Latin, French, or German, instead of the physical sciences, should be allowed. The work in the English department was too extensive to permit its being thoroughly acquired in one session. Increased study should be given to geography, which should be co-ordinate with history, and illustrated by aid of the stereopticon. A thesis should be demanded from each candidate upon some department to be optional. Moral Science should form a part of a teacher's training, and morals should be taught systematically, and include moral and municipal law, veracity, temperance, filial obedience, right of property, duties of citizenship, patriotism, &c. Mental Science should form part of a first class teacher's certificate, and he should know that the senses were the only avenues by which he can approach the minds and hearts of his pupils. He next briefly reviewed the school system of Ontario; its Public Schools, with Model Schools for the professional training of teachers; the High Schools and Collegiate Institutes, with their upper and lower divisions, and the Universities. Public School teachers were trained in the Public Schools and High Schools. High School teachers were trained in the Universities. He pointed out the relation of the High School course to the Public Schools, the Universities, and the general student. The present system of written examinations did not show the capacity and intelligence of the candidates as much as was desirable; and *viva voce* examinations alone, if properly conducted, were not so objectionable. The system of written examinations fostered rivalry between masters, and led to the pursuance of a system of cram. It was more desirable that the professional examinations should be held in December. In conclusion, he said that he made those suggestions not from any desire to be captiously critical, but in the spirit of a true teacher to advance the matters they all had at heart.

Mr. Miller, of St. Thomas, said it was a wise policy to allow "options," so that candidates having predilections should be able to cultivate their natural leanings, but there should be other studies made imperative. There was a strong opinion in favor of dividing the work so that candidates would not have too much work at one time. Holding the examinations in December would be better than in July. He agreed with Mr. Dickson as to the matter of having morals taught in the schools; teachers who did not impress upon their pupils the necessity of their reverence to religion failed to do their duty.

Mr. Harvey, Barrie, approved of the suggestion of having the examinations held in December instead of July. Notice of subjects should at least be given one year before the examinations. He could not go as far as Mr. Dickson with regard to the rivalry between High Schools. The rivalry worked good both to teachers and pupils.

Inspector MacIntosh asked what Mr. Dickson meant by conferring Normal School powers upon High Schools?

Mr. Dickson said he meant handing over the entire training of teachers—professional and non-professional—to High Schools.

Inspector MacIntosh said he could not agree with that recommendation, and he believed the majority of teachers were of the same opinion.

Mr. Dawson, Belleville, coincided with Mr. MacIntosh in this opinion. He favored the introduction of a system of moral training into the schools, but was in doubt whether a satisfactory textbook could be introduced. He thought Mr. Dickson's reference to the possibility of examiners finding out the names of candidates who were known by consecutive numbers was a gratuitous insinuation. He did not think any dishonesty existed among examiners.

Mr. Tamblyn, Oshawa, took exception to the practice of High Schools advertising the number of pupils they passed.

Mr. Grant, Simcoe, said the High Schools had quite enough work to do without undertaking the training of teachers. He therefore could not agree with Mr. Dickson on that point. He heartily agreed with the suggestion that "options" should be carried from second-class to the first-class examinations.

Mr. H. I. Strang, Goderich, favored the introduction into the schools of some kind of a manual on the relations of citizenship and the principles of government.

Mr. Lewis, Toronto, said the teaching of political economy in the schools was overlooked. It was an important branch and should be taught, so that the government of the country would not be left in the hands of political demagogues. Moral training was another branch which should be introduced.

Mr. J. M. Buchan, High School Inspector, said he entirely disbelieved in Mr. Dickson's view of the subject of cram. There was

a fallacy in the view taken of the subject, because it was based on the idea that the main object of the existence of schools was to convey knowledge and not to give mental training. He did not believe that their schools were cramming schools, except in a good sense of the term; and he asked those around him if the description given in the paper of cramming applied to their work, and they would all answer no. So far as the method of work in the High Schools went, the description did not apply at all to the pupils as a rule; for if they failed to comprehend what they were taught, it was their fault and not their master's. He admitted at once there was "cram" in the High Schools in a good sense of the term; that was, that teachers and pupils worked together for the purpose of passing the examinations. Everybody crammed. The preacher crammed in preparing his two sermons for Sunday, and got them up well. Ask the preacher a question about these sermons a month after, and he would not be able to give an answer with the same facility. The lawyer got hold of his brief and worked it up. As the result of his cramming, in a few hours after, he delivered an elaborate argument in one of the law courts; but twenty-four hours after, he would not be able to tell the leading points of his brief. Cramming in that sense of the word was one of the most useful faculties that man could possess. The good teacher crammed. He knew his lesson far better the day he taught it than a year hence. It was a good and useful thing to cram in that sense of the word. By fostering that faculty, teachers were fostering in their pupils the habit of exercising the greatest economy in their mental work. The argument he had just been criticizing was the usual argument against cramming; but it had also been argued in the paper just read that to strive for superiority was contrary to the religion of Christ. If that were the case, then he was a pagan, and nearly all those in the room were pagans also. But he did not believe that that was the religion of Christ at all, when properly interpreted. If so, why should many in a Christian land be so proud of their great men whose busts ornamented the room? Why did they esteem that man whose bust was yonder, and who said thirty-five years ago one day he would be Prime Minister of England? That man had risen to the height of his ambition, but in so doing he had kept down others. Such was the natural result of any person occupying a position above the bulk of mankind. There was much in the paper with which he agreed; but there was one topic discussed—the proposal of transferring professional training from the Normal to the High Schools—which at the present time he could not endorse.

