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# The Canada School Journal.

Vol. I.

TORONTO, JUNE, 1877.

No. 1.

REV. EGERTON RYERSON, D.D., LEDD

BY J. GEORGE HODGINS, LL.D.

"For a quite complete and admirably arranged Exhibition, illustrating the Ontario system of Education and its excellent results; also for the efficiency of an administration which has gained for the Ontario Department a most honourable distinction among Government Educational agencies."-Award of the American Centennial Commission, 1876.

Such was the gratifying tribute which a number of eminents American Educationists unconsciously paid to the distinguished founder of the Ontario system of Education, in estimating the results of his labours as illustrated at the Centennial Exhibition.

Although it is difficult to sketch, with freedom, the life and career of distinguished men, while living, yet it can, nevertheless, be done; and there are cases in which it is desirable and fitting that it should be done as fargas possible. Such a case is that of the Rev. Dr. Ryerson, whose official career as the founder of our Educational system was so honourably and successfully closed in 1876. The history of Dr. Ryerson's life and labours has yet to be written; but this cannot be done in the lifetime of the present generation. The conflicts of his noted and eventful career have been so many, and have been more or less so severe that it would be a difficult and delicate task just now to describe them, or to discuss the motives and proceedings of the principal actors with 'the judicial calmness which would give to such a work an impartial character. The materials are, however, abundant; and the writer of this sketch hopes

that it may yet be in his power, from his long and intimate knowledge of the facts relating to these events, to be able to perform this filial duty, and to do justice to the noble qualities, statesmanlike views and comprehensive grasp of mind of the distinguished man who, while yet in the vigour of a "green old age" has reared for himselt so enduring a monument as the public school system of Ontario, and his enshrined his name in the hearts and affections of his countrymen.

In seeking to account for the great success which has attended the labours of the late Chief Superintendent of Education, in founding our system of public instruction, it is desirable to enquire

plish: nent; but many a man of untiring energy and undoubted ability has failed, because he had overrated his own powers and had lacked tact and judgment in their exercise. Dr. Ryerson may have erred now and then in these particulars; but such errors were the rare exception and not the rule. He wisely laid down certain great principles which he believed to be essential to the success of his labours. These general principles may be thus summarized: 1. That the education of the people should be by themselves, and through their own agency; and that they should, therefore, be consulted in regard to all school legislation. 2. That the aid of the Government should only be invoked where it can most effectually stimulate and assist local effort in this great work. 8. That the property of the country is responsible for, and should

contribute towards, the education of the entire youth of the country. 4. That a thorough and systematic inspection of the schools is essential to their vitality and efficiency. These with other general principles, Dr. Ryerson kept steadily in view during the whole thirtytwo years of his administration of the school system of Ontario. Their judicious application has contributed largely, under the Divine Blessing, to the success of his labours.

The Reverend Egertou Ryerson, (or, as he was baptized, Adolphus Egerton Ryerson,) was born in the Township of Charlotteville, near Lake Erie, London (afterward the Talbot) District, (now the County of Norfolk) on the 24th of March, 1803. His father, Colonel Joseph Ryerson, a United Empire Loyalist in the British service at the time of the American Revolution, was born in New Jersey. He first joined as a radet, and was one of the five hundred and fifty loyal volunteers who went to

Charleston, South Carolina. For his good conduct in bearing despatches one hundred and ninety-six miles into the interior, he was promoted to a lieutenancy in the Prince of Wales' Volunteers by Sir Guy Carleton, (Lord Dorchester). Subsequently he was engaged in six battles, and was once wounded. At the peace of 1788 he was exiled, and went to New Branswick, thence to Canada—he and his family enduring very great hardship in penetrating into the interior of the then unbroken wilderness of Canada. He settled in Charlotteville, and lived there about seventy years. In the war of 1812 he and his three sons again joined the British standard, and acquitted themselves bravely. During his life he into the causes of that success. Energy and ability will do much held various appointments under the crown. He died in 1854, at in any great work, and they are essential to its successful accom- the venerable age of ninety-four years, after having enjoyed his



half-pay as a British officer for the unprecedented period of seventy | to establish the most efficient system of instruction; to elevate the years. Dr. Ryerson was the fourth son of Colonel Ryerson, and was named after two British officers who were intimate friends of his father. His youth was passed in his native country; and at its Grammar School he received the rudiments of his early education. With Mr. Law, the Master of the Gore District Grammar School at Hamilton, (at the head of Lake Ontario) he studied his classics. As the Grammer Schools were the only public schools at that time in existence in the country (and they had just then been ostablished) they were in the rural counties very elementary in their character, and did not profess to teach more than the mere rudiments of an English education. The young and ardent student, as Doctor Ryerson then was, (and has so continued during his life time) not content with the superficial knowledge of grammar which he obtained at school, prevailed upon his father to allow bim to go home for six months to attend a grammar class which had been established in the county town on that specific subject.

Doctor Ryerson's habits of study at this time were characteristic of his practice in after life. When at school he had entirely mastered the theory and principles of English Grammar, and had learned all the rules and explanations, and in fact nearly the whole book by rote, yet having no one to explain the theory or to apply the principles of the text-book, flexibility and power of the language. He also at the time prepared and wrote out a digest of Murray's English Grammar, in two volumes, Kame's Elements of Criticism, and Blair's Rhetoric and a Latin Grammar. He was an indefatigable student; and so thoroughly did he ground himselt in these and kindred subjects thus early in life and under most adverse circumstances, that in his subsequently active career as a writer and controversionalist he ever evinced a power and readiness with his tongue and pen which has often astonished those who were unacquainted with the laborious thoroughness of his previous preparation.

Doctor Ryerson's experience as a teacher did not extend beyond the Grammar School of his native county. At the age of sixteen he was appointed usher, or assistant teacher, to his eldest brother George, (who had received his training at Union College, Schenectady) and who had succeeded his brother-in-law, Mr. Mitchell, on his appointment by the Governor to the judgeship of the county. During the absence of his brother George, the charge of the school devolved upon the youthful usher. Having thus the management of boys and girls who were his companions, and many of them several years his senior, his firmness, tact, and decision were frequently put to the test, but he acquited himself well, and the experience thus gained was afterwards turned to higher account.

On his twenty-second birthday (24th March, 1825) Dr. Ryerson was ordained deacon in the M. E. Church by Bishop Hedding. His diary during the first year of his ministerial life shows how devotedly he applied himself to the culture of his mind, although his value often contained the chief part of his library, and the back of his horse frequently afforded him the only place of study. His first literary effort was put forth in 1826—being the review of Ven. Archdeacon Strachan's sermon on the death of Bishop Mountain, and it at once established his reputation as an able controversialist In 1828 he again wrote a series of letters criticising Dr. Strachan's famous chart of the various religious bodies. Both series were republished in pamphlet form. In 1829, the Christian Guardian was established and he was appointed its joint editor. In 1833 he went to England, and again in 1835. In the latter year he went to obtain a Royal Charter and subscriptions for "U. C. Academy," now Victoria College, Cobourg. He also induced the Home Government to recommend the Upper Canada Legislature to grant \$16,000 to the Academy, which it did against the wishes of Sir F. B. Head, the Governor.

In 1840 an Act of Incorporation was obtained from the then recently united Canadian Legislature, creeting Upper Canada Academy into a University under the name and style of the "University of Victoria College at Cobourg." Doctor Ryerson (who then received the title of D.D. from the Wesleyan University, Middleton,) was unanimously chosen its first President. In 1844, Doctor Ryerson was appointed Superintendent of Education for Upper Canada, by His Excellency the Governor General, with an understanding that he would re-lay the entire foundation of the system, and establish it on a wider and more enduring basis. The instructions which he received on his formal appointment were contained in the following words: "His Excellency has no doubt ture, and embodied in the amended Act. It provided, however, that you will lose no time in devoting yourself to devising such measures as may be necessary to provide proper school books; of school fees) should, as a condition of receiving the grant, be

character of both teacher and schools; and to encourage every plan and effort to educate and improve the youthful mind of the country; and His Excellency feels assured that your endeavours in matters so important to Western Canada will be alike satisfactory to the public and creditable to yourself." In 1846, he submitted an elaborate report on his projected system of public schools for Upper Canada. In the first part he stated and illustrated its general principles, the concluding fifty pages are devoted to the subject of the machinery of the system under the heads of "Kinds of Schools," "Text-Books," "Control and Inspection," and "Individual Efforts."

