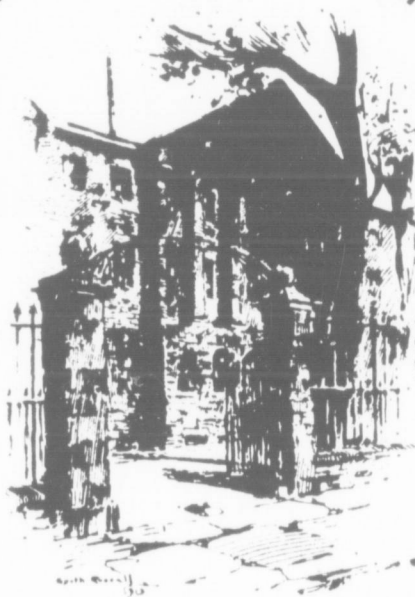


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ANNUAL REPORT

OF THE

TEACHERS' ASSOCIATION.

MINUTES.

Rev. G. M. GRANT on "The Improvement of Education in  
Nova Scotia."

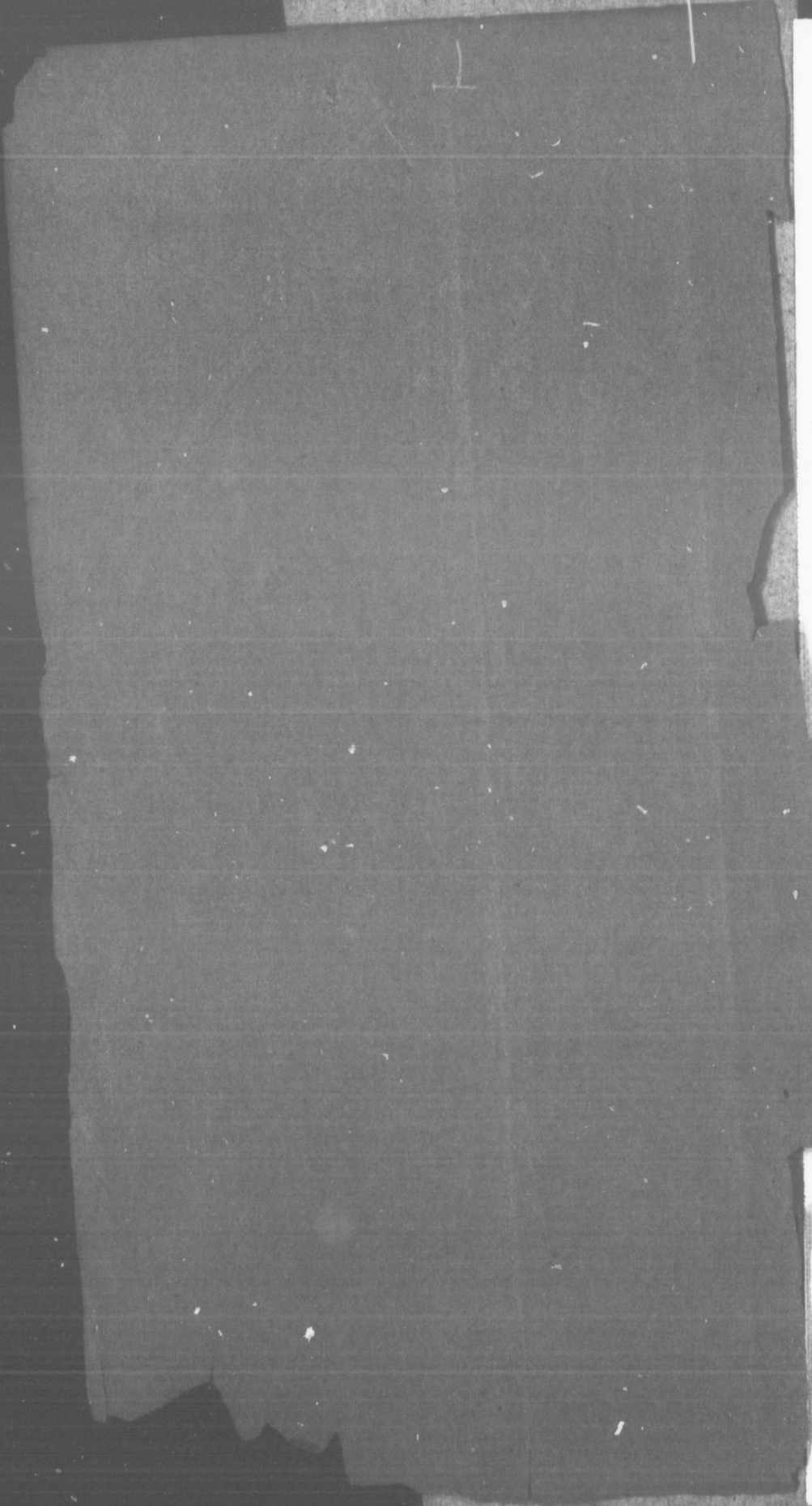
Mr. A. H. McKAY on "Mathematics."

Rev. C. B. PITBLADO on "Our School System."

HALIFAX, N. S.:

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FOWLER & PATRICK PRINTERS, HOLLIS STREET.

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**OFFICERS FOR 1873.**

**President.**

A. McN. PATTERSON, Horton.

**Vice-Presidents.**

H. CONDON, Yarmouth.

F. W. GEORGE, Amherst.

**Secretary.**

D. M. STERNS, Halifax.

**Committee of Management.**

A. H. McKAY, Elmsdale.

J. S. HUTTON, Halifax.

G. J. RICHARDSON, Halifax.

C. S. PHINNEY, Paradise.

D. McDONALD, New Glasgow.

HENRY REID, Wallace.

JOHN GRIERSON, Halifax.

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# REPORT.

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The Educational Association of Nova Scotia met, according to announcement, on the evening of December 30th, 1873, at 8 o'clock, P. M., in Dalhousie College, Halifax.

The programme was as follows :—

## PROGRAMME:

*Hours*—10 a. m., to 12.30; 3 to 5.30 p. m., and from 7.30 to 9.30 p. m.

### FIRST SESSION—TUESDAY, 8 P. M.

OPENING ADDRESS by the President, A. McNUTT PATTERSON, Esq., M. A.

Address by Rev. Geo. M. Grant, M. A., on "What can be done to improve Education in Nova Scotia."—Discussion.

Motions and Notices of Motion.

### SECOND SESSION—WEDNESDAY.

10 A. M.—Enrolment of Members.

Local Reports of Educational Progress, (five minutes speeches.)

Paper, by A. H. McKay, B. A., on "Mathematics."—Discussion.

Paper, by F. W. George, M. A., on "Arnold of Rugby."

### THIRD SESSION.

3 P. M.—Address by Rev. C. B. Pitblado, on "Our School System."—Discussion.

Paper, by a Lady Teacher, on "Teaching of Arithmetic."—Discussion.

School Inspection—the What and the How.—Discussion.

### FOURTH SESSION.

7.30 P. M.—General Business.

Address, by Burnthorn Musgrave, Esq.

Discussion—What is the best Constitution for a Council of Public Instruction?

Report of Managing Committee.

Election of Officers.

### FIFTH SESSION—THURSDAY.

10 A. M. to 12 noon.—The Teacher's Difficulties—Discussion.

Illustrations of Deaf Mute Instruction.

General Business, Votes of Thanks, &c.

CLOSING OF CONVENTION.

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### RULES OF ORDER.

- 1.—That the Minutes be read after the opening of each Session.
- 2.—That none but members be allowed to vote on any question. That none but members be allowed to speak on any subject except by permission of the President.
- 3.—That Resolutions be submitted in writing when requested.
- 4.—That no person speak more than once upon a subject without permission from the President.
- 5.—That Speakers' names be announced to the meeting by the President.

On motion of Mr. George, seconded by Mr. Grierson, the President, A. McN. Patterson, took the chair. The meeting was then opened with prayer by the Rev. Mr. Saunders. The President, after a few introductory remarks, introduced the Rev. G. M. Grant, who read a well prepared, racy, and most practical address on "What can be done to improve Education in Nova Scotia?" In the course of a few preliminary remarks, Mr. Grant said it was often his misfortune, in his public addresses, to tread on somebody's corns, and perhaps he might do so in this instance. He would say, in defence of himself, that such was not his intention, but that he endeavored to keep his subject in mind without giving the thorns a thought. He then proceeded with his address. (See Appendix A.)

A short discussion followed, in which Rev. Dr. Sawyers, of Acadia College, Mr. Musgrave, and Dr. Clay took part.

Mr. George then moved a vote of thanks to the lecturer, and also that he be made an honorary member of the Association. This was seconded by Mr. Hutton, and passed unanimously.

The President next made a few remarks, after which Mr. George gave notice of motion to adopt an address to the Lieutenant-Governor, and also several resolutions in reference to necessary improvements on which they were all agreed, together with a resolution re-affirming certain points in our System.

Mr. Higgins, Principal of Acadia College, having asked, for the benefit of strangers present, "what constituted membership," answer was made by the President that the payment of fifty cents by gentlemen, and twenty-five cents by lady Teachers, was all that was necessary.

The meeting then adjourned till 10 o'clock, A. M., of next day.

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WEDNESDAY, 31st Dec., 1873,  
10.15 o'clock, A. M.

Fifteen minutes having been allowed for the enrolment of members, the President took the chair. The meeting was then opened with prayer by the Secretary.

The minutes of last meeting read and approved.

Mr. George then moved the adoption of an address to His Honor the Lieutenant Governor, a draft of which he read. Mr. A. H. McKay seconded the adoption of the address which had just been read. Passed unanimously.

It was moved by Mr. Hutton, and seconded by Mr. Higgins, that the President and Officers of the Association, the Principal of the Normal School, the Principal of the Horton Academy, and as many members of the Association as could attend, be appointed

a committee to wait on His Honor the Governor and present the address. Passed.

The Secretary was instructed to communicate immediately with the Governor's Secretary and ascertain, through him, when it would be convenient for His Honor to receive said deputation. Mr. Hutton kindly attended to this important duty, and informed the Association that the deputation would be received by His Honor at 2.15, P. M., that day.

Local reports were then heard from Mr. Calkin, Principal of the Normal School; Prof. Higgins, of Horton Academy; Mr. A. H. McKay, of Pictou; Mr. George, lately of Cumberland; Mr. Elderkin, of Yarmouth, and others.