BIOLOGY IN ELEMENTARY EDUCATION.

Professor Ramsay Wright, of University College, read an essay on this subject. In opening, he said that Professor Huxley's admirable essay on "The Educational Value of the Natural History Sciences" covered most of the ground to be dealt with in his paper. The contents of that volume could not be too often repeated to the public. The teaching of natural science now formed an integral part of the Ontario Educational System, and consequently it was not necessary to expatiate on the desirableness of its study. It was to be regretted that the British House of Commons, notwithstanding the endeavors of Playfair, Lubbock, and others, had excluded from the list of subjects for which grants are given under the Educational Code, the study of Elementary Science. He would consider the subject of the paper from three points of view: (1) The advantage of introducing Biology into Elementary Education; (2) the nature of the studies by which that introduction must necessarily be preceded; and (3) the method to be employed in its systematic teaching. Regarding the first point, he contended that every youth should be made acquainted with the fundamental law which guided the working of the human organism, in order to make them capable of grasping the true doctrines of health. The prevalence of disease demonstrated the importance of such a study. Far more important than health was the question of man's position in the universe. Those who accepted the truth of the doctrine of evolution claimed it to be under the domain of Biology; and although he would by no means insist, like Professor Huxley, the high priest of the new Monistic Philosophy, that that doctrine should, as an accepted hypothesis, be used as the guiding principle in all the instruction of the young, still he conceived it to be their duty that such a fundamental knowledge of biology should be spread abroad that the accusation of and prejudice in those who adhered to the prevalent opinion should not be so well founded as it often was, and that they should not have to resort to such miserable supports as a set of lectures on so-called biology which had recently appeared. The question of the investigation

of the phenomena of the mind possessed much interest; but it was only recently that the science of psychology had been cultivated as a branch of physiology; and from the material advances made by men like Lewes, Wundt, and others, we may anticipate much light will be thrown on the formation of the brain as the organ of the mind. Those advances had been of such a character that the education in mental philosophy which did not comprise a comparative study of the forms lower than man, especially as regards the psychic phenomena, must of necessity be one-sided. The history of the earth, anthropology, ethnology, and linguistic sciences, would be absolutely closed to him who was ignorant of living forms and biology. The study of living forms was so essential it could not be neglected with impunity by any one who had to enter on the battle of life. A love of exploring nature opened an inexhaustible source of pleasure; and to youths it would give more genuine enjoyment than hunting postage stamps, crests, and the like. In considering the second point, he said that in some schools more attention than was desirable was given to the study of natural sciences; for no infringement upon the ordinary literary studies was justifiable. A knowledge of the Greek and Latin languages was an inestimable auxiliary to the study of nature. It was stated that "systematic teaching of biology could not be attempted with success until the student had attained to a certain knowledge of physics and chemistry; for though the phenomena of life are dependent neither on physical nor on chemical, but on vital forces, yet they result in all sorts of physical and chemical changes, which can only be judged by their own laws." Since the last clause was written biologists recognized it as more imperative than ever that chemistry and physics should precede their own study; for the human body, as a German physiologist expressed it, like that of every other animal, is an organism in which, by the chemical changes of its constituent parts, potential is connected with Kinetic energy. Such a statement was a vindication of the fact that the further physiological investigations were carried, the more it became apparent that the laws which regulated changes in the animal and vegetable body were those which were operative in the inorganic world. It was imperative that the statement should acquire the accuracy of method which characterized the science referred to. Kant said that the scientific value of any branch of knowledge might be measured by the applicability of mathematical method in it. Huxley energetically combated a similar statement of Comte's; but there was much truth in it. The student should be impressed with the desirableness of encouraging a certain habit of thought. Haeckel, at Munich, in 1877, said, "After all, it is always the recognition of the effecting causes, not the mere knowledge of facts, which satisfies—the constant want of causalities of our mind, the recognition of common, simple causes for the most various and complicated phenomena leads to the simplification as well as to the deepening of our education and culture, only by casual conception dead knowledge becomes living science—not the quantity of empirical knowledge, but the quality of its causal conception, is the true measure of the education of the mind." That that was the sort of mental education which they wished to give was only too evident from the deficiency in it which all of them experienced more or less. Faraday in one of his lectures ably advocated the value of the more exact of the physical sciences in cultivating judgment. A careful study of mathematics, and the acquisition of the art of drawing, should precede a study of the physical sciences. During the time of probation the curiosity of the youthful student should be encouraged as much as possible. On the third point, he said that the introduction of the study of biology into the schools had led to the publication of text books of very unequal merit. Most of them in pleasant and sometimes accurate language attempted to convey a simplified general view of the facts and principles of the science in question. Their effect was merely to give the student the veriest superficial view of the question. Some books, on the other hand, aimed at an exhaustive study of certain commanding points, and pointed out the pleasant lands lying beyond. Of the two kinds he preferred the latter. All teaching should be from the simple to the more complex. An elementary biological course should be in the main observatorial, and the teacher should, in addition to the faculty of imparting knowledge, be a man of catholic sympathy, and encourage a liking for out-door work among his pupils.