Notwithstanding the zeal and ability with which Doctor Ryerson had collected and arranged his facts, analyzed the various systems of education in Europe, (chiefly in Germany) and America, and fortified himself with the opinions of all the most eminent educationists in those countries, yet his projected system for this province was fiercely assailed, and was vehemently denounced as embodying in it the very essence of "Prussian despotism." Still with indomitable courage he persevered in his plans and at length succeeded in 1846 in inducing the legislature to pass a School Act, which he had drafted. In 1849 the Provincial administration favourable to Doctor Ryerson's views went out of office, and one unfavorable to him came in. The Hon. Malcolm Cameron, a hostile member of the cabinet, having concocted a singularly crude and cumbrous school bill, aimed to oust Doctor Ryerson from office, it was without examination or discussion passed into a law. Doctor Ryerson at once called the attention of the government (at the head of which was the late lamented Lord Elgin) to the impracticable and unchristian character of the bill, as it had formally excluded the Bible from the schools. The late Honorable Robert Baldwin, C.B., Attorney General (the Nestor of Canadian politicians, and a truly Christian man) was so convinced of the justness of Doctor Ryerson's views and remonstrance, that he took the unusual course of advising His Excellency to suspend the operation of the new act until Doctor Ryerson could prepare a draft of bill on the basis of the repealed law, embodying in it, additional to the old bill, the result of his own experience of the working of the system up to that time. The result was that a law passed in 1850 admirably adapted to the excellent municipal system of Canada, so popular in its character and comprehensive in its provisions and details, that it is still (in a consolidated form) the statute under which the Public Schools of Ontario are maintained.

There was one question, the agitation of which had for many years caused a good deal of disturbance to the school system, but which was set at rest in 1863. This question was the right of Roman Catholics to establish schools of their own, separate from the Public Schools, but nevertheless aided from the parliamentary grant for education, according to the average attendance of pupils at the schools. The principle of these schools was fully conceded in the first Canadian School Bill which was passed in 1841, the year of the legislative union of the provinces of Upper and Lower Canada. It was subsequently modified in 1843, 1847, and 1850, and (after much bitter agitation) in 1853, 1855, and finally in 1863. In the resolutions for the confederation of the British North American provinces, agreed to at Quebec by representatives from all of these provinces, and adopted by the Canadian Legislature in 1865, the right of the Roman Catholics in regard to these Separate Schools were confirmed as follows: "The local legislature of each province shall have the power to make laws respecting education; saving the rights and privileges which the Protestant or Catholic minority in both Canadas may possess as to their denominational schools, at the time when the confederated union goes into opera-

In 1858, after a good deal of delay and discussion, Doctor Ryerson prevailed upon the legislature to revise the Grammar School Law of the province, which had remained in the statute book accomplishing comparatively little good since 1807-1839. From then (in 1853) the principle of local taxation for these schools, as applied to the public schools, was not adopted by the logislature in regard to the Grammar Schools. For twelve years longer these schools continued to languish. In 1865 the Grammar School Law was still further improved, and a higher standard of education adopted; but as yet the principle of local toxation for the support

raised from "local sources," i.e., by rate, subscription, municipal twenty-five years. It shows what can be accomplished by the energy,

grant or otherwise.\*

In 1850, Dr. Ryerson, while in England, made preliminary arrangements for establishing the Library, Map, and Apparatus Depository in connection with his department, and in 1855 ho established Meteorological Stations in connection with the County Grammar Schools. In this he was aided by Colonel (now General) Lefroy, R.E., for many years Director of the Provincial Magnetical Observatory at Toronto. Sets of suitable instruments (which were duly tested at the Kew Observatory) were obtained, and shortly afterwards a few of these stations were established. In 1865, the law on the subject having been amended, twelve stations were selected and put into efficient working order. In 1857, he made his third educational tour in Europe, where he procured at Antwerp, Brussels, Florence, Rome, Paris, and London, an admirable collection of copies of paintings by the old masters, statues, busts, etc., besides various articles for an Educational Museum in connection with the Department. In 1858-60, Dr. Ryerson took a leading part in the discussion in the newspapers, and before a committee of the legislature, in favour of grants to the various outlying universities in Ontario. He maintained that "they did the State good service," and that their claims should be substantially recognized as colleges of a central university. He deprecated the multiplication of universities in the province, which would be the result of a rejection of his scheme. In consideration of his able services in this contest, the University of Victoria College conferred upon him the degree of I.L.D. in 1861. In 1860, he induced the Government to submit to the Legislature the draft of a Bill which he had prepared, after consultation at various County School Conventions, for the further development of the system of public instruction. This law very greatly improved the details of the system, and rendered its whole working more effective. In 1867, he made his fourth educational tour in England and the United States. On his return, in 1868, he submitted to the Government a very valuable "special report on the systems and state of popular education in the several countries of Europe and the United States of America, with practical suggestions for the improvement of public instruction in Upper Canada." He also made a separate "Report on In., "titions for the Deaf and Dumb and Blind in Various Countries." In 1868-70, he submitted drafts of Bills to the Government for the further improvement of the Public and High Schools. The matter was fully discussed before a large committee of the House of Assembly, and with a good deal of vehement heat in some public journals. In 1871, the Bill was at length carried through the Legislature by the Hon. M. C. Cameron, and has been the means of largely benefitting both classes of schools. The more important features of the Act related to the new system of county inspection and uniform examinations of teachers, besides provisions for greatly improving the High Schools. In 1874, further important amendments were made to the Act relating to Public and High Schools. The Acts thus amended were consolidated and otherwise improved in this year.

For many years Dr. Ryerson had felt that our rew political condition required a change in the management of the Education Department. He, therefore, in 1869 and 1872, urged upon the Government the desirability of relieving him of his arduous duties, and of appointing a Minister of Education in his place. Early in 1876 his recommendations were acted upon, and he retired on full salary from the responsible post which for thirty-two years he had so worthily and honourably filled. As to the estimate formed of his valuable labours, I shall quote the opinions of two gentlemen, viz.: Bishop Fraser, of Manchester, England, and the Hon. Adam Crooks, Dr. Ryerson's successor. In concluding his report on our Canadian Schools in 1865, Bishop Fraser says: "Such, in all its main features, is the school system of Upper Canada. A system not perfect, but yet far in advance, as a system of national education, of any thing that we can show at home. It is indeed very remarkable to me that in a country, occupied in the greater part of its area by a sparse and anything but wealthy population, whose predominant characteristic is as far as possible removed from the spirit of enterprise, an educational system so complete in its theory and so capable of adaptation in practice should have been originally organized, and have been maintained in what, with all allowances, must still be called successful operation for so long a period as

twenty-five years. It shows what can be accomplished by the energy, determination and devotion of a single carnest man. What national education in England owes to Sir J. K. Shuttleworth, what education in New England owes to Horace Mann, that debt education in Canada owes to Egerton Ryerson. He has been the object of bitter abuse, of not a little misrepresentation; but he has not swerved from his policy or from his fixed ideas. Through evil report and good report he has resolved, and he has found others to support him in the resolution, that free education shall be placed within the reach of every Canadian parent for every Canadian child."

Before giving the remarks of Mr. Crooks in regard to Dr. Ryerson, I insert the following particulars from the Report to which he refers. They show what a wonderful advance our school system has made under Dr. Ryerson's administration from 1844 to 1875. In this connection I may say that few of the present generation can realize, not only the low status, but the positively inert condition of the Province in educational matters when the Rev. Dr. Ryerson took charge of the Department, thirty-two years since—m 1844. Men who were fit for no other occupation were considered just the men to teach school; and houses which farmers of the present day would not erect as out-buildings on their farms, were considered as the ideal country school-house.

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<sup>\*</sup>In 1876 the principle so long contended for by Dr. Ryerson, was adopted by the legislature on the recommendation of Hon. Mr. Crooks, Minister of Education, and the County Councils are hereafter to make a grant to the High Schools of a sum equal to the legislative grant.

Mr. Crooks, in concluding his report for 1875, says :- " During that year all these matters were under the control and supervision of the Reverend Dr. Ryerson; and this Report may be considered as a further testimony to the vigour and success of his long administration of thirty-one years; recording, as it does, the operations of the last complete year of his educational labours, and showing a further stage in advance in our educational progress. My best efforts will be directed to secure and perpetuate the advan tages which were gained for our system by the late Chief Superintendent after many concroversies and discussions.'

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## The Canada School Journal.

PROF. R. DAWSON, Belleville

J. J. TILLEY, Inspector Public Schools, Durham.

#### TORONTO, JUNE, 1877.

Under the conviction that an educational journal of a high class and devoted to the promotion of education in every part of the Dominion has been for a long time a desideratum, and is now a necessity, the publishers of the CANADA SCHOOL JOUR-NAL have undertaken to supply the generally admitted want In entering the field just described, they have no new depart ure of a startling character to announce. It will be their presistent aim to make the JOURNAL as perfect in all its depart ments as possible, trusting that their efforts will meet with the appreciation of the great teaching fraternity and prove not entirely unacceptable to even the general reader.