Mr. A. H. McKay, of Pictou Academy, then read an excellent paper on "The Teaching of Mathematics." (See Appendix B.)

Discussion followed, in which Messrs. Higgins, Elderkin and Calkin took part.

Mr. Calkin then moved that the thanks of the Association be tendered to Mr. McKay for his very able and interesting paper, and that he be requested to place the paper in the hands of the President for publication. This was seconded by Mr. MacCabe, and passed unanimously.

Mr. Hutton moved that, as the hour for adjourning had nearly arrived, Mr. George be asked to read his paper on "Arnold of Rugby" this evening, previous to the discussion on "What is the best Constitution for a Council of Public Instruction," instead of this morning, the time appointed for it. This was seconded by Mr. Wilson, and passed.

Meeting adjourned at 12.30 till 3, P. M.

At 2 o'clock, P. M., the deputation appointed to present the address to His Honor the Lieutenant Governor, met at the College and proceeded to Government House, where they were received by His Honor; and, after being introduced by the President, the address was read by the Secretary. To which His Honor replied that, on account of the shortness of the notice, he had not had time to prepare a formal reply, but would do so as soon as possible. He, however, in an informal address, very sympathetic and flattering, thanked the Association for the honor conferred upon him, and said that it was not likely that in his declining years he would depart from principles he had so strenuously advocated in his more active life.

#### WEDNESDAY, 3 o'clock, P. M.

The Convention resumed. Vice-President, Mr. George, in the chair. Meeting opened with prayer by Dr. Clay. Minutes of last meeting read and approved.

The Chairman then introduced the Rev. Mr. Pitblado, who read an able and exhaustive paper on "Our School System." (See Appendix C.)



A discussion followed, in which some very pertinent remarks were made by Dr. Clay, Prof. Higgins and Rev. Mr. Saunders.

The following are a few thoughts from the several speakers, in reference to the religious aspect of the School question. The question of conscience being an acknowledged difficulty, how shall we meet it? Shall we modify our system, or treat the matter of conscience as only a sham? Is it better to continue contending for the Free School idea or seek something that will give to each his separate field?

The lecturer replied that we must leave conscience alone until, under cover of conscience, men commit crime. What we offer by our Free School system is instruction to all without aggrieving conscience. We leave conscience free, and so guard our system as to teach positive error to no one.

A vote of thanks to the Rev. lecturer for his very excellent paper, was then moved by Mr. Patterson. In moving this vote, Mr. Patterson asked, "What can we do to give life to our Educational System, or shall we sit down and let it go to ruin?"

Mr. Hutton, in seconding the resolution, alluded to the fact that the family was the proper place for religious training; but yet the teacher, if he is a truly conscientious man, as he ought to be, will not suffer his lips to be sealed, or his hands tied, in relation to any subject which he considers of vital importance.

Mr. George then read a paper on the "Teaching of Arithmetic," which had been prepared by a lady teacher. Mr. Higgins moved, and Mr. Hutton seconded, a vote of thanks to the lady who prepared the paper. Passed.

Mr. Calkin proposed, and Mr. MacCabe seconded, that the Rev. Mr. Pitblado be made an honorary member of the Association. Passed.

Moved by Mr. A. H. McKay and seconded by Mr. Higgins, that Mr. Parsons be made an honorary member of the Association. Passed.

Mr. Pitblado, in thanking the Association for the honor conferred upon him, hoped that he would prove something more than a mere honorary member.

Mr. Parsons spoke of the deep interest he had always felt, and hoped he always would feel, in the cause of Education in his native Province.

The subject of "School Inspection" was then opened by the President, and remarks made by Messrs. Calkin and Campbell. The principal points alluded to were that, while the duty of the Inspector should be to gather statistics and report as to the condition of the schools, there was a yet more important duty of instilling life and activity into Schools and Sections where there was deadness and lack of interest.

The meeting adjourned at 5.30 o'clock till 7.30 o'clock, P. M.

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WEDNESDAY, 7.30 o'clock, P. M.

Convention resumed. Vice-President, F. W. George, in the chair. The meeting was opened with prayer by Mr. Grierson. Minutes of last meeting read and adopted.

The Chairman then introduced Burnthorn Musgrave, Esq., who entertained the meeting with some very interesting and profitable remarks, alluding chiefly to the "use of the Bible in our Schools," and "thoroughness in teaching." He concluded by exhorting teachers to look up to God for help, and then look down to the bottom of every subject, that we may become thorough masters of it.

Mr. Hutton moved that the thanks of the Association be tendered to Mr. Musgrave for his address.

Mr. Parsons, in seconding the resolution, spoke at some length on the necessity of thoroughness in teaching. Resolution passed unanimously.

The Chairman then read the formal reply of His Honor the Lieutenant Governor to the address presented to him this P. M. (See Appendix, D.)

It was moved by Mr. Parsons, and seconded by Mr. Smith, that the address to the Lieutenant Governor, and his reply, be engrossed on the minutes. Passed.

Mr. Calkin then took the chair, and Mr. George read his paper on "Arnold of Rugby."

It was moved by Mr. Hutton, and seconded by Mr. Higgins, that the thanks of the Association be tendered to Mr. George for his interesting paper, and for so kindly filling up the gap in the programme. Passed.

It was moved by Mr. Hutton, and seconded by Mr. Higgins, that the subject on the programme for discussion be passed over, and that the Association proceed at once to the report of the Managing Committee, and the election of Officers. Passed.

Mr. George then read the report of the Managing Committee, as follows:—

*Mr. President and Fellow Members,—*

Your Committee beg to report that, in conformity with the resolution of last annual meeting, the selection of time and place of the present meeting was the first matter to be determined on. They had no difficulty in coming to a conclusion on these points, owing to the new regulation adopted by the Council of Public Instruction as to the examination of teachers in the summer vacation, which rendered it almost impossible to meet at any suitable time except the Christmas holidays.

The members of your Committee, in several parts of the Province, but especially those resident in Halifax, have done what in them lay to secure as many speakers and papers as would fully occupy the time and fulfil the objects and purposes for which we

assemble The following gentlemen were unable, for various causes, to comply with the request of your Committee to lecture, or otherwise entertain the Convention :—Prof. Allison, Sackville; Rev. D. M. Welton, Windsor; J. B. Calkin, Esq., Principal of Normal School; J. A. MacCabe, Esq., Normal School; Edward Owen, Esq., Lunenburg Academy and a Lady Teacher, Halifax. But the printed programme shows that we have been highly favored; and we hereby express our cordial thanks to the speakers for their able services. We desire also to express our gratitude to the Press for repeated and ample intimation of our meetings; and to the Senate of Dalhousie College for the use of the room.

All of which is respectfully submitted.

JOHN GRIERSON, *Chairman of Com.*  
GEO. J. RICHARDSON, *Secretary.*

Mr. Higgins moved, and Mr. Calkin seconded, that the report be received and adopted. Passed.

The election of Officers for the ensuing year was then proceeded with, resulting as follows:—

A. H. McKay, B. A., Pictou, *President.*

F. W. George, M. A., Pictou, }  
J. W. Elderkin, Yarmouth, } *Vice-Presidents.*

J. A. MacCabe, Truro, *Secretary and Treasurer.*

A. McKay, Dartmouth,  
R. J. Wilson, Halifax,  
Prof. Higgins, M.A., Horton,  
Miss Kate Miller, Halifax,  
Miss Amelia Archibald, Hx. } *Managing Committee.*

Meeting adjourned at 9.30, P. M., till 10, A. M., next day.

THURSDAY, 1st Jan'y., 1874.  
10 o'clock, A. M.

Convention resumed. Vice-President, F. W. George, in the chair. Meeting opened with prayer by the Chairman. Minutes of last meeting read and approved.

After some discussion on each of the following points, the Association expressed their approval of them.

1. That the number of County Academies in the Province be reduced to about four, with an efficient staff of teachers for each.
2. That the number of Inspectors be reduced to about seven, and that they be selected from the teaching profession.
3. That it would be advisable to have compulsory education for at least five months in the year for children between the ages of six and thirteen.
4. That it would be for the benefit of education if Grade E be discontinued for the future.
5. That no distinction of sex be recognized in reference to the name of Grade or payment of same.
6. That the mode lately adopted for distribution of the Provincial Grant is, to say the least, injudicious.

The Treasurer then read the financial statement, showing a deficit of sixty-six cents. Several other ladies and gentlemen enrolled themselves as members, and paid their fees, altering the account to balance on hand of one dollar and nine cents. The account was, on motion, received and adopted.

It was moved and seconded that Dr. Clay be elected an honorary member of the Association. Passed.

Moved by Mr. George, and seconded by Mr. Wilson, that the cordial thanks of the Association be tendered to the President and Officers for their services during past the year. Passed.

Moved by Mr. Wilson, and seconded by Mr. George, that the fees for membership be raised to the old prices of \$1.00 (one dollar) for gentlemen, and 50c. (fifty cents) for ladies. Passed.

Moved by Mr. Parsons, and seconded by Dr. Clay, that the minutes of this Convention, including the lectures, papers, and addresses, or as much of them as practicable, be published in pamphlet form. Passed.

It was moved and seconded that the time and place of next Convention be left to the Managing Committee, with the understanding that "Halifax and Christmas" are the place and time, "inseparably connected" in the minds of the Association. Passed.

Convention adjourned.