RELIGION IN PUBLIC SCHOOLS.

Mr. Buchan, High School Inspector, said he had noticed lately that there was something like an educational scare among a por-

tion of the public in reference to the matter of moral training in schools. They seemed to hold the idea, that there was a lack of religious instruction in the schools, and that as a consequence these institutions were degenerating. They held that the absence of it leads to absence of moral training. This feeling, he had noticed more recently, was shared in by some of the teachers, who proposed that moral text books should be introduced into the schools, and that there should be a distinct training given in morality, the same as in geography and history. Much of the misapprehension existing in this respect arose out of a want of clear ideas as to the nature of morals, and a distinction between morals and religion. Our moral notions were based on the idea of duty that was present in every man's mind. The capacity for distinguishing between right and wrong was developed at an exceedingly early age. Very young children gave indications of possessing this faculty. All systems of religion were based on something totally different. They were based on a relation between human beings and supernatural beings. There was a conception at the bottom of every religion, whereas a fundamental feeling lay at the bottom of morals. Religion was not moral. The ancient Greeks were a case in point. They had gods for everything, even a god of thieves. It didn't cover the moral sphere. Ours did, and sanctioned whatever it was our duty to do. We lived together in society, and it was to that class of duty, viz., the duty we owed to society, that the word was applied. In the same way, it was customary to apply the word religion to religious duty. With this restricted sense in view, he proceeded to notice the peculiarities of moral nature in order that the remainder of the subject might be understood. He had adverted to one already, viz., the capacity of distinguishing between right and wrong: this was an innate faculty. In the second place, the fact was to be noticed that we had within us a monitor which praised and condemned our actions in a very peculiar and inflexible way. It decided, and that was its decision. But it varied in different countries. That was considered right in Asia which was wrong in America. Polygamy for instance. Another point was that although we knew what was right we did not do it. Moral training was necessary to get over this peculiar defect of nature. The criterion of a man's morality should be placed at what he did and not what he knew. His conduct was an essential thing. For his conduct to be good he must form habits of right action. Habits had always been formed, and they determined the character of the future man to a large extent. Habits were formed by a repetition of action, or in other words by imitation. A child by grasping an article frequently learnt to grasp; in the same way moral habits were formed in childhood. A child imitated its elders in almost everything. Surroundings and associations influenced a child's mind to a large extent. It was therefore evident that home and other influences had more effect upon a child's mind than school influences. A child did not go to school until at least five years of age, and then it was only there five days a week and five hours a day, so that it was at home two-thirds of the time. It was obvious, therefore, that the part the school played was not the first part, and he appealed to those around him whether the boys who turned out badly did not come bad to them. Home influences were so strong that it was difficult for teachers to contend against them. He then discussed what teachers could do. The teacher's work in this respect depended more on the silent influence of his own character than anything else he (Mr. Buchan) could mention. But he could mention some things that were useful in the moral education of children. The general discipline of the school was a great moral agent, as also was punctuality and other habits which might be classed under the heading of self-control. Special acts of discipline in school, if properly performed, were of immense moral use. Everything depended on the way discipline was carried out. And here he wished his hearers to guard against an assumption which many held. These latter said, do not chastise a child; rather appeal to its moral nature. He could not appeal to that which did not exist. To a man's moral nature we could appeal, but not to a child's; it was not developed in a young person. Again, the work performed in school had an immense moral value. Habits might be good or bad; and if work did nothing else it prevented the practice of evil habits. Besides, work formed the habit of industry, which was an exceedingly valuable one. In the next place, as a child advanced he should be instructed to form the habit of saying everything accurately. This habit of truth telling would prevail in its whole conduct. Associating with other children had a good effect upon a child. It taught it to understand that at times its opinions

would have to be subservient to those of its fellows, and that it could not always have its own way. In attending to good manners the teacher exerted an influence upon his pupils. The very essence of good manners was in seeming to be good, and this effort itself tended to make good. In conclusion to the whole matter, he could positively deny the oft-repeated charge that the schools were declining in consequence of the want of moral teaching in them. People contended that the amount of crime in the country was to some extent due to this want, but if we appealed to the evidence of facts and figures we found no such belief. During the last twenty-five years there was no outward evidence of the increase of crime as compared with the twenty-five years immediately preceding. In Germany, France, and other countries where religious instruction was given in the schools, crime was greater than in the United States and this country, where religion did not form a portion of the course of study. He believed that in a country where the teachers were selected as they were here, by local boards, the teachers were equal and probably superior in average morality to the rest of the community. If only equal, their influence would be the same as the rest of the community. If a teacher wished to be successful as a moral trainer he must pay attention to his own character and silent influences—but don't let him introduce a text book. Trivial ideas grow like plants, and an attempt to teach morals by a text book would be the same as to place a plant on the soilless floor of a library, water it with text books on agricultural chemistry, and expect it to grow, instead of giving it glass and light.