It is intended to make the JOURNAL as much as possible the organ of the teachers themselves, and with this end in view

contributions and communications on subjects connected with practical education are carnestly solicited. As our space is comparatively limited we must take this early opportunity of impressing upon intending contributors the absolute necessity of sending articles of only a reasonable length. Brevity is the soul of a good many other things besides wit.

A leading feature in the JOURNAL will be the Provincial Departments. The educationists of each Province have been hitherto prevented from becoming acquainted with the educational systems of the other Provinces on account of the want of a medium of communication between them. This want we propose now to supply, and we hope to be able to do so in such a way as to confer a decided benefit on all who are engaged in the great work of teaching. The interchange of ideas between different Provinces can hardly fail to be useful, and should tend to produce one homogeneous system of education extending from the Atlantic to the Pacific.

Each number of the JOURNAL will contain the portrait of some one prominently connected with the work of education, accompanied by a brief sketch of his life and labours.

The Mathematical Department will be conducted with a view to aiding the readers of the JOURNAL in acquiring a practical knowledge of the science rather than carrying on discussions more curious and recondite than useful. Original problems and solutions from practical teachers will be cordially welcomed.

The publishers intend adding a department of answers to correspondents in search of information on matters connected with school work. In this also utility will be kept constantly in view, and therefore only such questions should be asked as call for answers interesting to the whole profession.

In conclusion the publishers trust to be able to issue a journal which will be a welcome visitor to every school and the fireside of every teacher in the Dominion. To this end neither trouble nor expense will be spared, and they confidently appeal to the profession for that hearty co-operation without which no periodical of the kind can possibly be successful.

#### THE NEW SCHOOL ACT.

It is by no means easy to obtain a clear idea of the precise effect of the School Act passed during the recent session of the Ontario Legislature. The Act is an amending one, and not till the amendments for which it provides are incorporated with the text of the present law will it be possible for the majority of those interested to ascertain how far the latter has been modified. In order to do so just now the reader must take the Act of 1874 and the Act of 1877 and peruse them together, inserting the amendments for himself in the proper places. As this is a task from which even the most patient may well shrink, it is

to be hoped that the work of consolidation will be proceeded with as rapidly as possible in the interest of all who have anything to do with school matters. To trustees, especially, is the early completion of the work an absolute necessity. They are constantly dealing with business details covered by the new amendments, and as it is always difficult for men whose time is largely taken up with other matters to cultivate a sufficient acquaintance with the law they have to obey, the work of simplification cannot be commenced a moment too soon or carried any too far.

As a matter of course the various School Acts will be consolidated with a view to their insertion in the General Consolidated Statutes of the Province. It is intended also, we believe, to issue the various classes of statutes in separate parts, and of course the School Law will be so published. We would respectfully urge upon the attention of the Minister of Education, however, the necessity of issuing along with the Act all the Regulations passed under its authority which are at present in force. Many old Regulations have been repealed or superseded as new ones conflicting with them have been adopted, and it is a difficult matter for either teachers or trustees to separate the living from the dead law for themselves. Let the Regulations be consolidated and published in the same volume with the Act, and with the addition of reports of School cases decided in the courts, many of which are of quite as much importance as any part of the law. In this way a manual may be obtained which will put it in the power of every official of average intelligence to tell with all but unerring certainty what his duty at any particular juncture really is.

Of the changes made in the law by the Act of last session we cannot here speak at length. One of the most important and far-reaching is the alteration in the mode of examining and training teachers which it contemplates. Henceforth all candidates for Provincial certificates, second class as well as first, will be examined directly by the Central Committee, while steps are to be taken to utilize the Provincial Normal Schools for training purposes only, and to establish county training schools for the use of third-class candidates. The work of scholastic preparation will in this way be thrown very much on the High Schools and the advanced classes in Public Schools, both of which will be all the better for having to undertake it. The utilization of the intermediate High School examination in connection with the examination for second and third class candidates is also a step in the right direction, since it simplifies the whole system and imparts a value to the intermediate which it did not formerly possess. If it were possible to raise the intermediate standard high enough the matter would become still more simple, but at present the scheme adopted by the Central Committee and noticed elsewhere, is as much as can be accomplished. It is worthy of note, in this connection, that the clause of the new Act which empowers the Education Department to declare the equivalents for the High School examinations in the examination of Public School teachers, also gives it authority to arrange with learned socie. ties, such as universities, the Law Society, the College of Physicians and Surgeons, and the like, "for similar subjects in certain examinations and for reciprocally accepting such exam-

inations." We should like very much to see an effort made by the Department to induce the Law Society and the Medical Council to accept the intermediate in lieu of the whole or a part of their own matriculation examinations. If such an arrangement could be effected a great boon would be conferred on High Schools and High School Masters all over the Province. We are glad to notice that Victoria University has moved in this matter of its own accord, and has accepted the results of the intermediate at a fair valuation. The step is one which the authorities of Victoria will have no cause to regret, and which other universities will soon be compelled to take if they do not wish to see her halls peopled with students at their expense.

### THE ONTARIO TEACHERS' CONVENTION.

The annual meeting of the "Ontario Association for the advancement of Education" will be held during the third week of August, commencing on Tuesday in the theatre of the Normal School, Toronto. As its name indicates all friends of education may become members and take part in its deliberations. The great object of the association is not so much to discuss methods of teaching, as to consider the most important questions connected with the general educational institutions of the province. The relations of Public to High Schools. the programme of study in them, teacher training, teachers' certificates and how to grant them, methods for securing better attendance in schools, municipal school administration, school ventilation: these and many other questions of a similar nature are taken up, and carefully considered. In fact the details as well as the general principles of the educational system, especially the new features introduced into it, are discussed with a view of making suggestions as to its more efficient or more equitable working. The association has not a standing which gives its decisions any legal force, but care is always taken to lay the results of its deliberations before the Minister of Education. These results are valuable as they contain the views of the leading members of the great body of practical educators on the vital educational questions of the day. It has been urged by many, that there should be more attention paid by the association to institute work; that more good would result from explanations and illustrations of the principles of teaching, than from the discussion of questions of administration. It is of the utmost importance not only that all teachers of every grade who are coming into this profession, should be carefully trained; but that all those who are already engaged in teaching should be kept thoroughly alive to the progress which is being made in connection with their work. The former work will in future be effectively carried on by the Normal Schools and County Model Schools; the latter must be accomplished by local associations with the assistance, it is to be hoped, of regular county institutes conducted under the authority of the Education Department. The provincial convention can not fully accomplish this work. Only a small number comparatively can attend it, and they, as a rule, are those who least need to take part in institute work. Methods of teaching are not entirely overlooked, however. They are discussed in the Public School section of the association, which meets in the forenoon of each day during the Convention.

As already indicated the annual convention is really an educational parliament, and it has been suggested that on this account it should consist of representatives selected by local associations. There is some force in the suggestion, and it will doubtless, at no distant day, form an interesting subject for the consideration of the convention itself. If the association is to be formed as heretofore of all who choose to attend its meetings, it is certainly a serious question, whether it would not be wiser to change the place of meeting annually.

The next convention promises to be a very interesting one. The programme prepared by the Executive Committee will be given in the July number of the JOURNAL.

-There seems to be an impression prevalent amongst many teachers that under the new School Act the quarterly payment of salaries by trustees will be compulsory. This is a mistake. All that the Act does is to empower trustees to borrow money for the purpose of paying the teacher's salary at least quarterly, if there are not sufficient funds on hand to enable them to do it without borrowing. As Public School teachers have suffered very much in the past from the non-payment of salary until the end of the year, they would do well, whenever they can accomplish it, to have a clause providing for quarterly payment inserted in their agreements with school boards. Trustees, too, will find in the long run that prompt payment is to the advantage of the section no less than of the teacher. Before long it will be a difficult matter to secure the services of an efficient teacher without making some provision of this kind. Heretofore the inability of trustees to raise the necessary tands without taxing the section a year in advance, has stood in the way of a much needed reform, but now that this inability is removed competition will probably do the rest.

—Readers of the Journal will be pleased to learn that the work of preparing for its pages answers to the Examination Papers for this year has been entrusted to thoroughly competent persons, and that the publication of answers to questions and solutions of problems will commence as soon as possible. after the midsummer examinations are over.