D. M. STERNS,  
*Secretary.*

## APPENDIX A.

### REV. G. M. GRANT'S ADDRESS.

*What can be done to improve Education in Nova Scotia?* The question is one for you rather than for me to answer; still, on the theory that the outsider sometimes sees the game better than the parties playing it, I shall offer my contribution to an answer. It is indeed somewhat inconsistent that a citizen of Halifax should be asked to address the Provincial Association of Teachers on Education. He is in the position of a slave speaking to the representatives of freedom on the duties and responsibilities of freedom. Halifax is the only district in Nova Scotia that is not intrusted with the management of its own educational affairs. It is perhaps the only city in Great Britain, Canada, or the United States that is disfranchised in this the highest of all its interests. We keep up the memory of a world long lost; we are the last relics of a barbarous age, of a race supposed in enlightened countries to be extinct—the race that believed in taxation without representation. We are taxed far more heavily than any other school district in the Province, in proportion to the amount given to our schools by the General Government, and yet we have not the rights cheerfully conceded to our most ignorant and most sparsely settled sections. A Board of School Commissioners or Trustees descends upon us, piles up a great debt for buildings, dips its hands into our pockets, extracts from them every year some \$50,000, spends that as it likes—voting \$1000 for itself and the rest professedly for *Common Schools*; but we who pay the money have nothing to say in the selection of these gentlemen, and have no constitutional means of reaching them to express approval or disapproval. If we dislike their educational principles or practice, we cannot turn them out of their offices. They are not required to call any meeting of the citizens to declare their policy or vindicate their proceedings or submit themselves to any popular verdict, and very naturally they never do call a meeting. A paternal Government elects seven of them for us, apparently for life; at any rate, there they are to be found from year to year, unless one should happen to depart this city or this life. The remaining six are thrown in, apparently to make up the sacred number thirteen, by the City Council, a respectable body elected by us to look after our drains and dram shops, our prisons and police; our streets and street-crossings, &c. Those six draw their share of the \$1000, and give an air of public participation and responsibility to the Board; but as they hold their seats only for one year, they may get acquainted with the machinery they are expected to work, but what can they do except carry out the policy of the seven *Dii Majores*. The distinction between sitting above and sitting below the salt is as nothing compared to the distinction between the six annuals and the seven immortals who constitute the Board. Aldermen may come and Aldermen may go, but the seven go on for ever. In the eye of an annual they must appear to be the modern Melchisedek, without beginning of days or end of life.

What a queer motley our Board is! Was ever the like of it heard of before? A Board wholly appointed by the Local Government, as was the case after the passing of the School Act was bad enough; but the present condition of things is worse. Instead of being an unit, it is an ill-fused conglomerate of irreconcilable atoms. It has two faces, neither distinct, the one being a mock lion, the other only Snug the Joiner. It is like Bottom the Weaver who could play any and every part—no matter how inconsistent—in the same play. Told to act a 'lover that kills himself most gallantly for love,' he insists on 'playing the lion too.' "I will roar" says Bottom "that I will do any man's heart good to hear me; I

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will roar that I will make the Duke say, 'Let him roar again, let him roar again.'” Being told that might hurt the Duchess and so be enough to hang them all, why, says he “I will aggravate my voice so that I will roar you as gently as any sucking dove; I will roar you an't were any nightingale.” And with like versatility our Board is able to combine in itself the wire-pulling and jobbing inseparable from every corporation from which the currents of free, intelligent public opinion are excluded, and at the same time can hold up its six Aldermen to any impertinent inquirer, and say ‘Behold the liberal sop that we have given to the principles of Responsible Government; who can say that we are not a representative body.’”

Of course every one understands that in these remarks, not the slightest reference is intended to the individuals who happen to comprise our School Board. In my opinion, some of those gentlemen are eminently qualified to be Trustees of Schools; others of them are eminently the reverse. I say this, knowing that my opinion does not affect them in the slightest. All that they—as a Board—have to do with me is to tax me; all that they expect from me and other citizens is that we should hold our tongues. Have not a succession of Governments decided that a Halifax citizen is too ignorant or too-something-else to be allowed anysay in the education of his own children? No, I have no reference to persons. They are all honourable men, but they are in an exceedingly false position, and ought not to feel comfortable in it, and the sooner they prepare a little bill giving to the tax-payers the right of electing or rejecting them, the more will they be personally honored.

But it is not on the fruitless subject of the Halifax School Board, its radical viciousness of constitution and the many evils resulting therefrom, that I have to speak to you for a few minutes to-night, but on the general subject of

#### WHAT CAN BE DONE TO IMPROVE EDUCATION IN NOVA SCOTIA?

Much has been done, especially within the last ten or eleven years, by this Province of ours for Common Schools. An increase of pupils in the schools, from 33,000 in 1864 to 74,000 in 1870, marks an epoch never to be forgotten. Not only so, but a thorough system, such as it is, has been introduced and taken root in the Province; a system that covers the whole ground, extending its ramifications to every nook and corner; that is suited to the habits and general prosperity of the people; that doesn't press too heavily on them, and that they most certainly will never part with, though they are prepared to listen to suggestions of improvement. Nearly one in five of our population is now in attendance at school, and that is as great a proportion as can reasonably be expected. You may add a few hundreds or thousands to the number, but the right proportion has been about reached. The most crying evil, therefore, has been redressed. For when we had in Nova Scotia 40,000 or 50,000 children who ought to be in school, and who were not, nothing else in the educational syllabus could be thought of. That had to be attended to first. That was the duty nearest us ten years ago. The call was not to bring Nova Scotia into line with the best educated countries, but to take her out from the number of those rightly called barbarous. That was done, and now we ask, what is the duty of to-day? I answer generally, to improve our schools that they may stand comparison with those of the best educated countries. Is this too high an ambition? No patriot will say that it is. We must improve our system, therefore, wherever experience has shown that it is most wanting; and while we trust most to our own experience, we must not disdain that of other countries. Our people are not wealthy, but they are wise enough to know that there is nothing they can so ill afford as ignorant children, and that nothing pays so well as a sound education, thorough at all events, and without sham as far as it goes. They will listen readily to

practical and reasonable proposals that show how such an end can be secured. They believe that economy and efficiency can be combined, and that what is inefficient can never be economical.

Now let me ask, to begin with, are we all satisfied that there is room for improvement?

The question may seem absurd, yet there are persons who speak and write as if our system was so good that it could not be bettered; as if it was a sacred ark that it was profanity to touch; and that we are the best educated people in the world, or that if we are not, the fault is not that of the system.

Well on this subject, I shall not give my own opinion, further than by saying that we are far behind, Austria, Prussia, Saxony, Wurtemberg, and other German States; behind Switzerland, Holland, Scotland; and behind even Ontario and the United States—countries it is fairer to compare our own with. But I will give the testimony of the 18 Inspectors of Nova Scotia and Cape Breton. What do they say? With scarcely any exceptions, their tone is that of grave complaint; and the exceptions are not the inspectors of the best educated counties. They say that there is much poor teaching; that the attendance of scholars is alarmingly irregular and intermittent; that there is grievous indifference on the part of parents; and that the results are not what might be expected from the machinery that is in operation. They intimate that few of our best young men if any now devote themselves to the work of teaching as the profession of their lives; that the proportion of raw to mature teachers is thus very great; that good teachers are not valued or paid or promoted, that therefore they are scarce and becoming scarcer, the last Annual Report showing that first-class men are disappearing to other countries and callings, and third-class men and women—if you can conceive of such a being as a third-class woman, are taking their places. Well, such testimony as this cannot be ain-said. It is no use to shut our eyes to it, or ostrich-like, comfort ourselves because we don't see. Unfortunately we cannot have more explicit evidence, because the inspectors do not examine the schools with a view to ascertain and give in tabulated columns of figures the results, as they do in Great Britain. We are told how many are in the schools, but not how many can read with intelligence, write legibly and work a sum in the rule of three; nor how many pass a prescribed standard annually; but as there is no prescribed standard and no payment by results, I suppose it is thought unnecessary to ascertain the facts. To say that there are so many children in the schools is apparently the height of our ambition. It seems to be thought that all the rest must follow by course of nature. We may take it as admitted then by all competent authorities that there is room for improvement in our school system or in our schools.

What are the remedies that have been hitherto suggested? Chiefly compulsory attendance, higher salaries to teachers, increased interest on the part of parents, and the elevation of the social status of teachers. All very fine, gentlemen, but remember "you must first catch your hare" or, there is small chance of your getting hare soup. Is any of those remedies immediately and directly obtainable *i. e.*, is it a practical measure to propose. I doubt it. Understand me, I am a believer in all four, but what consequence is it to a statesman that I or you should believe in them if the country as a whole does not, or is not prepared for it?

As to higher salaries to teachers, where is the money to come from? The Government has reached the maximum sum it can give, and the people seem to think that they are giving enough; for the testimony of the inspectors is that they will rather engage a 3rd class teacher than raise a little more to secure a 1st class. Even as the case stands now, the teaching profession holds out more money inducements than the clerical. I find e. g. that any graduate of this college can secure a school or a position in an Academy, yielding him an income of from \$600 to \$800 a year. That

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is paid to him regularly; he does not get the money in dollars and half dollars from different individuals with the air that they are bestowing a charity on him; he has a small district and does not require to keep a horse; and the demands made on his purse cannot compare with those made on a clergyman's. But what does the Church say to such a graduate? In effect, this,—Give up three or four years more of your life—your best years—to strictly professional studies; and then we will declare you eligible to receive a call to any of our congregations, and in half of these you may expect to receive \$500 a year; some of that perhaps in the shape of produce, and some of it in the still more portentous shape of arrears?

As to increased interest on the part of parents, that can only come as the result of causes to be put in operation. To set it down as a remedy to be conjured into existence to remove crying evils, is a mistake greater than that of putting the cart before the horse.

The same remark applies to the next proposed remedy, the elevation of the social status of the teaching profession. Social status is a thing that cannot be legislated into existence. It can come only as the result of the general elevation of the community, and the force and merit of the particular profession. As a rule, in our and every British community a man will in the long run receive that respect and position to which his own merits entitle him. I do not deny that with us the teaching profession has not had that high estimate that its own intrinsic importance demands for it; but such a state of affairs is the result of many causes, and it can only be remedied by the removal of those causes, and the dynamical operation of other and better social forces.

My opinion of those four remedies, then, is that the first is not a practical measure and that in the present state of our schools it would not do very much good; and that the other three can be had only as the result of a better educated state of society and of better schools. How then to get the better schools is still the question? What are my suggestions on the subject?

1. Begin from above. (1). It is now a recognized principle with all true educationists that when you have got a general system of common schools, the best way to improve it is by improving your Academies and Colleges. The good influences will gravitate downwards to the lowest schools. You get thus better teachers, better material for Inspectors, and the wholesome influence of scholarship and culture; proper prizes are held out to the profession; men are thus induced to remain in it, and the social status of the whole body is elevated. A young fellow is getting \$200 or \$300 a year now. Well, perhaps that is as much as he is now worth. At any rate he need not dream that the people by a dead lift in his little section will raise it to \$500. And even if they did, would that secure him to the profession for life? Certainly not. But let him know that he can rise by merit to be a Master in an Academy at \$1200, an Inspector at \$1600, or a Professor at \$2000, and he has something to look forward to. His value rises both in the social scale and in the matrimonial market. And he ceases to think of giving up the noble work of teaching in order that he may make \$800 by canvassing the country and worrying honest men into buying some bogus book that he himself never read, or some invention for making bread without flour.