THE WORK OF THE CONVENTION AND HOW BEST TO DO IT.

Mr. James Hughes, Toronto, opened a discussion on the above subjects. There were some who said that since the County Associations had been so well organized and thoroughly carried out and were doing so much good, that it was not necessary to have a Provincial Association. The County Associations were, however, not yet fulfilling their highest functions, and there was still better and more work for them to do. He did not see that that was any reason why the Provincial Association should be given up. The work done by them was mainly institute work, intended to develop teaching power, and as they did it so well it should not be necessary for the Provincial Association to do so much of the work as it had done in the past. The District Associations, such as the Eastern Association, would each have a function and a very important duty to perform. No doubt they had local matters which required special attention, and which they could give. But nevertheless he did not believe that their functions would interfere with the Provincial Association, and he had never believed that their different interests would clash. He hoped their action that day in appointing a delegate to the Eastern Association would remove the idea, that they regarded it in a spirit of rivalry. Instead of regarding the organization of these District Associations as a reason for doing away with the Provincial Institution, he regarded this and the existence of the County Associations an additional reason for the continuance of the Provincial body. What then were some of the functions which the Provincial Association should have? In the first place, the Provincial Association should discuss educational questions affecting the Province as a whole. There was no doubt that the Association had in the past accomplished a great deal of good in educating the public mind of this Province, and perhaps even in educating those who had the management of educational affairs. The Association had been regarded, to a certain extent, as an educational Parliament, in which the leading educators of the county assembled for the discussion of the great living educational questions of the day. This function has not been taken away in the organization of the district or county Associations. Some people thought that our educational affairs were so near perfection that we did not require to discuss them. He, however, was one of those who thought that our educational system should ever be growing. In the second place, the Association should note the progress and growth of educational thought in other lands. They were the representatives of the different parts of the Province, perhaps they were the leading representatives, and as such they were certainly expected to be thoroughly acquainted with the progress of education in other countries, with new developments, and even with new departures. He did not feel that they had nearly arrived at perfection in the principles or methods of teaching. In order that the teachers throughout the country might be kept better posted on the progress of education in foreign lands, he thought that the Association should be a means of distributing such information to teachers.

The Association should also devise means for making county branches as effective as possible. At present the different Associations were conducted in different manners. Each county might have some point of excellency which this Central Association should endeavor to foster and establish among the other counties that might be less fortunate. For that reason alone the Association should be continued. The Association ought to be continued in order to devise means for the education of the people after they had left school. The educational character of the country was, to a very great extent, in the hands of the teacher. Teachers might make it depend, and they ought to make it depend, on themselves to a far greater extent than they did at present. He was aware that the teacher generally fell in with, and even down to, the tone of the current of thought in his section, and he generally did very little outside of his school to elevate the educational character of the population of his district. They as teachers were not doing their duty unless they took steps to secure a good deal more education for the people after they left school. The library system had been tried in this country, but it had not yet proved a success. He believed that a large class of the people were hungering to get a better class of reading, and their desire might be satisfied if the matter was only put before them in the right way. They should take up this question as one of the functions of the Association. The Association might also have another function. Although they did not at present do much of the institute work, which properly belonged to local associations, they might establish during the summer holidays an institute for the benefit of teachers and inspectors who wished to receive training in those subjects that were too frequently neglected in the education of teachers at the Normal Schools and other places. Among other subjects he referred to elocution. This important subject was taught to a very limited extent in this country. There were in the Province some 5,000 teachers, to whom an opportunity should be afforded of improving themselves in elocution. The Association might very wisely establish, during the summer, an institute where teachers might enjoy their holidays, and at the same time have an opportunity of studying such neglected studies as elocution, drawing, music, perhaps drill and calisthenics—subjects which they were required to teach but which, as a rule, they were unfit to teach. There were other reasons which might be urged to show the necessity for a Provincial Association, and one of these was, it would be a means of bringing together the educators of all parts of the Province. They were sure to grow narrow-minded as teachers unless they met together once in a while to discuss educational questions. The teacher in a school had to deal with minds that were not nearly so well developed as his own, and if he did not go beyond his own pupils it was evident that he soon became possessed of very narrow and contracted views. He should not confine himself to attending the meetings of the local associations, for these also were more or less narrow. If there existed any sectional feeling in the country it was due to influences of this kind. They wanted a central Association, by which they could learn to sympathize more with one another in their educational work, in the social relations both in school and out of school. It should be a duty of the Association to afford more opportunities for them to come in contact with one another as friends, as fellow-teachers, as persons striving in the same profession for the same object. The next question was that of membership. Was their Association a Provincial one? It was so in name, and in the extent of territory it was supposed to represent. All teachers and inspectors from any part of the Province could become members of this Association, and therefore in that sense it was certainly Provincial. But it was scarcely a representative Provincial Association, because it had not representatives from every county in the Province. There were sections from which he had never seen a representative. He was afraid, therefore, that in this respect it could not be considered a Provincial Association. How to become so was one of the first questions to settle. He did not see that they could become a Provincial Association in any other way than by becoming representative in character. The basis of representation in regard to High Schools, etc., could be arranged afterwards, and they would become a true educational Parliament. They would have delegates appointed to the Association coming from all parts of the country, instructed to indicate what were their leading grievances, if any, and the voice of the whole Province would thus be heard. If they adopted any resolutions, these would have great weight coming from such a body. In the minds of some the question of expense would cause an objection. The Government had, however, very wisely set apart a certain sum