#### PASSING EXAMINATIONS.

The object of an examination is to find out what a candidate knows of a given subject. The examiner selects about ten questions from different parts of the subject, and from the answers given to these he is expected to estimate the knowledge of the different candidates. The examination must necessarily be limited to a short time, and it is of great importance to the candidate that he should make the most of it. To enable those unfamiliar with examinations to do this, the following hints may be found useful:

1. In preparing for an examination, write out as much as possible of the work.—Writing is a much more effectual mode of study than reading. Let a student write out from a book several times any difficult proposition, and he will find that he has gained more knowledge of the proposition than he could have gained in a much work before the proposition than he could have gained in a much the method copy. By longer time spent in merely reading it. The method of writing you are far which appears slow and laborious, is in reality an important in doing it.

economy of time and labour. In studying Euclid, for instance, write out a proposition from the book, then write out the same proposition and carefully compare with the book. In this way you will gradually acquire Euclid's style. Time is an important element in an examination. When you have learned to write out a proposition accurately, learn to write it out rapidly. You should write out a proposition of Euclid in ten minutes. Many can do it in a much shorter time.

- 2. Write about the question before you, and not about something else.—No knowledge, however correct, if it does not bear directly on the question, can be taken into account. When a candidate writes very little about the question, and very much that is foreign to it, the examiner will conclude that he knows but little about it, and that he is simply trying to hide his ignorance by a show of knowledge. For example, the following question is asked, "Sketch briefly the history of the Long Parliament." The candidate writes very fully about the Civil War, gives the victories of Oliver Cromwell in chronological order, and concludes with a pathetic account of the execution of Charles I. Such an answer is not what the examiner wanted, and of course, he gives no credit for it whatever. It is worse than no answer at all. It shows that the ignorance of the candidate is compound. He is not only ignorant of the question, but is not even aware of his ignorance.
- 3. Let your answers be short and to the point.—Of course your answer must be sufficiently long to express what the question requires, but the fewer words beyond that the better. Reading examination papers is not amusing work, and no examiner wishes to read more about a question than is just sufficient to answer it. Never solve a question by two methods. You will only get credit for one, no matter how many you may put down. You will not be heard for your much speaking. Clearness of statement is of the utmost importance. Many an answer that has contained much correct matter, far more indeed, than enough to have answered the question correctly, has been marked low, or perhaps received no marks at all, simply because the examiner could not unravel the mystery in which the candidate had involved his answer.
- 4. On receiving the examination paper read it all over carefully once or twice before you begin to write. - On first reading the paper you may, perhaps, think that there is not a question on it, that you can answer. This is the result of mere nervousness. On considering it for a short time you will find that light will begin to dawn upon you. Take the casiest question you can find on the paper and write the answer to it as carefully and as quickly as you can, then the next easiest, and so on till you have done them all, or until you can do no more. You will find that towards the end you will be able to understand and explain what at first appeared altogether incomprehensible to you. There is no more constant source of failure at examinations than the attempt often made by candidates to answer in order the question on an examination paper. In this way he is frequently brought in contact with the most difficult question first, puzzles over it till ha mind gets into the state of that of young Dombey who was not certain whether it was twenty pennyweights made one ounce, or twenty Romuluses made one Remus.
- 5. Give the full work of each question, and do the work on the paper you are yoing to hand in to the Examiner.—The examiner wants to see the method by which you obtained the result much more than the result itself. Even if your final result is wrong, but the method of obtaining it be correct, he will give you credit for what you have done, which he could not do unless he had the full work before him. Never work on a slate or slip of paper and then copy. By this method you lose more than half your time, and you are far more liable to make mistakes in copying the work than in doing it.

6. Generally speaking, write the answer to each question on a separate page. - By doing this you will be able to arrange the question in order when you have finished. Fasten the sheets together at the left hand corners. Do not leave the examination room till the time is up. If you cannot do any more questions read over what you have done. You may detect and correct mistakes. Do not sit up late the night before the examination to cram. Study but little during the examination week. All that you may learn in this way will do you more harm than good. You will be tempted to write too fully on what you have so recently learned, and your mental vigour will be seriously diminished. Five or six hours a day in the examination room is quite sufficient for most persons without additional reading or study.

7. Attend carefully to the style of your Answers .- "Dress does not make the man" says the old proverb, to which some person adds, "Of course not, but when he is made he looks much better by being dressed up." Style does not make the answer, but when it is made it certainly looks much better by being dressed up. When you find a complicated mathematical question on an examination paper, you may be sure that there is some easy method of solution. If you cannot find such solution leave the question to the last. Examiners set questions to test your knowledge of principles not your ability to do mere mechanical work.

By attending to the above hints candidates will not find it necessary to conclude their papers by stating for the information of the examiner, that they could have done every question had there only been sufficient time, but they will leave the room with the feeling that they have made the most of both their knowledge and their ability.

#### HIGH SCHOOL INTERMEDIATE EXAMINATIONS.

The following letter from the Head Master of the Cobourg Collegiate Institute to a contemporary, explains itself. Our only apology for inserting it is the admirable and effective manner in which the writer deals with a very important question .- ED. SCHOOL JOURNAL.

To the Editor of the Queen's College Journal.

SIR.-In your article on the Education Bill recently enacted, you seem partly to misapprehend the position lately taken by Victoria University, in reference to her accepting, as an equivalent for matriculation work, that required for passing the Intermediate Examination. You say:
"We observe that Victoria University has already made her

martriculation work accord with the programme of study in the lower school, and that students who have passed the intermediate are not required to submit to an entrance examination excepting

in one subject, namely, Greek."

After reading the above, one would naturally infer that Victoria has lowered her standard of admission, in order "to make her matriculation work accord," etc.; whereas the change has been effected without making the entrance examination any less exacting than hitherto, as will appear on a careful comparison of the two courses

of study.

In Classics, the Intermediate requires, of such as take this option, Latin Grammar, Casar, Book V; Virgil, Ameid, II, vv. 1-300, with exercises in prose, and translation into Latin of passages from Cæsar. This includes the regular pass-work for matriculation at Victoria, except Greek, and the remaining 500 lines of Virgil, on which a special examination must be passed by such as present a certificate of having passed the Intermediate. There is, therefore, no reduction in Classics under the present arrangement.

In English and Mathematics, the work required at the Intermediate is generally acknowledged to be quite as comprehensive and difficult as that demanded for Junior Matriculation at any of our Universities. The only subject omitted is Grecian History; but Victoria requires a separate examination on this subject. In other words, as is stated in her circular, the Intermediate Certificate is accepted pro tanto, and I think no humiliating compromise has been made by the change offected.

The students whom Victoria proposes to receive are Upper School pupils: they become so the moment they pass the Intermediate; and it is only then that they receive the certificate which Victoria recognizes. Your avowal, therefore, of willingness "to admit Upper School students to the rank of undergraduates on their showing that they possess some knowledge of Greek," places you on precisely the same footing as Victoria-with this difference in her favour, that she demands, besides Greek, Grecian History and the balance of the second book of Virgil, or a corresponding amount

The position taken by Victoria is one which it is likely other Universities and learned societies will ere long assume, as is contemplated in the Act referred to. The recent changes of conformity to the High School course by Toronto University also point in the direction indicated.

A word as to the effect of such an arrangement. I cannot agree with you in your conclusion that, if such a course is generally adopted, it would turn our High Schools into "mere cramming machines." I maintain that the very opposite effect would follow. Consider, for a moment, the necessary condition of a High School -particularly one with a limited staff of teachers-undertaking the task described above by the Inspectors. Is it reasonable to suppose that in the regular cr uniform course proposed, there would likely be the same amount of hurried and superficial preparation? Decidedly not. But you may reply, "Certainly there would be; for, by passing these candidates at the Intermediate, the school becomes entitled to share largely in the Legislative Grant.' I would reply (not taking into account the question of classificatio referred to) that your objection will hold good against ordinary matriculation also; for this Act wisely provides that we are to be rewarded for efficient work in sending our pupils to matriculate in any University or before any learned society. Moreover, there is no greater chance of success for a student of immature preparation before our Board of Examiners at Toronto, than before the Examiners of our various Universities. The character of the examination papers, the selection and grouping of test-subjects, and the impartial rejection of all who do not reach the required standard, act as a wholesome terror to all students who depend on a "cram," while they prove a powerful incentive to every ambitious student and conscientious High School teacher to rest satisfied with nothing short of thoroughness in preparation.

In a word, the course adopted by Victoria simply recognizes the fact that our various educational institutions-from the primary school to the University-are parts of one system, -a system of which our High Schools and Collegiate Institutes form an essential and integral part; that upon the efficiency of our primary and secondary schools very largely depends the success of our Universities; that there is no surer means of securing this efficiency than by receiving their work at its current value—thus conferring a well-merited boon on our High School teachers, and simplifying our complicated means of supplying our Universities from their natural feeders, the secondary schools of the country.

As an alumnus of Victoria and a friend of Queen's, I sincerely trust that in these times of test and transition, wisdom may prevail in our councils, and such plans be adopted as shall at once place our Universities in harmonious operation with the general educational system of the country, and lead to their greatest efficiency and usefulness.

> Yours very truly, D. C. McHenry.