To begin with, then, we need in Nova Scotia improved Intermediate Education. Our present state is deplorable. But how can it be improved, you ask, except by expending more money? Well, I don't think we need more money so much as a wise use of what is actually allotted for the purpose. The first proposal in our system was to have an Academy in every County, and to give \$600 Government allowance to each. Just fancy! The one clause fitly matches the other. Eighteen Academies to our little Provyince, each Academy propped up by \$600 a year! No wonder that few counties have taken advantage of the offer, and that



where they have, the result is only a better school-master than ordinary, and an Academy in name. As far as I know, the only institutions we have worth such a name are the three special Academies, viz.: Yarmouth, Pictou, and Horton, two of them public and one denominational. These three though good as compared with what was before, are not to be mentioned in the same breath with the Gymnasias of Germany, the great Public Schools of England, or the Academies and High Schools of Scotland. Five or six good Academies are all that the Province needs, and the Government may either give to the special Academies or allot for County Academies, along with corresponding amounts raised by the localities, and moderate fees such as are charged now at Horton, would equip properly that number. Remember that the County Academy was intended not to benefit one village, but the whole County. Well, a farmer or a fisherman in Guysborough County e. g. would find it as cheap to board his son in Pictou as in his own County town, and he would surely get better money's worth and his son a better education in a real than in a nominal Academy.

(2.) Similar remarks apply to inspection. That 7 men would be sufficient instead of 18 is proved (a) by the fact that at present one Inspector visits one seventh of the total number of Schools in the Province; (b) that few of our 18 Inspectors give their whole time to the work; and (c) by the example of other countries. In Great Britain the position of Inspector of Schools is considered a prize by the highest University men. Here it is tacked on to the work of a clergyman, of a lawyer, of a doctor, of a shopkeeper, as a perquisite in requital perhaps for political services. Speaking of the proposal to have efficient Inspectors to an M. P. P., he at once considered it in the light of his own county, party, self, and started the two objections—first, 'it would diminish my patronage'; secondly, "it would be very hard to take the inspectorship from the old man who now has it—he needs the \$400 or \$500—poor man! a large family you see!" If such reasoning is valid with Nova Scotians, so be it!" Only let them cease to talk of their intelligence or hope to compare with the foremost nations.

If we cannot afford good Inspection, do away with the farce of it, and leave the thing in the hands of the people of each district. They will attend to the work better when they know that there is no one else to do the work. But we can afford it. The sum now giving to 18 men would pay 7 properly. And good Inspection is very good, while bad Inspection is very bad. The visit of a man greatly superior to the ordinary teacher is a boon. The visit of one no better than himself is a positive injury.

3. Throw the teaching profession open to properly certified men, no matter what country they come from, and then pay by results.

Is Nova Scotia a second Celestial country, round which a great wall has to be drawn to exclude outside barbarians! If not, why have a law forbidding any one to teach till he has passed the examination prescribed by our Council of Public Instruction? Isn't the degree of a Scottish, Ontarian or New England Normal School, or the license of their Boards, sufficient guarantee for us to try the holder? It may be objected that if he is competent, he will not dread our examiners. Judging from the examination papers I have looked over, he certainly need not dread them. Still, the objection will not hold water. For (1) few men who respect themselves will submit to be re-examined by an inferior body, after they have passed before one deservedly ranked higher; (2) few men at 35 or 40 years of age can pass the examination they could pass easily at 17 or 18, and yet they are morally certain to be far better teachers at the mature age. Is it then actually expected that teachers from other countries will come, wait for our semi-annual or annual examination, and run the risk of being plucked or degraded to a second class, because of forgetfulness of

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technicalities, and all in order that school commissioners may be allowed to try them. The law is the law of a pedant. It savors wholly of red-tape, and not at all of human nature. Dismiss from our minds the fancy that our standard of examination is higher than that of other countries, and let there be somewhat more of free-trade in teaching. (3.) The examination passed by a teacher at the outset of his career is the very smallest test of his fitness, or of the likelihood of his being a successful teacher. The contrary supposition is based on the idea that a man can teach all he knows; and that all that is required of a teacher is that he should be a little ahead of his pupil in the text-book he uses. But the good teacher doesn't teach the tenth part of what he knows. What he teaches is but the overflow of a full, ripe and highly cultivated mind. And yet such a mind would submit reluctantly to re-examination as a test. (4.) The fact that this law does not extend to the special academies is sufficient condemnation of it. The Trustees for Pictou, Horton and Yarmouth Academies are allowed to engage men who have not passed a Provincial examination to teach subjects that are clearly beyond the knowledge of the Trustees; but the same men are not allowed to employ men to teach A, B, C, though they have licenses and degrees from the most honored institutions, unless they have passed the Nova Scotia examination!

Such a requirement as that in force at present degrades the teaching profession. Fancy it applied to other callings; that my ordination in Scotland should be unrecognized anywhere else, and that I should be re-examined and re-ordained before being allowed to take a charge in Nova Scotia! or that no doctor should be allowed to practise unless he graduated from Dalhousie College! Nova Scotians have no reason to dread competition. Other things being equal, their countrymen will always and rightly prefer them. They don't ask for protection or monopoly.

But how then shall we be protected from a deluge of inefficient teachers? We need not be alarmed. First, the teacher must have a license from some recognized body. Secondly, the Commissioner and parents are not eager to engage or to continue the services of a drone, and besides the awful eye of one of the 18 inspectors will be ever on him. This is the only fair test, and it should certainly be applied here as it is rigorously in Britain. Look how it is now. Two teachers pass the same examination, one by the skin of his teeth, perhaps by some species of foxing; the other handsomely. The one is lazy and inefficient; the other enthusiastic and successful. But both receive the same government allowance. That's bad enough in the country. It is worse in towns. Here is a graded school with eight or ten teachers; five or six good, the others bad. The bad not only do little or nothing but they clog the whole school; yet good and bad are paid alike. There is no test, no exhibition of results. Why should there not be a standard for every department, and for every school, and each teacher be paid the *government allowance* according to the number of scholars that pass the standard annually, as in Britain, where the inspector examines and reports, and the teacher gets government money according to his report; so much for every scholar that reads intelligently, or writes legibly, or spells well, &c. Would not such a system keep the deluge from us? Would it not also expose sham teachers, encourage and be the means of promoting good ones, and also show to the public the real results of all the money it spends on common school education?

Well, I think I have said enough for one night. In brief I would say, in order to improve education we must get better teachers. We can only get these (1) by having proper Academies and Colleges, where a liberal education can be received, (2) by offering such prizes as masterhips of such Institutions, Inspectorships, and the like, as will induce men to adopt teaching as their life profession (3) by paying for results.

I have not spoken of colleges, because my views on that subject are well known! It's worse than the 18 Academies. Alas, alas! according to the old Scotch proverb, "we have aimed at the moon and landed in the midden."—All that I would say in connection with this part of the subject is (1) that there ought to be an organic relationship between the School, the Academy, and the College. The common school and the status of the teacher will never be elevated otherwise; and (2) that if we cannot have one good college, at all events the Government should pay by results. To give the same amount to a college that educates 6 students in Arts as to one that educates 30 or 80, is so monstrous that, if I didn't know it was done in Nova Scotia, I would indignantly deny that it could be done anywhere.

Neither have I referred to the religious difficulty. It is not a burning question now in Nova Scotia, but it may become so at any moment, because the present state of matters does not give satisfaction to either side in the long standing controversy. I content myself with saying that the solution come to in Ontario after years of struggle appears to me the fairest and therefore the wisest;—best for education and religion, for Protestant and Roman Catholic, for that peace and mutual goodwill which are indispensable to progress and patriotism.

Neither have I referred to the Normal School. And all that I have to say on it is that it seems strange to me that a Government professedly pinched for money should spend as much on a Normal School as on all the colleges of Nova Scotia, when by bringing it to Halifax the expense might be reduced nearly one-half, by the students studying in it only the professional department, as they could study mathematics, classics and other subjects in existing institutions.

I commend what I have said to your candid consideration. My views are the result of all the observation and thinking I have been able to give to the subject. I have had to condense to bring them within the time I could reasonably ask from an audience. I have advocated nothing Utopian, nothing but what could be effected with the money at present available, nothing that any Government could not pass readily if it saw fit to do so and honestly grappled with the subject.

I am not a politician. I am not the Government. It is not my duty to prepare Bills and arrange ways and means. But I am a tax-payer. I am a citizen, and it is my duty to speak out fully and frankly on every subject that affects the common weal, and that duty I shall always try to fulfil, especially when before fit audiences.

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## B.

### *PAPER ON MATHEMATICS, BY A. H. MCKAY.*

I remember my first adventure in Arithmetic. It was out on the green on a summer evening. Glorifying in the possession of a slate and pencil, and ambitious of making conquests in the learning of the schools, which as yet I had only heard of, I soon mastered all the "figures" and made a bold dash on Addition. Small sums of one column soon fell before me, then larger ones of two, then of three columns. With the assistance of my preceptor, whom I pressed into my service, victory signalized every attempt,

and I felt as proud as an Alexander. But, wearied with my frequent importunities, my Mentor, who used to be consulted as incessantly as I reached the top of the column, gave me an "easy sum," for the sake of a momentary peace, I suppose. At the very first sight of it I was confounded. After surveying for some time the problem before me, with a calm deliberation, I ejaculated: "That's not a question,—that can't be done." I was quietly, and, as I observed, honestly, told in reply that it was the easiest question that could be given in Addition. This fact was incomprehensible to me. "This easier than anything I have done? Why! I can't see how it can be done at all." "Yet it is easier than anything I have done." I was completely puzzled by the paradox. I was fascinated by the contradiction between my own decided impression and the assertion of my tutor, whom I implicitly believed. With downcast eyes at this decisive defeat, I pored over the *monstrum mirabile* with dejected wonder. Here it is in all its awful incomprehensibility—three lines high and three columns broad. III, III, III. I don't know exactly what made it so incomprehensible; but strikingly incomprehensible it was, for I retain the impression of the moment, from my earliest childhood to the present, as vividly as if it occurred but yesterday. It appears to me that the difficulty was caused by the absence of variety in the figures. Here they were all strokes. I could add up 2's, 3's, 4's and 5's; but here were all strokes—one, two, three rows of strokes, looking as if they might be intended to represent a battalion of soldiers in array. I couldn't understand how Addition could have anything to do with it.