for each local Association, and a portion of this might be devoted towards paying the expenses of the delegates to this central meeting. If this proved insufficient, and the Association showed that it was doing an important work, the grant would probably be increased. A second objection was, that the plan would shut out certain parties who wished to come and get the benefit of these meetings. The delegates would, however, take home to their respective districts the information imparted at the meetings. The Association would be like a great Normal School for the training of men to develop others. He thought that they should have the three sections as at present, each to attend to its own special work. A full report of the proceedings should be printed and sent to all the teachers in the Province. If this Parliament were established, they would have to be more careful in arriving at conclusions than they were at present. Every matter requiring action to be taken upon it should, after full discussion, be referred to a committee, and hasty decisions would then be avoided. Not only did he think a Provincial Association a necessity, but he would be glad to see it extended, so as finally to become a Dominion Association. This Dominion Association would not meet probably more than once in three years. Its scope would be to discuss educational matters which affected the country. A good example in this respect has been set by our neighbors across the line, who have succeeded in getting a national bureau established, which acts as a centre whence an immense amount of information is distributed to the teachers of the country. He trusted that whatever changes were made in the constitution of the Association, all its old friends would stand by it as truly and as warmly as ever, and that the changes might be the means of winning for it a large number of new friends. Not wishing the Association to come to any conclusion too hurriedly on the question, he had prepared a resolution to the effect that Messrs. McMurchy, Dawson, Macallister, Johnston (Cobourg), and the mover should be a committee to consider the advisability of altering the Constitution of this Association; the Committee to report at the next annual meeting. He begged leave to move the resolution.

Mr. Miller, St. Thomas, seconded the motion, and, in doing so, said he would like to see the Association extended, so as to include representatives from the different colleges of the Province. The National Associations of the United States were ahead of us in this respect.

PROFESSOR GOLDWIN SMITH was unanimously requested to address the Convention. He kindly acceded to the request and delivered a very able address, dwelling especially on the subject of University Consolidation. It is with much pleasure that we announce the hope that the readers of the JOURNAL may have the privilege of reading an article from Professor Smith's pen on this important question.

Practical Department.

CONVERSATIONAL COLUMN.

Do the sons of farmers need drill and calisthenic exercises? Certainly. "But they get sufficient exercise on the farm for the benefit of their health." They do, but drill and calisthenics are not designed simply for the benefit of their health. The good results which flow from them in this direction are merely incidental, although great. The direct benefits arising from them are facility in controlling a class, and improvement in the figure and carriage of the pupils.

What would you do with pupils during recess on stormy days? Recesses are given to afford relief from study to the minds of the pupils, to allow them the opportunity of exercising to keep the physical system in order, and to enable the teacher to get the air of the schoolroom purified. If the weather is too stormy for children to go out, these objects can be accomplished nearly as well with the pupils in the school room. On stormy days, have two short recesses during each half day instead of one long one; have your pupils march in file around the room, or in serpentine march up and down between the desks, keeping time to music or their own singing; or practise extension motions or other free calisthenic

exercises. While doing so, let the windows be opened so as to purify the air. Brisk movements will prevent the catching of colds, while the ventilating process is going on. Do not under any circumstances allow your pupils to congregate in the school room during recess. Disorder is certain to result from such a course.

How would you use the blackboard in teaching physical geography? Use it mainly in reviewing. Outline a country and mark places by figures, 1, 2, 3, &c., and let the whole class write answers on slates or paper. A great deal may be done in a few minutes. Then taking the names from the class, write them in proper positions, and have the slates corrected by the class. This exercise will fix positions of places more quickly than any other method. The class should repeat the exercise on their slates, copying from the outline drawn on the board. The board should also be used in teaching "map-sketching," and occasionally instead of a map in teaching.

QUERIES.

What are the best American school journals? D. H. B., Halifax.—The best American educational journals were named in the March number of the JOURNAL.