Cobourg Collegiate Institute, March 17th, 1877.

#### EXAMINATION PAPERS IN ARITHMETIC.

To the Editor of the Canada School Journal.

Sir,-Having received several letters from teachers and inspectors enquiring whether a certain work advertized by a person in Baltimore (Ont.) is the same as The Examination Papers in Arthmetic, prepared by Mr. Kirkland and myself, I wish to state through your columns, that the work referred to is not the same, and that I have never, even.

it to the teachers of the country.

I am, sir, yours truly,

J. A. McLellan. and that I have never, either directly or indirectly, recommended

Toronto, 13th May, 1877.

## Practical Education.

HOW TO TEACH DRAWING IN PUBLIC SCHOOLS.

BY JAMES HUGHES, INSPECTOR PUBLIC SCHOOLS, TORONTO.

CAN ALL PUPILS BE TAUGHT TO DRAW? A great many teachers say that the ability to draw is "a natural gift which cannot be acquired by those who are not born with it." This opinion, if given by teachers of training and experience, who are capable of teaching the subject, would have some weight; but the evidence of all such teachers in all countries goes unmistakably to prove that "every sane and physically sound person is able to learn how to draw." The reason that so many regard it as a natural gift is obvious. In most schools where pupils have been allowed to draw, they have merely been supplied with copies and told to imitate them. A few years ago writing was taught (?) exactly in this manner, and in many schools there is no improvement even now. Every teacher who thus neglects to teach writing, says "the ability to write is a natural gift, &c." If, under such circumstances, a pupil does learn to draw or write respectably, the teacher is forced to the conclusion that his ability must have come to him naturally. How else could it come? The teacher knows very well that it was not communicated or developed by him; and, lest he might be held responsible for the failures of the many, he wisely takes no credit for the success of the few, but shirks all responsibility in the matter. Such a course is highly improper. It is unjust to the capacities of the pupils and the pupils themselves. This is shown to be true by the fact, that in schools where writing is taught on correct principles the pupils in the highest classes often write so much alike, that it is difficult for any but a practised eye to distinguish the penmanship of one pupil from that of another. A uniformity of excellence nearly as surprising may be secured in the work of a class in drawing, if the subject is properly taught. If pupils, when studying arithmetic or grammar, were treated in a manner similar to that indicated above, the ability to acquire a knowledge of these subjects would be "a natural gift" also, and one possessed by a small number, when compared with those who have a gift for drawing or writing. The principles of drawing are as definite as those of arithmetic, and no more practice is needed to secure a ready application of a principle in the one case than in the other. All pupils cannot become artists of great merit, neither can they all become mathematicians of a high order. To become an artist a pupil requires special genius; to learn to draw it is only necessary that certain ideas be fixed clearly in the mind, and the eye and hand trained to transfer these ideas to paper.

Who Should Teach Drawing? Perhaps nothing has done so much to prevent the successful introduction of this subject into public schools as the idea, that no one but a skilled artist is able to teach it. This is a great mistake. There would be very few teachers in any country if a similar principle was carried out in connection with the other subjects taught in public schools. If, for instance, no one but a great mathematician were allowed to teach arithmetic there would be very little arithmetic taught, and the probabilities are that little would be badly taught to junior pupils. The best and most experienced special teacher of drawing in America-Mr. Walter Smith, of Boston-says: "I have had under my continued observation for a long period some classes in schools which have been taught by their own teachers, and other classes taught by visiting teachers. From practical experience I prefer that the teaching of drawing should be undertaken by the regular school-teachers themselves, not only because it is more economical for the public, but because it is the only possible way to reach every child in the make a certain principle in writing, it has to practice that principle

schools, and secure the most efficient instruction as well." teaching a drawing lesson it is not so necessary to be able to present a finished picture to a class, as to be able to explain the principles in connection with it. The construction or guide lines, and where to draw them; the parts to sketch first; the comparative measurements, and how to make them; the lines which should be light and those which should be heavy; those which should be similar in length, direction, or curve, and the best means to adopt in order to secure the required similarity; the convergence or divergence of certain lines, and the reasons for their so running; the fact that lines of equal length in any object must be represented by lines of different lengths in the drawing, and the reasons for these differences: these are the points which pupils should have clearly impressed on their minds before they commence to draw any subject, and in impressing these and similar ideas it is necessary to be a teacher, not an artist.

NECESSITY FOR A MANUAL OR TEXT-BOOK IN DRAWING. NO teacher can teach any subject except he has a knowledge of its principles. These principles may be learned from a living teacher or from books. All teachers have not received instruction in even the elementary principles of drawing. Hence the necessity for a good Manual on this subject, containing not only simple explanations of the principles to be taught, but also specific and complete directions as to the method of teaching them. This indispensable requisite has been supplied by the gentleman above named. He has published three Manuals-Primary, Intermediate, and Advanced. The Intermediate is best adapted to the requirements of the Public Schools of Ontario. From this book any practical teacher can obtain all the information concerning principles and methods necessary to enable him to teach drawing as he does any other subject.

MISTAKES IN TEACHING DRAWING. 1. Neglecting to Teach Elementary Principles. The ability to draw does not depend on m re hand skill. It is of much greater importance to have clear ideas in the mind regarding the subject to be drawn. A good deal of teaching should be done in drawing before the pupils attempt to draw at all. Object lessons in drawing should be given in the junior classes, to familiarize the pupils with the technical terms used in drawing, such as vertical, oblique, and horizontal lines; curves of different kinds, and geometric figures. A very little child will readily learn the names of these figures, if the teacher clearly presents them on the black-board. It has to learn the names of hundreds of things between the ages of two and four years, and it will learn the name of a triangle or an ellipse just as readily as the name of a cupboard or a table, or any other article, if the triangle or ellipse be placed properly before it. Of course, no teacher of any thought would try to teach geometrical definitions to little children. What is necessary is that they understand clearly the meaning and application of the terms used.

2. Teaching the same subjects to all irrespective of their age and advancement. "The great secret of teaching drawing well is the grading of the exercises, so that no element necessary to the understanding of it shall be left out, no exercises be unreasonably difficult or a heavy tax upon the pupils, and every iresh example contain some new feature of interest or vary an already familiar subject. Many, if not all, of the difficulties arising in the teaching of this subject will, on close scrutiny, be found to proceed from a teacher's first taking up the middle of the subject instead of the beginning, or the pupil being required to do work involving a knowledge of preliminary exercises which he has had no opportunity of acquiring."

8. Want of practice in the elements. When a child is taught to

ple until it can make it readily and accurately. At the very least it must write it on every line of a page of its copy-book. In drawing, however, it is the custom to be satisfied with one attempt to produce a certain form after the method of drawing it has been explained. A pupil is shown how to draw an ellipse, for example, and when he has drawn one, however imperfectly, another copy is given. No one can make a complete drawing well, except he can draw its elemental parts with ease. The power to do this can only be secured by extensive practice.

GENERAL DIRECTIONS FOR CONDUCTING A DRAWING LESSON .-Position of the book .- The drawing-book should lie square in front of the pupil. It may be turned around occasionally to enable him to criticise his work, or when drawing in certain directions the curved shading lines of a sphere.

- 2. Position of the body. The body should be kept in an easy position, with the head a little farther from the book than when writing. The right arm should be perfectly free to move readily in any direction.
- 3. Holding the pencil. The pencil should be held about an inch and a half from the point. Small children may allow the fingers to come nearer to the point. The hand may be turned into different positions for drawing lines in different directions.
- 4. Construction lines. These are guiding lines intended to help the pupils to fix more easily and more definitely the relative proportions and positions of the various parts of a drawing. They should be very faint, dotted or discontinuous lines, so that they may be readily erased.
- 5. Trial lines. All lines in a drawing should be drawn so lightly at first that they can barely be seen. If the first trial line is in the wrong position, draw another and another until one is in the proper position. This line should be made dark and definite, and then, but not till then, the other trial lines should be erased.
- 6. Erasing. Some teachers allow altogether too much erasing to be done. When any part of a drawing is definitely "lined in ' it should not be erased. Pupils should not be allowed to make too many erasures even of "trial lines." The rubber should have a clean edge and should never be moistened. Even perspiration from the hand will unfit it for use.

Eye and pencil. When drawing "trial lines" the pupil should not watch the point of the pencil, but the point to which the line is to be drawn. When "lining it" the eye should accompany the point of the pencil.

8. Correction of Errors Correct only one error at a time. If too many errors be pointed out to the pupil at once, he is certain to be confused and likely to be discouraged. In some drawings devote special attention to form, in others to lining, etc.

In the next number of the JOURNAL the subject of drawing will be continued and practical hints given in connection with Blackboard Drawing Lessons, Memory Drawing, Dictation Drawing, and Model and Object Drawing.