This incident has had an interest for me. It shows that in the study of mathematics the pupil may meet with difficulties which may discourage him, and yet the teacher may not be able, in the first place, to devine the difficulty, and in the second place, he may not appreciate its full force as an impediment to the pupil's progress when it is defined. In my case, the stumbling block was that the nature of figures, and especially the unit, was not properly understood. Yet what teacher could think it possible that when 3's, 4's and 5's could be added, the same pupil could not add up a column of units, "because they looked like strokes." Now, fellow-teachers, from my range of experience and observation, although they are as yet quite limited, I have come to the conclusion that the greatest number of failures in mathematics, under competent teachers, is due to the discouragement arising from some erroneous or defective notion of the arbitrary usage or conventional nature of elementary forms and processes of the science, and not to a want of mathematical ability. Were the teacher to know of the existence and character of the obstacle, one minute—one sentence—might have brushed it out, and thus clear the path for an unbewildered and pleasant walk into the province of mathematical truth.

The fundamental ideas of mathematics are the first principles of common sense. Any one who can boast of being a rational creature can boast to the same extent that he is a mathematical creature; and *vice versa*, any one who cannot show a claim to the latter cannot put forward a claim to the former. Memory, with the power of abstraction and generalization, vary much in different individuals, and to this fact the diversity in mathematical attainments may, to a certain extent, be ascribed. These are the instruments by which we work; but the structure is built out of the materials which are found uncovered and ready of access in every reasoning mind. This substratum of fundamental ideas, or axiomatic truths, is common to the minds of all pupils—of those who excel, as well as of those who do not. Now, the memory is cultivated in school by every subject taught. The faculties of abstraction, generalization and reasoning are cultivated particularly by this science. In teaching its rudiments we have to develop the germs of these powers in many cases, and in its further pursuit we exercise and strengthen them. Then, seeing that the fundamental elements of mathematical knowledge are in the mental constitution of every pupil, and that the faculties of mind for the manipulation of these elements are strengthened by their very use, what must the teacher particularly attend to in order to lessen the number of failures so common in our schools? In my opinion it is the thorough explanation of the “conventions” from the most elementary. Although mathematics is *the* reasoning science, yet it has that in it for which no better reason can be assigned than convenience. It must have a starting point, and that starting point has to be assumed. In Arithmetic, you assume certain characters as the representatives of numbers. You adopt a purely conventional method of arranging those characters so as to express different numbers. Your signs, your methods of expressing fractions, are altogether conventional. They might be quite different from what they are, and the science not suffer in the least from it. In Algebra and Geometry, these conventions are still further multiplied. By no method of reasoning can these be found out; and if the pupil has vague or incorrect notions of any of them, his intelligent progress is at once impeded. The teacher who understands all these simple arrangements may explain them to his pupils, quite plainly as he thinks, but the omission of one phrase, or the suggestion of one word improperly used, may give a slightly erroneous idea of the nature of the subject explained, which may for a long time embarrass the young student, while no one can divine where the difficulty exists. We should not, then, leave any subject without presenting it in as many various ways as possible, and finding out that it is fully understood. The “conventions” being thus completely mastered, the pupil cannot help drawing the proper inferences. From the very constitution of his mind he infers the known from the unknown. Understanding the full significance of every term he uses, there is for him no greater

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difficulty in arriving at correct results, than in building his little castle out of the blocks in his toy-box.

The first blunder is very generally made at the very beginning—in teaching Notation. The pupil soon masters the values of ten digits, but has a very misty notion of the natures of the notations for large numbers. Now, in the elucidation of my subject, it is of the greatest importance that the attention of the young student be continuously engaged. In order to do this, the pupils must take a part in the work. Keep their attention to the point in hand by frequently putting questions, and leaving elapses to be filled in by them. The teacher stands before the blackboard, chalk in hand. The pupils are in "position first," with all their eyes twinkling and flashing fitfully from the teacher's eye to his crayon. Silence—and the teacher puts the question:

"How many figures are there?"

Sometimes he may take the answer from all simultaneously, at other times point out an individual. He may get as an answer to this question, "nine," "ten," or "nine and a naught."

"What is the use of figures?"

"To write down numbers."

"How many numbers are there?"

"There is no end to numbers."

"How do we 'write down' numbers?"

"With figures."

"Is there a figure for every number?"

"No."

"Why?"

"Because then there would have to be figures 'without end.'"

"And what would be the difference?"

"We couldn't learn them all."

"You couldn't?"

"No; it was hard enough to learn them and remember them from 0 to 9."

"Then we have ten figures—only ten—and with them we can 'write down' numbers without end, can we?"

"Yes."

"Well let us see how it can be done. I have some cents and a dime here. Do you know how much a dime is worth?"

"Yes; it's worth as much as ten cents. It will buy a quarter pound of candy."

"Well, there are nine cents. Can you write that number on the board?"

"Yes; there it is" (as he writes nine on the black board).

"Is there a figure for any number greater than nine?"

"No."

"How can we write down a number greater than nine, then?"

"Don't know."

"Here are ten cents. Can you put that number on the board?"

"Don't think it."

- “ Well, which would you rather, this dime or these ten cents ?”
- “ Either of them.”
- “ Why ?”
- “ Because one is worth as much as the other.”
- “ Couldn't you write down ten cents, then, as *one* dime, on the board ?”
- “ Yes ; there it is.”
- “ But how can I tell whether that is *one dime* or *one cent* ?”
- “ Don't know.”
- “ Well, I am just going to show. When I put down one figure I say it is in the 'first place.' When I put down another on the left-hand side, I say it is in the 'second place.' Now, if I put another figure to the left of that, in which 'place' is it ?”
- “ In the third place.”
- “ And if I put another to the left of that, in which place is it ?”
- “ In the fourth place ?”
- “ Well, now, we always put cents in the 'first place,' and if a figure is in the second place it means dimes. How can you write down *one dime*, now ?”
- “ Put *one* in the second place ?”
- “ How can we know that it is in the second place ?”
- “ Put another figure in the first place.”
- “ Well, I do so. I put *three* in the first place. Read that.”
- “ One dime and three cents.”
- “ But it is *one dime* or *ten cents*, which is the same, that I wanted to put down.”
- “ Then put a *naught* in the place of the *three*.”
- “ Read it now, then.”
- “ *One dime and no cents*.”
- “ Read it in cents alone.”
- “ Ten cents.”
- “ Now, what do numbers in the 'second place' mean ?”
- “ Ten cents.”
- “ I put down the number '30,' read that.”
- “ Three, ten cents and nothing.”
- “ Let us see if we can't put *three tens* into one word, to make it shorter. Try it.”
- “ Three-ten.”
- “ We can make it shorter yet. Change *ten* to *ty*.”
- “ Three-ty.”
- “ Very near it. It is *thirty*. Have you ever heard that number before ?”
- “ Yes—thirty.”
- “ And what would be the shorter name for *four tens* ?”
- “ I suppose, forty.”
- “ Yes, *forty* ; and for five tens ?”
- “ Fifty.”
- “ Now, I put down a number of cents on the board, 98. Read the number.”
- “ Nine dimes and eight cents.”

"Read it in another way—in cents alone."

"Nine-ten cents and eight cents."

"Another shorter way, vet."

"Ninety cents and eight cents."

"Now here is another question. I have got ten dimes. How shall I write that down?"

"Don't know. Suppose like the 'ten cents.'"

"Do you know how much ten dimes are? Well, I will tell you. It is exactly worth as much as that small piece of gold. How much is that? Have you ever seen the like before?"

"Yes; that is a dollar."

"Then you can write *ten dimes* as—what?"

"As one dollar."

"And how will we distinguish between *one dollar* and *one dime*?"

"I suppose, put the dollars in the third place."

"Right—that's very well."

"How many *ten-cent pieces* did we say were in a dollar?"

"Ten."

"How much is ten *ten cents*. You try it on the Ballframe, and you watch if he counts rightly. How many?"

"A hundred."

"How many cents in a dollar, then?"

"A hundred."

"How many cents does a figure in the third place mean?"

"Hundreds of cents."

"Write down three hundred and fifty and six cents."

"There it is—356."

"Does it make any difference whether you put a figure in the first place or second place?"

"Yes; it means ten times as much in the second place."

"How much more would the figure mean in the third place?"

"Ten times as much as in the second place."

"How much would it mean in the fourth place?"

"I suppose ten times as much as in the third place."

"And how much would that be?"

"Ten hundreds."

"Can we shorten ten hundreds into one word?"

"Don't know. Suppose we can."

"No we can't; but we have a shorter word for it though. Will you remember if I tell you?"

"Yes."

"Well, it is a *thousand*. Now tell me, how many cents does 6 in the first place mean?"

"Six cents."

"How many cents does 6 in the second place mean?"

"*Six tens* cents—*sixty* cents."

"How many does 6 in the third place mean?"

"Six hundred cents."



- "How many does 6 in the fourth place?"
- "Six thousand, I suppose."
- "Right.—Now, how many pencils would 8 in the first place mean?"
- "Eight pencils."
- "How many would 5 in the second place mean?"
- "Five tens of pencils—*fifty* pencils."
- "How much would 3 in the third place mean?"
- "Three hundred."
- "7 in the fourth place?"
- "Seven thousand."
- "So the *place* value of a figure is different from that of the figure alone. Is it not?"
- "Yes."
- "Well, give the *place value* of the figures in this number, 6723." The pupil does this quite readily now.
- "How much greater is the *place value* of a figure made by shifting it one place to the left?"
- "Ten times."
- "What if it is shifted one place to the right?"
- "It is made *less*."
- "How much?"
- "I suppose ten times less."
- "Right.—Now, as you are getting tired of figures, we shall try a Latin word—the Latin word for place. Who thinks he can remember it, if I say it once and spell it?" Out come all the slates at a given signal.
- "Locus, l, o, c, u, s—a place. Who has it?" Every hand up.
- "We shall now make an English word out of this, to stand for 'place value,' because 'place value' does not sound very well. This word is 'local value.' 'Local,' made out of the Latin word, means 'place.' Now, for *place value*, we shall use what?"
- "Local value."
- "Give the 'local values,' then, of the figures in this number, 5403?"