Are Normal Schools used for preparing candidates for the non-professional first class examinations.—Yes. First class candidates receive both professional and non-professional training at the Ontario Normal Schools.

What are the subjects for Teachers' Examinations? Teacher, Kent.—*Third Class.*—Reading, Spelling, Etymology, Grammar and Composition, English Literature, History, Geography, Arithmetic, Algebra, Euclid. *Second Class.*—In addition to the above, Etymology, Natural Philosophy, Chemistry, Bookkeeping, and Mensuration. *First Class.*—In addition to second class, Botany, Physiology and Physics. For the limits in each subject write to the Education Department for a circular.

Is an intermediate certificate equivalent to a third class certificate?—Yes. A holder of an intermediate certificate who has not taught may attend the County Model School, and teach for a year so as to entitle him to attend the Normal School for his professional training for a second class certificate.

Will the English Literature for 1879 be the same as for 1878? Dominic, Scotland.—Yes.

PERSONALS.

Mr. D. J. Goggin, Principal of Port Hope Model and Public Schools, was married during the vacation.

Mr. James Davison has been transferred from Whitby High School to take the place of Mr. Summerville, who recently became a Public School Inspector in the county of Wellington.

Mr. R. Sheppard has been promoted from an assistant's position to the principalship of the Public Schools at Strathroy.

Brantford Collegiate Institute Board gives three scholarships for competition by the intermediate candidates at the Institute. At the late examination the first was won by George Nichol, of Paisley; the second by A. Haig, of Baltimore, Ont.; the third by E. Horning, of Norwich.

Notes and News.

ONTARIO.

Toronto Public School Board now employs 139 teachers.

A movement is on foot in the Peterborough School Board to dissolve the union between the High and Public Schools.

Sarnia School Board is introducing steam heating apparatus into the Model School building.

The East Lambton Teachers' Library is to receive an addition of \$150 worth of books.

Searceth has voted \$6,000 for the erection of a new High School building.

In the last inspector's report, Bowmanville is recommended to provide a new High School building for its already efficient school.

The Haldimand County Board has adopted resolutions to the effect that the County Inspector shall not recommend to the Minister of Education the extension of any third-class certificates unless the holder first undergoes the proscribed examination and obtains the requisite number of marks; and that the third-class subjects ought to be arranged in the following groups:—(1.) Arithmetic; Algebra and Euclid; (2.) Grammar, Dictation and Composition; and (3.) Geography, History and English Literature, with a minimum of 30 per cent. for each subject, 40 per cent. for each group, and 50 per cent. in the aggregate.

The Peel County Board of Examiners has adopted resolutions dispensing with attendance at Model Schools in the case of those who passed the recent third-class examination in addition to having certificates from other counties endorsed by the Inspector; granting assistants' certificates to those candidates who failed to obtain the requisite number of marks on all the test subjects, and yet obtained the necessary aggregate percentage; recommending intending candidates, in view of the increasing difficulty of the examinations, to spend a year or two at some High School; and calling the attention of the Minister of Education to the unnecessary severity of the Algebra examination for third-class.

Victoria County. J. H. Knight and H. Reazin, P. S. Inspectors. Continued progress has been made in the erection of substantial school houses, in the construction of which we are pleased to notice that much attention is being paid to the subjects of ventilation, lighting, heating and other matters relating to the health and comfort of the children. There are now in the county, brick school houses, 53; frame school houses, 41; log school houses, 41.

All the school sections in Ops have now good school houses, and this will also be the case in Fenelon by the end of the present year.

As a proof of the improved work done in our public schools, we have only to refer to the largely increasing numbers of well prepared candidates coming up from year to year: from those schools to take the various examinations, which are now much more difficult than they were formerly. Some of our public school teachers are even now aiming to prepare students for the Intermediate Examination held in the High Schools—an examination that is equivalent to that for Second Class Provincial certificates—an ambition which we do not feel disposed to encourage, as this is work that can be more efficiently done by our High Schools. And there is a fear that work of this kind in our public schools may lead to the neglect of more legitimate public school work.

We are glad to notice also an increasing demand for teachers of the higher classes, and a willingness on the part of trustees to pay liberally for the services of such teachers. The highest salary paid to any public school teacher in the county is \$700, and is still paid by the village of Bracebridge.

At the close of the year there were in the county six first-class teachers, being an increase of three over the previous year; 29 second-class teachers, an increase of 4; 105 third-class teachers, an increase of 9; and 11 interim teachers, a decrease of 13.