## **M**athematical **Beyartment**.

Communications intended for this part of the Journal should be on separate sheets, written on only one side, and properly paged to prevent mistakes.

#### ARITHMETICAL AND ALGEBRAIC SOLUTIONS.

By J. A. McLellan, M.A., LL.D.

#### ARITHMETIC.

yard measure which was I of an inch too short, his entire gain being \$124.80. Find the cost price of the cloth, and the amount gained by using the false measure.

Take cost price as unit. Then he has 25 % = 1 fair gain. He gains  $\frac{3}{4}$  inch on  $35\frac{1}{4} = \frac{1}{47}$ , on which he also gains 25 %.

 $\therefore \frac{1}{47} + \frac{1}{4} \text{ of } \frac{1}{47} = \frac{5}{188} \text{ fraudulent gain.}$ And total gain =  $\frac{1}{1} + \frac{5}{188} = \frac{1}{47} \text{ of cost} = \$124.80; \text{ and } \therefore$  cost = \$451.20. And fraudulent gain = \$12.

2. A merchant in Montreal owes another in Lisbon 16234 milrees, and he resolves to remit through London, Amsterdam, and Paris; exchange between Montreal and London is at 91 %, between London and Amsterdam £1 stg. for £135 Flemish, between Amsterdam and Paris £1 Flemish per 13 francs, and between Paris and Lisbon 3 francs per 450 rees; if the expenses of this circuitous course be 2½ %, what will it cost the Montreal merchant to settle his Lisbon account? (1000 rees = 1 milree.)

We have one milree =  $\frac{20}{3}$  francs, 1 franc =  $\frac{1}{13}$  Flem. £, 1 Flem.  $\pounds = \frac{39}{74}$  Eng.  $\pounds$ , 1 Eng.  $\pounds = 40 \times \$1.095$ , and \$1 debt =  $100 \div 97\frac{1}{2}$  actually paid (since expense =  $2\frac{1}{2}$  %, or  $97\frac{1}{2}$  is paid with 100):  $\therefore 1623 \%$  milrees  $= \frac{20}{3} \times \frac{1}{13} \times \frac{39}{74} \times \frac{40 \times 1.095}{9} \times \frac{12987}{8} \times \frac{100}{100} \times \frac{10$  $\frac{40}{39}$  = \$2190.

- 3. I bought a hind and a fore-quarter of beef weighing together 252 lbs., paying 71 cents per lb. for the hind quarter, and 51 cents per lb. for the fore-quarter; I found that I had paid 171 cents more than if I had bought both quarters at 6% cents per lb. Find the weight of each quarter.
- 6g is the average of the two prices; if both quarters had been bought at this rate, every pound of hind quarter would have cost g cent more, and every pound of fore-quarter & less than was actually paid. And .: if the qrs. had been of equal weight, the cost would have been the same; but the cost was 174 cents more, ... the hind (dearer) qr. was heavier by  $17\frac{1}{4} \div \frac{7}{8} = 20$  lbs., and (252)  $-20) \div 2 = 116$  the lighter qr.; 136 the other.
- 4. A person invests a certain sum in U. S. 5's 10-40 and 7010 % more than that sum in U.S. 6'2 5-20, the former being at a discount of 5 %, and the latter at a premium of 8%, and the interest on both payable in gold. His income from the two investments is \$1400 in gold. Find the amount invested in each kind of bonds.

 $70\frac{10}{19}\% = \frac{67}{95}$ , ... for every unit of the first investment there is  $1\frac{67}{95} = \frac{162}{95}$  of the second.

The 1st is at disct. of 5, ... 95 brings 5 income, and 1 brings 35. The 2nd is at prem. of 8, ... 108 brings 6 income, and 1 brings 8 a.

And 
$$\frac{162}{95}$$
 brings  $\frac{162}{95} \times \frac{6}{108} = \frac{9}{95}$ :

 $\therefore \frac{5}{95}$  to  $\frac{9}{95} = 5:9$  is ratio of income from the investments;

or \$500 and \$900 respectively: (1) \$5 income comes from \$95, ... \$500 from \$9500; and (2) \$6 income comes from \$108 ... \$900 from \$16200.

1. Solve 
$$\frac{16x-13}{4x-3} + \frac{40x-43}{8x-9} = \frac{32x-30}{8x-7} + \frac{20x-24}{4x-5}$$
.

The solution of this equation by the ordinary rule for "clearing of fractions, &c.," will involve a good deal of work; but if we 1. A retail merchant bought a quantity of Canadian tweed and | complete the divisions represented by the fractions, the work will be marked it at an advance of 25 % on cost, and in selling it used a | very easy. For the sum of the integral parts of the quotients in

the left hand member = sum of do. in right, and thus only the remainders need be considered. We have, therefore, at once

$$\frac{2}{8x-9} + \frac{2}{8x-7} = \frac{1}{4x-5} + \frac{1}{4x-3}, \text{ or }$$

$$\frac{32x-32}{(8x-9)(8x-7)} = \frac{8x-8}{(4x-5)(4x-3)}, \text{ of which } 8x-8 \text{ is a factor };$$

$$\therefore 8x-8 = 0, \text{ or } x = 1.$$

The remaining expression  $64x^2 - 128x + 60 = 64x^2 - 128x +$ 63 has no finite root, as indicated by the disappearance of the coefficients of x2 and x. The coefficient of x4 also disappeared. Hence of the four roots which the biquadratic may be regarded as having, x = 1 is the only finite one.

The above method will be found a labor-saving process in the solution of all similar equations, whether simple or quadratic.

2. Solve 
$$\frac{x-a}{b+c} + \frac{x-b}{a+c} + \frac{x-c}{a+b} = 3$$
.  
We have  $\frac{x-a}{b+c} - 1 + \frac{x-b}{a+c} - 1 + \frac{x-c}{a+b} - 1 = 0$ ; or  $\frac{x-(a+b+c)}{b+c} + \frac{x-(a+b+c)}{a+c} + \frac{x-(a+b+c)}{a+b} = 0$ , of which  $x-(a+b+c)$  is a factor  $\therefore x = a+b+c$ .

3. If  $ax^2 + bx + c$ , and  $a'x^2 + b'x + c'$  have a common factor, shew that this factor is  $x + \frac{a'c - ac'}{a'b - ab'}$ .

Let x - m be the common factor; dividing each of the expressions by x = m, the remainders = 0; i.e.,  $am^2 + bm + c = 0$ ,  $am^2$ +h'm+c'=0;  $m^2+\frac{b}{a}m+\frac{c}{a}=0$ ,  $m^2+\frac{b'}{a'}m+\frac{c'}{a'}=0$ ; subtract :  $\left(\frac{b}{a} - \frac{b'}{a'}\right)m + \frac{c}{a} - \frac{c'}{a'} = 0$ , and  $m = -\left(\frac{c}{a} - \frac{c'}{a'}\right)$  $\frac{1}{a}\left(\frac{b}{a}-\frac{b'}{a'}\right), \quad x-m=x+\frac{a'c-ac'}{a'b-ab'}$ 

4. Show without actual multiplication that  $(a+b+c)^3 - (a+b+c)^3$  $(b+c)(a^2-ab+b^2-bc+c^2-ac)-3abc=3(a+b)(b+c)(c+a)$ 

Problems of this kind can be solved by the principle that if x, a factor of a given quantity, is put = 0, the quantity vanishes, and conversely if, when x = 0 in a given quantity, the quantity vanishes, then x is a factor of it.

Putting a+b=0 (i.e., a=-b) in the given expression, it becomes = 0, a+b is a factor, b+a, c+a, are also factors, since the expression is symmetrical with respect to a, b, and c. .. (a+b)((b+c)(c+a)) is a factor. Is there any other factor? There can be no other factor that is a function of a b c, because the given expression is of three dimensions, and the factors already found give a quantity of three dimensions; but there may be a numerical factor, n suppose, so that the given expression = n(a+b)(b+c)(c+a). Since n is numerical, it is independent of a, b, c; putting a = b = c = 1, we have  $(1+1+1)^2 - 0 - 3 \times 1 \times 1 \times 1 = n(2) \times 1$  $(2)\times(2)$ : or 8n=24 : n=3.

In some questions, to find the numerical factor, we must take DIFFERENT values for the letters (a, b, c), as a = 1, b = 2, c = 3, &c.

## Notes and News.

#### ONTARIO.

Peterboro is to have another ward school.

The teachers of the County of Elgin have subscribed \$100 for the purchase of a professional library.

German is to be introduced as a branch of study into the Stratford Public Schools.

The Uxbridge High School Board has agreed to pay \$5 to each pupil passing the next intermediate examination.

The average attendance at Aylmer High School is 34 and is

rep: ted as rapidly increasing.