This is readily done. The lesson is over, and the pupils put through their "positions." For several days this lesson should be given in different forms, and with various illustrations—ellipses might be used to a greater extent than can be conveniently expressed in a written illustration—until each and every pupil can answer any question which can be put to him on the subject. Nor should Notation be dismissed until he is able to indicate how a system of Notation could be constructed with a greater or less number of digits than we use—how the ratios between the "places" might be 6, 9, or 11, as well as 10; or how the ratios between the "places" might be all unlike, as 4, 12 and 20, in the old money currency. In Reductions and the Compound Rules, the reduction of numbers from one scale to a scale with a different radix, the addition, subtraction, multiplication and division of

numbers, in scales of notation, should be given as exercises until the pupil comprehends clearly that the processes of operation in the Compound Rules are exactly the same as in the Simple Rules, only that the radix, *ten*, in the latter, admits of most convenient contractions in the work.

Perhaps in no department of this branch of education is the necessity of a thorough acquaintance with its conventions more evident than in Algebra and Geometry. It is not reasoning you have to teach in them. Any pupil can do *that* if there is no mistiness about the facts assumed. Again and again an algebraic operation or the demonstration of a proposition is explained; and the pupil stares, with a vacant, meaningless look, at something or everything. Disheartened, the teacher mutters to himself, "You incomprehensible dunce!" Then sets "His Juvenile Obtuseness" sternly to work, according to rule or rote. What is the cause of this want of comprehension on the part of the pupil? The reasoning is of the most simple kind; then why cannot the reasoning animal follow it? Simply because the terms used are not clearly understood. Now, it must be continually borne in mind that the signs and peculiar expressions of the science are conventional—completely so. They were invented, not discovered—invented gradually and quite arbitrarily. An exact meaning, however, is attached to each one of them—a meaning which never varies, and over which the context has no modifying influence. The first work, then, is to make the pupil comprehend accurately and fully the signification of these signs and terms. Drill the pupils in the definitions thoroughly. You cannot drill them too much. Like Angels' visits, those who do their duty in this respect are few and far between. Give exercises in Mental Algebra, as well as in Mental Arithmetic, until its cabalistic conventions become as familiar as the Multiplication Table. When, by the most severe tests, it is proven that the pupil fully understands the significance, pass on. Then Addition, Subtraction, Multiplication, Division, and the whole department of Fractions, is but the pleasant labor of a few weeks to any one who has a fair knowledge of Elementary Arithmetic. I have known young men who had "gone through Quadratics," and yet had so defective a knowledge of the nature of *indices* as to be completely puzzled by the simplest and most elementary examples: such as, for example,  $\sqrt{x^m} \div x^{\frac{2m}{3}}$ .

The full import of the signs + and — should be taught in connection with Addition and Subtraction, by oral lessons—by elementary exercises in Mental Algebra. You can easily pass off from the addition of concrete quantities to that of Algebraic quantities. For instance:—"4 pencils — 1 pencil + 2 books + 5 pencils—how many?" The pupil will probably reply at first, "ten." You ask again: "Ten—what?" Answer: "Ten books and pencils." Teacher—"What am I to understand by that answer of yours—that there are *ten books* and *ten pencils*?" The

pupil soon finds his mistake and corrects himself:—*Two books and eight pencils.* Point out the fact now that, as *books* and *pencils* are different articles, they must be added separately, and the correct answer will be the sum of each. After a little exercise of this kind, *a, c, ax, &c.*, can be collected just as easily and as rapidly. In Multiplication and Division, which are one, as much as Addition and Subtraction, there are only three principal points to be attended to: First—Let the pupil fairly understand and impress on his memory that “like signs by like signs give *plus*, and unlike signs give *minus*.” Secondly—the convention: that “Multiplication is performed by the juxtaposition of the multiplier as a numerator; Division by its juxtaposition as a denominator.” Thirdly—this convention contracted, or the theory of indices: “When the bases are the same, Multiplication is performed by the addition of their indices; Division by the subtraction of the indices of the divisors.” But the pupil cannot make the slightest use of these without a knowledge of the definitions and the meaning of certain forms of expression, such as the term of the fraction for instance: the numerator is a dividend, the denominator nothing more or less than a divisor; or the fact that in an Algebraic expression of the form of *x*, there are three things always understood, though never expressed until there is occasion for it—a numerical co-efficient, unity; a denominator, unity; and an exponent of its power, unity. The convention of indices is the great stumbling-block. Yet, if the pupil once gets this simple idea into his head, he can multiply or divide monomials, having all the formidable powers of  $(m - 1)$ ,  $(p + q)$  as easily as he can *a, b* and *c*. If he knows vulgar fractions, he should be able now to multiply or divide any monomial surd which he may meet. He should on no account be allowed to pass this point without being able to accomplish all this. Then “Irrational Quantities” is robbed of all its difficulties for him, and “Imaginary Quantities” of all its terrors.

Bracketing comes next. Let the pupil see the convenience of it and he understands all. Why do we say “John, Jim and Henry Adams,” instead of “John Adams, Jim Adams and Henry Adams?” Vincula have exactly the same power and significance as brackets. The dividing line between numerator and denominator is a true vinculum. The effect of the sign *minus*, before a bracketed quantity or a compound fraction should be particularly noticed, and treated as a case of Subtraction.

In beginning Simple Equations, the first exercise should be worked by means of the Axioms: “If equals be taken from equals the remainders are equal,” or “If equals be added to equals the wholes are equal.” Let the pupil himself find out the “rule of transposition” from these exercises. By discovering it in this inductive method, he can both remember the rule more surely, understand its *rationale*, and feel its convenience. To sum

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up the whole; explain, and drill the pupil in, the conventions—in the full significance of signs, brackets, vincula, indices, &c., and the study of Algebra will become a pleasure and a profit.

Geometry has always come in for a fair share of abuse from the young student. It is so unlike the simple mnemonical tasks to which he has been accustomed that, as he says, "he can't get the idea into his head." Under these circumstances, it is evident that the most important and first work is "to get the idea *into* his head." Now, the way to do this is not by rushing carelessly through the definitions, impatient to attack the problem of the Equilateral Triangle, or of memorizing, in a beautiful style, each proposition as its turn comes—a process as difficult, though quite as useful, as committing the table of the moon's southings at Greenwich in Belcher's Almanac. I do not mean to insinuate that any one in Nova Scotia to-day teaches Geometry in the manner in which I was first taught—when I triumphantly crossed "Pons Asinorum,"—with a most beautiful and exact diagram of the said bridge on the Board, with the "master's" eyes on Euclid and mine intent on my fingers. But how can we account for the fact that under excellent scholars, and in good schools, a pupil can recite a whole proposition; and if you ask him, when he has successfully finished, why the line AB is equal to AC, or what right he had to assert the angle DEF is equal to the angle KLM, he is quite blank with astonishment at your unreasonableness in not considering Euclid a sufficient authority for it. I have known students to have "gone through"—I use the vernacular, "gone through"—one, two, three, four and more books of Geometry, who couldn't give the definition of a straight line, a plane surface, a parallelogram or a circle without having it either redundant, defective or absurd. In fact, I have seen some who appeared to be of the opinion that definitions, axioms, and the like, were of no use except for little children who were beginning, and were not able to learn the larger lessons in the middle of the book, "which were called Theorems and Problems." "They might be very useful in an elementary school; but they couldn't see the use of the more advanced paying much attention to them." Now, supposing a person with such ideas as these could recite every proposition from cover to cover, I feel that I am perfectly safe in saying that he knows no more of Geometry than Geometry knows of him. In truth, his book is a better geometrician than himself, for it is likely to contain the propositions more accurately than his memory retains them.

There are too many young students, and some older ones, who, in their attention to this branch of study, derive benefit only from the knowledge of the mathematical truths enunciated; while one of the principal educational advantages which the science is capable of affording is the discipline consequent

on the manner of the discovery of these truths. The mistake is too often made, that which is the parent of most of the succeeding blunders, is hurrying on too impatiently at the beginning. The full importance of the precise wording of the definitions, and of an exact and clear idea of them, is not understood. Now, I consider that this should be laid down as an inflexible rule: that a pupil should not touch a proposition until every definition, postulate and axiom is known by its number known, in letter and known in spirit. When this is done, he should be told:—Now you are about entering upon another part of your course. It is as different from what you have already gone through as light is from darkness. You have taken these definitions, axioms and postulates as they were presented to you. Think them over—each one of them—carefully. If there is the least iota to which you cannot give your unreserved and intelligent assent, you cannot proceed one step further. If there is anything not quite clear, have it cleared up. Euclid, up to this point, is a stern tyrant. If you cannot accede to these conditions, he will have none of you. Do you make this unreserved submission? Are you willing to proceed? If so, then enter the temple of Geometry. Now, bound by your solemn assent, you are initiated. Euclid is no longer a Dictator, but an equal. You must rise to the dignity of this equality. You must no longer take anything for granted because he says it. He will not thank you for it now. Nay, he rather spurns the craven spirit who should do so. He wants no confidence in *him*. He says, “be a sceptic.” Believe nothing unless it is proved; no matter how simple; no matter how like the truth. Admit nothing but what you are compelled to admit. The pages of definitions, postulates and axioms to which you have assented as the groundwork of your reasonings, is the Law-book to settle all disputes, the Bible to silence all doubts. They contain the ultimate, highest and only rules and reasons for your procedure and opinions. No operations can be admitted except those postulated. Therefore, if a line is to be drawn, you must refer to the postulate as an indisputable authority before it is done. If an assertion is made, it must be proven, either by a reference to a previously established theorem, to a definition, axiom, hypothesis or construction. You must prove all things, if not by reference, by demonstration; then hold fast all you have proven. Our school books are more or less defective in the matter of references. The pupil, however, should supply all omissions of this kind, at least in the First Book. I would insist on this, as there is nothing like it to compel the young student to comprehend the true nature of mathematical reasoning.

These hints which I have thrown out as to the manner of treating the elements of Mathematics, may be summed up in a

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few words, thus: Explain, first of all, the rudimentary conventions or technicalities fully and thoroughly. Drill them *in*. Make the pupil perfectly at home before you proceed; then his progress will be rapid and satisfactory. Never mind explaining the reasoning. You explain the use and arrange the facts, until you find the pupil drawing the inference, for that he can do quite readily, especially if you have no more than one link in the chain of reasoning at a time. I have called attention to these points because I have found so many who considered themselves well advanced, stumbling at difficulties which I could not account for, until I traced them to erroneous or defective ideas of the technicalities of the science, which should have been understood at the very beginning. I know that many students are hampered, and some completely discouraged, by some such wrong cog in the clock-work of their mathematical lore. If we do not pay close attention to each wheel, pinion and pin, while we are placing them together, we shall certainly lose much time and pleasure in correcting any oversight that mars the efficiency of the whole machinery.