ROMAN CATHOLIC TEACHERS' CONVENTION.—A convention of the Roman Catholic Teachers of Ontario was held at Hamilton on the 23rd and 24th of July. There was a goodly attendance of teachers from all parts of the province. Mr. O'Hagan, of Trenton, occupied the chair. It was resolved to establish a journal devoted to the interests of Separate Schools; also to form sub-associations and libraries and reading rooms at various localities. The committee on School Law drew up a number of resolutions which, if passed, will give the Separate Schools a fair opportunity to flourish in this province. The evening session was particularly interesting. It was opened by the Rev. Mr. Brennan, who occupied the chair, delivering a very excellent address on Catholic education. Mr. T. O'Hagan followed with a very fine essay entitled "The Wants of the Separate Schools." Mr. C. Donovan then delivered a very interesting address on the Object and History of the Separate Schools in Ontario. Miss Walsh followed with a beautiful essay on Reading. Mr. G. Gfroerer's address on School Law brought the evening session to a close. The following are the officers of the Association:—President, Thomas O'Hagan, Trenton; First Vice-President, C. Donovan; Second Vice-President, Thomas Swift; Third Vice-President, Miss Walsh, Hamilton; Cor. Secretary, J. F. White, Trenton; Assistant Secretary, Miss S. A. Byrne, Hamilton; Recording Secretary, P. Smith, Dundas; Treasurer, Jas. McEntee, Peterboro; Board of Directors: Messrs. Kearney, Mullen, S. Gfroerer, Maloney, Donovan, and Misses O'Grady, C. Bllantyne, McCowell and Lynch, with the President and Secretary, *ex officio*.

QUÉBEC.

THE MCGILL UNIVERSITY CALENDAR FOR THE SESSION OF 1878-79.—This is a thick 8vo pamphlet of 148 pages, and with the examination papers a bound volume of considerable size, and the matter which it contains is condensed in such a manner as to give the greatest possible amount of information in the least possible space. The advantages which the City of Montreal, and the McGill University in particular, offer to intending students are well worthy of their consideration, and we would commend this calendar to their study. The Faculty of Arts, with its four years' course of Literature and Science, stands much as in previous years, with some minor improvements in text-books and in arrangement of subjects. Nine exhibitions, and scholarships of the value of \$100 to \$125, are offered for competition in the matriculation examinations of September, 1878. The new Faculty of Applied Science, until this year a department in the Faculty of Arts, presents a four years' course of study, leading to the professions of civil engineering, mechanical engineering, mining engineering, and practical chemistry. These courses are fully set forth in detail and seem very complete. The Medical Faculty, now very fully and ably officered, gives more completely than heretofore the details of its course of study, along with the specialties provided for in its summer course. Great attention is now given in this Faculty to Histology and to Clinical Demonstrations, and courses in Hygiene and Ophthalmology and Otology have been added. In the Faculty of Law the course stands as in former years; but new arrangements have been made to insure more full courses of lectures and a higher standard of examination. The McGill Normal School will commence the 26th session of its useful work next autumn; and as usual offers a thorough training free of expense to all intending teachers. The Calendar may be obtained on application to the secretary of the University.

REVIEWS.

GERMAN LETTERS ON ENGLISH EDUCATION. By Dr. L. Wiese. London: Wm. Collins, Sons, & Co.; \$1.50.

Dr. Wiese was a prominent educator in Prussia for over fifty years. For twenty years he was Privy Councillor in the Ministry of Public Instruction. No one is therefore better acquainted with the system of his own country. In 1876 he visited England and Scotland, and carefully examined the leading High and Public Schools in both countries. This work gives his impressions, criticisms, and comparisons with the Prussian system. The whole of the leading features of the English system are discussed intelligently. Much is approved, some leading features are regarded as defects. Special attention is called to two fundamental defects, one positive the other negative: the system of examinations, and the lack of professional training on the part of teachers. The book is a most valuable one.

THE YEAR BOOK OF EDUCATION. By Kiddle and Schem. New York: E. Steiger; \$2.

This is a continuation of "The Cyclopædia of Education," published by Mr. Steiger. It contains classified information on all educational topics; giving the progress made during 1877. The appendices are very valuable. "The Cyclopædia" and the "Year Book," which is to be published annually, form a fine educational library in themselves.

ELEMENTS OF RHETORIC AND COMPOSITION. By Professor Hill, Lewisburg University. New York: Sheldon & Co., 8 Murray St.; 85 cents. A very full and exhaustive work; designed to teach how to arrange thought, and give expression to it in correct English. The arrangement of the work is good. The author censures the use of some words in almost universal use.

GRADED LESSONS IN ENGLISH, AND HIGHER LESSONS IN ENGLISH. By Professors Reid and Kellogg, Brooklyn Collegiate and Polytechnic Institute. New York: Clarke & Maynard. Price for introduction, 80 and 50 cents respectively.

These are not in any sense similar to the old, heavy, dry work, on Grammar. They are manuals of method for the teachers as well as text books for the pupils. Teachers will receive many valuable hints regarding the simple and attractive way of teaching pupils to speak and write English. This subject ought to be one of the most popular with children. It is not usually so, but these volumes will aid in making it so. The neat method of analysis is a feature of the books.

HANDBOOK OF PUNCTUATION. By *W. Cocker, A. M.* New York and Chicago: A. S. Barnes & Co.; 60 cents. A very neat book, containing a clear statement of the general rules recognized by writers of good English, and some differences in usage, with numerous illustrative examples taken from English classics. The work contains, also, concise directions for letter-writing and proof-reading.