The Brantford graduates of the Toronto University propose forming themselves into an Alumni Association.

At a recent meeting of the Belleville School Board a resolution

was adopted requiring the teachers in the city schools to refrain from keeping the pupils in after hours.

The town council of Barrie has memoralized the Minister of Education with a view to securing the establishment in that town

of one of the county training schools.

The number of pupils on the register of the London Public Schools during April was 2,755, of whom 1,453 were boys. The average attendance was 2,012 pupils of whom 1,078 were boys.

It has been decided by the Minister of Education that where a

Township Council has passed a valid by-law for exempting a manufacturing establishment from taxation, such property is not liable to school rates.

At a recent teachers' convention in Essex a vote of thanks was passed to the Minister of Education "for the deep interest he evinces in the educational welfare of this Province. vote of thanks was passed to J C. Patterson, M.P.P.

At the last quarterly meeting of the Elgin Teachers' Association. Mr. Millar was elected President, and Mr. T. Leitch, Corresponding Secretary. A highly practical programme was gone through in a spirited manner.

The official report of the High School Inspector on the state of Thorold High School has been published. The accommodation is described as good, the organization satisfactory, and the progress The inspector makes a note of the lack of apparatus.

The Minister of Education has decided that Roman Catholic Separate School trustees have no power to make a valid legal mortgage of the School property either directly or indirectly.

From a recent decision of the Minister of Education, it appears

that the Department may authorize any publisher to print the authorized series of reading books without paying anything to the original publishers. The country at large will enjoy the benefit of the consequent competition.

By an Order in Council, George Edgcumbe, B.A., late Head Master of the Elora High School, has been adjudged guilty of such immorality as to become disqualified from holding the position of a Head Master, and his certificate has been revoked and cancelled. Mr. Edgcumbe's offence was marrying a second wife in Canada while he had only a United States divorce from his first one.

The Picton High School has not for sometime been very cordially supported by the County Council, and for this amongst other reasons there is some talk of allowing it to become extinct. Under the new law it will probably be easier to find the necessary pecuniary support than formerly, and a little perseverance would probably place it beyond danger. It is not desirable to have any county without at least one High School.

At the request of the Charman of the Central Committee of Examiners it is announced in the Journal of Education "that communications or certificates, examinations and other matters relating to the work of the Committee, should be addressed to the Education Office, and not to individual members of the Committee, as the Committee does not desire to receive any letters except such as may be referred to it by the Department.

Judging from present appearances London will soon have a High School of which it will have no reason to be ashamed. Permission has been granted by the Department of Education to sell the old Grammar School site, provided the funds are applied to the erection of a new High School, and it is probable that the Dominion Government will grant a part of the artillery grounds as a site. London has been far too long in moving in this matter, but it is never too late to mend, and in all probability progress will now be rapid.

An Essex grand jury has thrown out the indictment brought against Mr. Sinclair, the head master of the Wind or High School, by the father of a boy who had been chastised in the school. The case created a good deal of excitement, and the result seems to have given general satisfaction. It is not good for either the boy whose case is thus publicly discussed nor for the school to which he belongs to have his part taken in this way. Parents are not always the best judges of the merits in such cases.

The High School entrance examination takes place this year on the third and fourth of July. The intermediate, and those for

first and second class teachers commence on the ninth of the same month. The examination for third class teachers begins on the sixteenth. On the subjects common to the two programmes the papers for second class and intermediate will be the same, but a higher percentage of marks will be required for the former than for the latter. An option will be allowed between the English Literature paper for the intermediate and the Botany and Physiology paper for second class.

The Minister of Education has decided, in connection with a case

of suspension appealed to him, that the children of Roman Catholic parents have a right to remain in the School-room during the opening and closing religious services though they refuse to conform to the rule respecting posture. In other words, they may remain seated when the rest of the pupils are called upon to stand during

the time for devotional exercises.

In order to put a step to the irritation arising from the difficulty of ascertaining who are Public School supporters and who are supporters of Separate Schools, the new School Act makes it the duty of each Municipal Council to cause the Assessor and Collector to distinguish them by different columns on their rolls. Municipal Councils will hereafter have to collect Separate as well as Public School taxes, provided the Separate School trustees elect to avail themselves of the new law rather than of the provisions of the Separate School Act, and notify the Clerk of the municipality to that effect.

The Minister of Education, while pressing upon trustees the necessity of enforcing the compulsory clauses of the School Act, adds that "More may be done by personal visits of trustees, by argument and persuasion, than by actual resort to legal proceedings, but these are imperative under the Act when a milder course proves useless." In cases of continued neglect on the part of parents the trustees should require no urging to set the law in motion for the sake of the public as well as of the children.

It is not an uncommon practice for school boards to impose a small weekly or monthly fee on pupils to pay for the use of books and stationery supplied by the trustees. A fee of ten cents per month having been imposed for this purpose in Brantford, one ratepayer objected and appealed to the Minister of Education, who has decided that school boards have by law the power to impose such a fee; that when it is imposed each pupil must pay it whether he uses the books thus provided or not; that the fee can be collected in advance; and that the trustees have a legal right to exclude from school until the fees is paid any pupil refus-

ing to pay it.

The following provisions of the law are very often neglected.

They are important and should be enforced. Non-compliance with them is punishable, with fine: A copy of the minutes of every meeting (annual or special) signed by the Secretary and chairman must be sent to the Inspector of Schools. Clerks of Townships are also required to inform the Inspector of all business done by their respective councils, which has any reference to School Sections or Schools. They are in addition required to prepare a map of their respective Townships, showing the boundaries of all the School Sections. This must be posted up in the office of the Clerk, and a copy of it sent to the County Council.—Journal of Education.

Alma College, St. Thomas, has entered on a new and, its friends hope, successful career. Although incorporated under the auspices of the Methodist Episcopal Church, it is intended to be thrown open to young ladies of all denominations who desire a liberal training. If the Home Journal speaks by the card, the founders of the institution can hardly be accused of aiming too low. We are told that "the first and immediate object of Alma College will be to provide for the young ladies who may become students within its walls as liberal an education as University College, Toronto, now provides for the young men of the Dominion. This first object -this feature of primary importance—once made a thorough succer, the Senate or Board of Management can take up the question of adding thereto a Boys' College." It will probably be a long time before this rese-coloured picture becomes an accomplished fact, but none the less on that account do we commend the people of St. Thomas and the Conference of the M. E. Church for their enterprise and praisworthy ambition. There are few places in the Province as well adapted for becoming the seat of a successful college as the rising town of St. Thomas.

From the annual report of Mr. Platt, P. S. inspector, to the

salary for male teachers being \$375, and for females \$245. total number of teachers employed was 85, and amongst these there were 28 changes during the year. In some localities nearly all the schools changed teachers, and only 21 of the teachers, less than one fourth, had held the same situations for more than one The schools were kept open a fair average period and the attendance, though by no means good, was not quite so bad as it has been in many other counties. The average was 45 per cent. of the aggregate, a slight improvement on 1875. The inspector complains in strong terms of irregularity in the attendance, which he affirms to be the greatest evil against which schools have to contend, and attributes it to the indifference of parents, lack of enthusiasm and skill on the part of the teacher, and neglect of duty on the part of trustees, who in many instances neither look after the school premises nor do anything in the way of enforcing the compulsory clauses of the School Act. In connection with this latter charge it is worthy of note that 239 children between 7 and 12 attended school less than four months. Two school houses were burnt during the year, three erected and seven repaired. Eleven sites were enlarged, and many others improved. Only 16 libraries are reported but nearly all the schools are supplied with

inaps, globes and clocks.

If all schoolboys were animated with the spirit of the boy who penned the following letter to the London Free Press there would be little reason to complain of the want of shade trees around

school grounds :-

(To Mr. Free Press.)

DEAR SIR,—I am a little boy who now goes to Talbot-street School, but I hope soon to be raised to the Union School; and, as I see by the papers, different suggestions to beautify the grounds by planting trees on the outside, and where they may be required on that beautiful site, but there seems to be a delay which no person can properly explain. Almost every little boy and girl that goes to school has a money-box to save what little presents they may get. If only one-third of the scholars who go, not only to the Union but to the Ward Schools, would purchase a single tree, and present them to the Trustees or Board of Works, I think they would have them planted. I am sure, if such a plan would be adopted, there would not only be sufficient for the school grounds, but enough to plant all necessary for Victoria Park. I feel satisfied any trees presented to the Park Committee they would gladly have them placed in proper position. And to show how excuest I am in the matter, if the Trustees will accept from me and my little sister, purchased from my money-box, four horse chestnut, or other suitable trees, to be planted on the north, south, east and west corners, I shall let them have them in an hour's notice. If each boy and girl would look after his own tree, or that presented, how pleasant it would feel in a few short years to observe how much good the little he had done to embellish what now almost is only its name the Forest City. adopted, there would not only be sufficient for the school grounds, much good the nous account only impame the Forest City.