I intended to make some general remarks on the study of Mathematics, but the length of my paper precludes me from saying more than a word or two. It is one of the most important—it is the important subject taught in our schools. It is required in every occupation of life—in the lumber-yard and in the counting house; on the railway and on the ocean. It is the most practical science. It is the universal art. But it is more; it is the most theoretical science, and the only exact one. It combines within itself more of the scientific virtues than any other subject which can interest human intellect. Apart from its practical advantages, which are innumerable, it repays the student of Nature more liberally than any other pursuit. The student of Language pores over the obsolete markings of some ancient manuscript, and when he deciphers a noble thought, his bosom swells with ecstatic rapture because he has wrenched from the close embrace of Hieroglyphics the entombed secret of a thousand years. But how much greater cause of transport has the mathematician who, from a small handful of definitions, postulates, and axioms, which all the world kick about as common pebbles at their feet, with a skill more magical than Alladin's Lamp in the Eastern fable, builds up, slowly but surely, a magnificent structure, which rises and rises until its pinnacles project against the sky—still growing and shooting out wings like gorgeous temples, swiftly as the Aurora glides, until it stands, as it does to-day, more glorious than the colossal image of the first temple, as it hovered over the doomed Jerusalem before its mighty fall. In one of those palace wings of the bright, looming edifice, stands a magician looking down on the mirrored ocean, and guiding over its trackless convex the argosies of com-

merce—the fleets of Empires. In another, a theodolite-like spirit looks down over country, town, mountain, forest and vale; points along its finger, and steel rails follow its tracing point, through plains, along rivers, from city to city and fast as thought, a puffing Locomotive springs into existence; flies up grades and down grades, round well balanced curves, then plunges into a mountain-side, and leaves the bowels of Mount Ceniz to thread a Hoosac Tunnel. Into another gleaming pinnacled fane the great sun pours a stream of fiery light, which in the distance looks like a mighty ribbon of gold; but no sooner does it enter than warp is torn from woof and the raveled fringes float down to the earth in all the hues of the rainbow, every fibre of which is gaged to the fifty thousandths part of an inch. In yet another department the balance is set, and the flying orbs of space are poised by magic weights. The measuring line is carried out at the rate of nearly two hundred thousand miles in a second, until the suns of other systems which constitute our universe show their orbits concave to “Central Aleyone.”

Mr. President and fellow-teachers—The study of Mathematics is looked upon by some as the driest subject on earth. But it is quite the contrary. In connection with the Physical Sciences, it opens up the most delightful and sublime realms of imagination. We can, by its means, measure celestial distances so great that thought can scarcely comprehend; we can also measure the lengths of ethereal waves so minute that the most powerful microscope can never come near revealing. We can far transcend the human senses in our knowledge of immensity; we can also examine the motions and dimensions of atoms whose motions and dimensions we can never, never, in this life, expect to see with our limited physical vision. And Mathematics gives us truth—truer than our senses; never changing like the properties of matter; eternal as the universe. It enforces the truth that order prevails everywhere. That in the tossing of the winds, in the swing of the ocean billows, in the curve of the limbs of the trees of the forest, in the orbit of a speck of dust borne on the fitful gust, laws as invariable and as inflexible determine motion and arrangement as those which convey the planets in the azure vault. Yea, it teaches us by its very own surroundings to expect that the lily in the field is cared for as watchfully, and by the same omnipotent power, as the sun which rules the day or the moon that rules the night, and that the very hairs of our heads are numbered.

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*REV. C. B. PITBLADO'S ADDRESS.*

In my remarks on the school system I shall endeavour to deal with general principles rather than details. If without attempting to be exhaustive, I succeed in being suggestive I shall be satisfied.

Our school system is a national, a public one. It has been called into existence by legislation. Its machinery is moulded, adjusted, or propelled by the power of law. No doubt its life and efficiency depend upon the men who work it, but its organised form is shaped and maintained by the Government.

To try to give point to our remarks we shall arrange them on the following order:

1. The principles upon which our school system is based.
2. The objections that are urged against it.
3. Some of the defects that are apparent in its workings.

Two fundamental principles upon which our school system is based are (1.) The proprietorship of the state in every citizen. (2.) The evident superiority of the educated to the uneducated human being. Every member of the community is in a certain sense public property. It is the right and duty of the Government to care for and dispose of that property so as to make it conduce to the general welfare.

Under the popular institutions of Britain and America the functions of Government are recognized as two fold—executive and legislative. The executive enforces the laws which have been enacted. It is the centralized power of the state acting constitutionally. Legislation is what guides this power. True legislative wisdom consists in so adjusting private rights and public interests that they shall be working in harmony, under the constraints or restraints of the executive power, promote national prosperity.

The principles which underlie the legislation of all free countries (so-called) are these three: the equality of men, the obligations of justice, the rights of liberty. Given in the form of propositions, we may state them thus: All men are equal in the eye of the law. Impartial justice is the birth-right of every human being. Every man should be protected in giving expression to his conscientious convictions, whether by word or worship.

In Britain and America our laws profess to be made and enforced on these principles. The individual looks to the government for the protection of his rights in the maintenance of human equality, the dispensation of justice and the employment of liberty; the government on the other hand expects the countenance and support of the individual in making and administering beneficial laws.

For the protection guaranteed to the subject by the government every citizen becomes, as I have said, a kind of public property. He and his possessions are under the control of the government, to be disposed of as the constitution directs. The common way in which the proprietorship of the state is claimed and acknowledged is the levying and payment of taxes. Taxation is the price we pay for the benefits of government. Taxes are the oil by which we lubricate the wheels of government. In theory, however, it may be in practise, the public funds should be dispensed only for the general good. They should be employed only to



maintain equality, dispense justice and guarantee liberty among the citizens. When they are employed in any other way they are divided from their legitimate purposes.

Now our school law professes to be in perfect harmony with these general principles of legislation. It recognises equality, it dispenses justice, it secures liberty for all classes of the community.

Our school law asserts the claim of the state over the child and undertakes to develop its powers for the good of the country. In this new country the increase of the population of the right kind is recognized to be the grand question which will fix its destiny. Hence the cry from immigrants; and the complicated and expensive agencies employed to secure them. But surely the children who come to us by birth are just as valuable as those who come by immigration. Every child swells the statistics of our country. It is a nominal addition to the productive powers of the nation. It will swell the ranks of the virtuous or the vicious. Its forces will either drive the wheel of industry or block up the way of progress. The light of its life will either be prejudicial or beneficial to the community where its influence radiates. It comes into the world to be moulded for good or evil by the educational influences to which it is subjected. Now, it is admitted on all sides, that education, *i. e.*, the drawing out or development of all the human facilities—tends to promote virtue and suppress vice. Crime decreases as education advances. The best educated communities are the most virtuous. The development of a virtuous intelligence increases the productive powers of a nation. It is among the best educated classes we find the most pregnant thought, the most wonderful discoveries, the most beneficial inventions, and the most skilful and efficient laborers. The standard of intelligence in every country is the standard of virtue, industry and material prosperity.

The future of our country depends more upon the character of its people than the wealth of its material resources. The mind and muscle of manhood are the real wealth of any nation. Virtue is its real strength. Hence the duty of Government to develop mind in order to enrich the country—to foster virtue in order to secure national power. It is the people, not the broad areas, that constitute the greatness of a country. It is not things but men that make a nation. True statesmanship recognises this fact and seeks to develop the resources of the country by developing the powers of the inhabitants. To mould the nation we must mould the people. Under the light of proper education to invoke the intelligence, to inspire the hopes, to quicken the energies of the inhabitants; the capabilities of this country are incalculably great. But under the clouds of ignorance its productive powers will be shrouded in night and buried beneath the mould of intellectual stagnation. History furnishes abundant examples of warning, where the prevalence of ignorance among the common people, the paralysis of intellect among thinkers, and the enslavement of conscience in religion, have reduced an energetic nation to imbecility; have turned the most fertile plains into a comparative desert, and locked up the richest treasures of earth and sea. The vital question for us is not the greatness of our forests, as the character of the men who guard or cut them down—not so much the magnificence of our rivers and expansive lakes, the kind of men that will navigate them—not so much the fertility and extent of our vast plains and prairies as the kind of men that will cultivate them—not so much our mineral resources in the earth as the kind of men that will dig them out—not so much the institutions as the kind of men that support and work them. It is by the educational institutions more than any other state influence that the future destiny of the country would be moulded. And it is not so much the educational system as the men who work it that will influence

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the country. One or two enthusiastic, energetic men at the head of educational affairs would do more to infuse life into our school system, and make it a success than all the legislation that can be put on our statute book.

The object which our school system seeks to accomplish is three-fold. It would make education *general, free and thorough*. It aims at educating every child in the country. It brings the means of acquiring a good education within the reach of all. It opens the school-house doors to every child. It has at least so far succeeded that some of the most retired country districts furnish better facilities for acquiring a good common and high-school education than the metropolis of the country. Probably the defeat of the system is that it does not compel attendance at school. The industry and property of the country bear the burden of the educational expenses. The poor pay their share of the taxes in the price of the dutiable articles they consume. The rich pay their share on the property they possess. The effect of education is to open up new fields of industry and enhance the value of property. In this way both industry and property get compensated. The quality of education is guaranteed in appearance by the examination, classification and training of teachers and the general training of inspectorship and supervision which is exercised over the schools. The instruction communicated is such as is needful to make a good citizen. The state educates the child for the manhood of citizenship. It aims at developing those qualities which will enable him to do his duties to his country. It teaches him how to do for himself, how to observe the common rules of morality and transact the every day business of life. Every government exceeds its functions when it becomes the propagator of theological opinions. Our school system to be fair to all must be unsectarian.