THE PRINCIPLES OF ELOCUTION. By *Alexander Melville Bell, F.L.S., etc.* Braintree: Thos. Henderson; \$1.50.

Prof Bell is well known as the author of "Visible Speech," "Principles of Speech and the Cure of Stammering," "Standard Elocutionist," etc. He is the ablest living writer on the voice, its culture, management, etc. The work now noticed is the fourth edition of the book. It was first published in 1849. This edition is revised and enlarged. In addition to the theoretical portions there are a large number of choice extracts marked carefully for the guidance of the student in pronunciation, intonation, emphasis, gesture, and emotional expression.

APPLETON'S READERS. By *William T. Harris, A.M., LL.D.; Andrew J. Rickoff, A.M., and Mark Bailey, A.M.*

Messrs. Appleton never like to publish any work unless they can make it equal, if not superior, to the best of its kind. The rank of the authors of these Readers guarantees their excellence. Dr. Harris is Superintendent of Schools in St. Louis, Mr. Rickoff occupies a similar position in Cleveland, and Mr. Bailey is Professor of Elocution in Yale College. The mechanical execution of the books, paper, binding, typography, illustrations, etc., are so fine as to almost fit them for ornaments of a parlor table. The system of teaching advocated, and the new features introduced into them, will form the subject of an article in the Practical Department of the October number of the JOURNAL.

FIRST LESSONS IN GRAMMAR. By *Dr. Collier.* Edinburgh: Thos. Laurie, 6d. A very elementary grammar, introductory to the author's larger work on the same subject.

KENSINGTON SERIES OF LESSON BOOKS. Edinburgh: Thos. Laurie. These are readers, with lessons for spelling, arithmetic and writing interspersed. The poetical selections are more appropriate than those in many readers, and the prose lessons aim mainly to give information in an attractive form.

JOHNSTON'S ATLASES. London and Edinburgh: W. & A. K. Johnston.

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Johnston's maps and illustrations may be obtained at half price by School Boards at the People's Depository.

—We need to follow nearer to the footsteps of our fathers in respect to moral education. We may not ask to have the catechism restored to the school-room, but we ought to demand that children shall be taught the elements of a well-balanced, vigorous moral character; and be taught, also, that character is infinitely higher than scholarship. I know very well you may say that this is approaching debatable ground, and I understand the frequent declamation about sectarianism and the danger of invading the rights of individual conscience—all of which has nothing to do with the subject; for morals are not sectarian, and they who cannot teach morals, and exemplify their teaching by their daily lives, without teaching sectarianism, should never go within the shadow of a school-house,—except as pupils to a moral teacher. It behoves all concerned to remember well that the character and usefulness of the man or woman depend very largely upon the care and culture received in youth; and it is especially incumbent upon teachers to bear in mind the duties that devolve upon them by nature of their office, and for the performance of which parents and the public may hold them responsible.—*Supt. Stone, Springfield, Mass.*

IDEAS go booming through the world louder than cannon. Thoughts are mightier than armies. Principles have achieved more victories than horsemen or chariots.—*Rev. Dr. W. Paxton.*

Departmental Notices.

EXAMINATIONS OF DECEMBER, 1878, AND JULY, 1879.

LIMIT IN HISTORY AND LITERATURE.

I.—FIRST CLASS CERTIFICATES.

Examination in History, July, 1879—

General History—Freeman, chapters 1-5 inclusive.

Ancient History—Special and more detailed study of a particular period: History of Greece from the Persian to the Peloponnesian War, both inclusive.

Modern History—Special and more detailed study of a particular period: History of England; The Tudor Period.

English Literature for the First Class Examinations, July, 1879—

Shakespeare—Macbeth.

Milton—Paradise Lost, Books I. and II.

Johnson—Rasselas.

Macaulay—The Essays on Boswell's Life of Johnson, and Hallam's Constitutional History.

II.—SECOND CLASS AND INTERMEDIATE EXAMINATIONS.

The work prescribed in English Literature for the Second Class and Intermediate Examinations in December, 1878, is Book I. of Milton's "Paradise Lost;" and for that in July, 1879, Book II. of the same poem.

In History, the questions set for candidates for Second Class and Intermediate Certificates will be confined to the leading events of English and Canadian History, also of Roman History from the commencement of the Second Punic War to the death of Augustus.

In French, Chapters I. and II. of Emile de Bonnehose's Life of Lazare Hoche, may be substituted for the part of Souvestre, at present prescribed.

N.B.—In Bonnehose's Hoche, the whole of Part I. and Chapters 1 and 2 of Part II., are required for the latter half of 1878, if Souvestre is omitted.

In Latin, candidates may take Elogues I, IV, VI, VII, and IX. of Virgil, instead of the portion of the Æneid at present prescribed.

III.—THIRD CLASS CERTIFICATES.

The papers on English Literature, to be set for candidates for Third Class Certificates in 1879, will be based on the same selections as in July, 1878.

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