Respectfully yours,

ALBERT SMITH. London, April 24, 1877. 445 Richmond-st. The Hamilton Times gives the following account of the recent inspection of the Collegiate Institute in that city. The inspection was by Dr. McLellan and occupied nearly three days :- " He gave most attention to the higher classes in classics, mathematics, and modern language; he also spent some time with a class practicing chemistry. In his remarks at the conclusion of the examination, he characterized the work done, the organization and the general arrangements of the school as vory satisfactory. The present cause of study presented for high schools and collegiate institutes, with the regulations affecting the entrance and intermediate examinations, seemed to press hard on some schools, and many of them in consequence of this are now asking for but one intermediate examination in the year; but he observed no unusual strain here, and he was sure that this school would still keep the fore-most place at these examinations. He then referred in a very humorous way to the kind of instruction formerly given in arthmetic in the Canadian schools, and compared it with the intelligent manner in which teachers now presented the subject to their pupils. He considered the mathematics of the school exceptionally good; he was also pleased to see the superior way in which classics were taught, and the French prose composition he considered very well done. From the practical way in which the sciences were taught he was sure this department would not be neglected. A very County Council of Prince Edward, we learn that the total expendince noticeable feature of the Institute, he observed, was the spirit of ture for school purposes during last year was \$34,830. Of this carnestness which seemed to pervade the whole school, and this sum \$24,500 went in payment of teachers' salaries, the average element entered as a very important factor, into the successful working of the Institute. He concluded his remarks by referring in flattering terms to The Quarterly, a periodical connected with the school, and asked that the rest of the day should be given to the pupils. He was listened to by the pupils assembled in the Examination Hall with close attention, rad was repeatedly cheered by the pupils assembled in the them.

by them during his remarks."

The annual report of the Inspector of Public Schools in Toronto shows that rapid progress is being made in educational matters in that city. The number of pupils registered during the year was 9,799. The average daily attendance was 5,976. The attendance twas much better than in any previous year. There were 32,990 fewer cases of absences in 1876 than in 1875, and 26,976 fewer cases of lateness. The increase in the attendance at the schools has been very rapid. In 1856 the average registered number was 2,318, the daily attendance. 1,747; 1866, the average registered number was 3,139, the daily attendance, 2,309; 1876, the average registered number was 6,912, the daily attendance, 5,976. The registered and average attendance have thus been more than doubled during the past ten years. There are 122 teachers in the employ of the Board. Thirty were added during 1876. These teachers hold certificates as follows:—First-class, Provincial, 45; first-class County Board 19; second-class, Provincial 58. No third class teachers are employed. A very large increase was made during the year in the amount of school accommodation. The Wellesley and Givens street schools were enlarged; the former by the addition of eight rooms, and the latter by the addition of two rooms. Besides these, the Ryerson and Dufferin Schools, each containing twelve rooms, were erected. The new buildings are a credit to the city, as public buildings. Great care was taken in their erection to have them thoroughly ventilated, and fitted up in accordance with the modern improvements in school architecture. The internal arrangements, blackboards, cloak rooms, assembly rooms, &c., are very complete and convenient. 700 single and 1,300 double desks were procured during the year. The cost of maintaining the schools was \$60,456. This was \$6.17 per child, on the basis of the registered number, and \$10.13 on the basis of average attendance. ance. Perhaps the most encouraging feature in connection with the working of the schools is the fact that the number of classes in the 4th and 5th books was increased during the year from 13 to 26, without reducing the numbers in each class.

#### QUEBEC.

The Montreal Gazette thus describes the inspection to which the schools in this Province have been accustomed in the past; if the change of system brings about a more satisfactory state of affairs we shall be happy to announce it :- Take the description of his first inspection given us by one of our leading academy principals. It was somewhat as follows: "A gentleman once suddenly entered my school whom, by dryness of appearance, primities of attire, and air of immense but polite superiority, I recognized as my Inspector. He approached my desk, making three bows on the road. He uttered a swift sentence in French. I blushed to the roots of my hair and incontinently replied 'Wee.' He then turned his back on the boys; opened his little bay, took out a little comb, combed his whiskers and moustache, and finally put on a black hat or cap of indescribable shape and uttered another short sentence or long word in French, waved his hand and took a chair. I examined the boys in geography. After awhile he waved his hand again and I took history. He then rose, said little, waved his hand much, put some expensive books by second-rate authors in my hands, packed up his cap, put on the unofficial hat and withdrew with more elaborate bowing than ever." We do not believe this to be overstated. But more remains untold. Will it be believed that some fifteen years ago an Inspector used to distribute prizes by letting the pupils stick pins into the Bible held edgewise, and the first lucky competitor whose pin point ran against an "a" received the prize? Will it be credited that another Inspector to this day sends on to the teacher three weeks ahead the questions he intends to ask, and asks them when he comes? Notice is too often given everywhere of the Inspector's coming visits, prizes are given on general impressions and not in accordance with any well-defined system of marks; nay, it is whispered that the children of the household who "put up" the Inspector mostly turn out the cleverest in the sohool and get most prizes.

The Protestant and Roman Catholic Boards of Sherbrooke have institution once meffected in a perfectly amiable and satisfactory manner a division of the school property in that town between them. The division ance to warrant it took place under the new School Act of last session, and takes effect on the 1st of July. The Protestant Board will soon have to closed altogether.

provide additional accommodation.

It is stated that Mr. Masten, Principal of the Coaticook High School has been re-engaged at a salary of \$1,200 with three assistant teachers.

#### NEW BRUNSWICK.

The School Law of this Province exacts from teachers an oath to the effect, amongst other things, that they are not in the habit of using unauthorized text-books. This oath some of the St. John teachers decline to take, and the city School Board has backed them up in their refusal. At a conference between the teachers and the Provincial Superintendent, it was elicited that some had doubts as to what a "text-book" really was, and it certainly is not quite so easy to define as some might imagine. The matter is still unsettled and will probably remain so till the Legislature repeals the oath clause, which it should hasten to do.

The St. John School Board is opposed to such a rigid system of uninformity in the matter of school regulations as would leave the city trustees without any discretion in many important matters, such as the arrangement of school sessions. On purely local questions the members of the Board think themselves more competent to decide than the members of the Provincial Council, and the prevailing opinion seems to be that if the free, non sectarian character of the school system is not endangered a great deal of latitude might safely be allowed to local boards.

#### NOVA SCOTIA.

The school expenditure of Halifax for 1877, is expected to reach \$80,000. There is a prospect of having a High School at an early date

Rumours have been for sometime in circulation respecting the condition of the Education Department of this Province, not at all to its credit. The Superintendent of education is now openly charged with such misconduct as ought to secure his prompt dismissal from office, if the charge can be made good. He is said by the Halifax journals to have admitted "giving and offering to give examination questions before the date of examination, to candidates, and to others for candidates." If so it is difficult to see how he can be retained.

#### PRINCE EDWARD ISLAND.

Education has for a long time been in a backward condition in this Province, and, under the impression that at least part of the blame for this state of affairs was fairly chargeable to a defective school law, the Legislature has just passed a new Act, which makes many sweeping changes in the system. The law is thoroughly non-sectarion and appears to be very elaborate in its details—too much so, we should say, for llexible working. Many of its provisions are of a character similar to our Departmental Regulations, and to those accustomed to our own simple and comprehensive Act, the plan of leaving minor details to be dealt with by the Department, seems the preferable one. It is to be hoped that the Act will effect all, and more than all the good expected from it.

#### MANITOBA.

The Provincial Government have notified the Winnipeg School Board that the educational grant will be withheld unless immediate steps are taken for the erection of a new school building, the old one having been condemned by the Inspector as unfit for school purposes. The money intended for a new market building has in consequence of this threat been diverted from its original purpose and devoted to making the required provision for school accommodation

The controversy between the advocates of a sectarian school system and its opponents, continues with unsbated zeal.

#### BRITISH COLUMBIA.

When the present school system was organized in this Province in 1872 the number of schools was only 10, while now it is over 40,

giving employment to 60 teachers.

The Victoria Colonist recently published a batch of official correspondence respecting the internal condition of the Cache Creek Boarding School. Gross immoralities have been discovered amongst the pupils, and the consequence was a demand for the abolition of the institution. The School owed its existence to the sparseness of the population in that locality, and if there was any good ground for having such an establishment at all some means might surely have been found of repressing the evil and placing the institution once more in a healthy condition. It is, however, to be converted into a Day-School provided there is a sufficient attendance to warrant its continued maintenance, the boarding principle being discontinued. If the attendance proves too small it will be closed altogether.