The objections urged against the system are presented on three grounds, viz.: privilege, justice, conscience. A man comes and says, "Your school system does not give me the privilege which belongs to me in the social position I occupy. You open your school doors to everybody. The dregs of society come into the school. My children cannot associate with such companions. They would be contaminated by the fellowship. Now I am virtually excluded from participating in the benefits of the school for which I have to pay. You compel me to support a system of whose advantages I cannot avail myself. After paying the taxes that are extorted from me, I have not enough left to pay for a private teacher." Now we grant you that separate schools on the ground of social distinctions are just as reasonable as separate schools on the grounds of religious opinions. It is shocking to the taste, and perhaps injurious to the morals, to have the high and low mixing together. We remind you, however, that the low must be educated, and you must bear your share of the expense. Further, you can educate your children privately if you choose. The law leaves you perfectly free. The city socially must be drained. You have to pay for the benefit you receive from the drainage, but we do not ask you to dig in the drain unless you like. Again, the law knows no difference between one child and another. It must make the same provision for all. The most neglected are as much the property of the state as the best cared for. Indeed, the special object of our school system is to care for those who would likely be otherwise overlooked. We wish to use the wealth and influence of the rich to lift up the poor. But the law can make no particular classes; it can recognize no social distinctions. It must rest on the equality of manhood, and treat every child alike, whether it be born in a hovel or in a palace. Besides, we aim at making our school-rooms places of moral purity, and we do not believe that the moral ventilation is better in private than in public schools. Moral measles creep in anywhere. Another man comes and says, your school system is unjust; you make me pay for educating other people's children; you tax my pro-

erty for other folk's benefit; you make me pay tax on my own industry and skill, which is like a premium on other people's indolence and stupidity. I am willing to educate my own family, but not other people's. Now the force of the argument has been seriously felt in many country districts, when the aged, who have brought up their families, have been heavily taxed for the building of new school-houses and getting the new educational machinery in motion. We reply in reference to the principle, however, that the sins of parents should not be visited on the children. Bad parents or poverty may be their misfortune. It should not exclude them from a participation in the benefits of a system which would tend to make them members of society. Education will help to prevent the ignorant from becoming a burden on the state as criminals and paupers. It is better to keep people in school than in the poor-house; it is better to pay taxes for education than the punishment of crime. But let us look at the matter in another light. The poor children and parents of a community pay their proportion of the educational taxes in the price of the article they consume. They, in this way pay, say ten or twenty dollars of the indirect tax which the teacher draws from the treasury. Now, if you were to exclude them from school, you would be taking \$10 or \$20 of their money to educate your children. If schools are to be exclusive, then in all justice there should be no indirect taxation for their support, else you will rob the poor customer to educate the children of the wealthy proprietor.

But it is in the name of conscience that the fiercest opposition to our school system is presented. They tell us that it is "irreligious," "godless," "atheistical." It aggrieves their conscience they say, because it does not provide the theological instruction for their children. Now it is needless to say that our school system is chargeable with this negative offence which is its chief excellence. It does not teach any theological system of religion. It aims at being unsectarian—at interfering with no religious belief. Men of all creeds may take advantage of its benefits. The system teaches reading, writing, arithmetic and such like useful branches, and it inculcates by the example of teachers and precepts of recognized text books the fear of God and the necessity of a life of morality. "But this," cry the adversaries, is not enough. It should teach our peculiar religious beliefs. We do not say the food you supply is poisonous in itself, but it is not wholesome unless served up with our theological sauce. The system should provide for paying the cook for making and serving up this sauce whenever it is required—no matter if three-fourths of the Province believe that it is soul destroying poison. The seed you sow is not weeds, but it is not good unless mixed with the seed from our religious sowing sheet and the system should provide for paying the sower who mixed his seed with the grain found in our theological granary—no matter tho' three-fourths of the people believe that grain to be the seeds of deadly error. The charge against the system is not that it teaches positive error, but that it teaches no religion. It is condemned for what it does not do. It does not provide the means of paying teachers to propogate certain definite theological tenets. The objectors are left perfectly free to disseminate their own religious views but they pretend to be aggrieved because the government does not undertake to do it for them, through the educational system. Now, supposing a community of Chinese settled in our country. They wish to bring up their children in the faith of Buddhism. They say to the officers of the law, we cannot conscientiously send our children to your school because in it they do not teach the tenets of our religion. Now, we claim the right of getting a teacher for ourselves, a man after our own heart, setting up an idol in our school-houses and teaching our children the practices and doctrines of our idolatrous worship. We will teach reading, writing and arithmetic along with it, but Buddhism we must have taught or we will have nothing. Suppose in these circumstances the teacher draws all his grants from the treasury, would the government and the people who countenance the

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government, not be supporting idolatry? And what, in that case, becomes of the consciences of three-fourths of the people of the Province who believe that it is wrong for the government to lend itself to the dissemination of any theological opinions whatever? Are they to be forced into a compromise against their will? We leave men's conscience free until they compel us to do wrong. Now we leave the Buddhist free to teach his doctrines as he pleases, but he must not teach us to become a known abetter to such teachings by paying taxes for its support and endowing it through the government.

Suppose a man says to me, "I cannot conscientiously drink of the public water of the city because it is not mixed with whiskey." I would say, "Well, draw off the water and mix it for yourself. You are at perfect liberty to do so." But, he replies, "That is not what I wish. I demand a grant from the city treasury to enable me to mix the water with whiskey." Then I reply, "You violate my conscientious convictions, for I cannot pay taxes or support men in office for the purpose of supplying whiskey to any one." Water we can conscientiously supply to all with the firm belief that its use will injure no one. Water drugged with whiskey we can conscientiously give to none, though we leave them free to mix it for themselves. Education undrugged by any sectarianism we can conscientiously give to all, and leave them free to drug it as they like; but education drugged with what we regard as poisonous sectarian doctrines we can conscientiously supply to none. We may leave men free to do wrong. We dare not help them to do so.

Are we virtually to turn our school-houses into churches or chapels endowed by the public money? A separate school system which takes the public money, whether from the treasury or from the hands of the tax-gatherer with the avowed purpose of teaching sectarian religious beliefs in perverting the right functions of civil government and converting our schools into theological seminaries.

There are three cases where the separate school system may be supposed to work. (1.) Where all the people in the section are of one religious denomination. The teacher is hired, the people tax themselves and draw their proper allowance from the country. They collect the local tax under the law, and the teacher is entitled to his provincial grant. Every rate-payer is agreed that the children shall be taught Hinduism or some other ism. The teacher does his duty. A little reading, writing and arithmetic are taught, but special attention is given to inculcating the religious tenets of Hinduism or some other ism. He sets up idols in the school, teaches the children all the genuflexions of pagan worship, initiates them into all the mysteries of Hindu mythology and reveals to them the æsthetics and meaning of all kinds of sacrifices—human not excepted, and the argument is equally good supposing we substitute Presbyterianism, or Universalism, or Methodism, or Roman Catholicism for Hinduism. Now these might say when they receive their public moneys: "We are only getting back our fair proportion of the taxes with which to teach our own system of religion. It is true, the teacher draws a grant from the Provincial Treasury, but then we are the consumers of dutiable articles. It is true we have drawn from the county fund, but then we pay county rates. It is true we have assessed a local tax, but we all cheerfully pay the assessment." Now we may admit that all is true, and still we would conscientiously protest against government lending itself to directly disseminate the tenets of any ism, either pagan or Christian. We feel that in the supposed case the evil of separate religious schools would be at its minimum. It is evident in the first place that if the school moneys are to be divided upon the principle that every religious body is entitled to receive its own tax back again, it would be

much better not to levy it by government interposition at all. Let each man keep his own money and teach his children what he likes. That is the fair result of such a system. But in the second place, we object to the government collecting or supplying funds to aid in turning school-houses into a heathen temple or sectary's chapel. The educational function of the Government is to educate citizens not sectaries.

2. There is a case where the large minority of a school section feel they must have their catechism taught to their children. They secede from the general school system and hire a teacher for themselves and get the benefit of their own taxes by assessment. Suppose the majority are Roman Catholics, and in the school all the tenets of the faith are taught. The minority are Presbyterian and they get a teacher who drills their children in the shorter catechism, or some worse one. Both these teachers draw from the treasury say \$120 a year for their services, in propagating their peculiar beliefs. Now, if this is a weak section, as in the majority of cases no section is strong enough to support two schools, it is a squandering of public money. It is likewise paying a premium for division in every section, for Wesleyans, Baptists, Episcopalians, Quakers, Universalists and others have a perfect right to do what Roman Catholics and Presbyterians do. And this is a great practical difficulty which has been met in Ontario and Quebec, than has been caused by the conscientious scruples of Roman Catholics in any section of our province under the present system. But our principle objection to endowing the majority on religious grounds is that it is really saddling us with the worst evils of church establishments without giving us any of their benefits.

3. There is the test case. There is one, or it may be, there are a few families living in a community where the great majority differ from them in religious beliefs. They are not able to make up the supplement necessary to secure a teacher. It is true we may suppose the case in our favor. The one family is Roman Catholic in the midst of a Presbyterian community. One school is in full blast under a thorough orthodox teacher. The Roman Catholic cannot send his child to that school to get the shorter catechism, John Knox and Luther thrust down his throat. He may get exemption from the local tax, as is the remedy provided in Ontario, but see he is deprived of the benefits of education, and is compelled to pay the general tax to propagate what he believes to be deadly error. Now this is just the case where government should protect the conscience. It is the weak that should be defended, not the strong. Our school system meets the case. It says you cannot provide a teacher for yourself, but we open a school where no positive error is taught. We guarantee that nothing will be done there to undermine the religious belief of your children, and yet they will get the education which will fit them for being good citizens, you can supplement that education with a religious training to make them good Christians if you like. Let us sum up thus: a separate school system will compel us and others to pay through the government taxes for the propagation of opinions that we regard as deadly error. It will tend to break up school systems unnecessarily. It will crush the conscience just at the very time when it needs protection. The great majority of our people believe that religious teaching is the work of the church, not of the state. Their conscience will be aggrieved if the taxes levied from them are appropriated to teach religious error in any form.

Our school system is and ought to be elastic enough to permit the full influence of the religious life of the teacher being exercised over the pupils. It ever provides for formal religious exercises, attendance upon which, however, are not to be compulsory.

But we are pointed to Ontario for a model to copy. We are asked to break up our educational machinery and reconstruct it after the Ontario

pattern. Now let us remember these things. Separate schools are only yet on their trial in Ontario. Hitherto the educational machinery of that Province has not worked any more harmoniously than the public school system of Nova Scotia. Our system in spirit has wrought out grand results in Prussia and the New England States. If we saddle ourselves with separate schools, and find we have made a mistake, with all the influence of the priests and bishops in the Dominion against us, it will be next to impossible to retrace our steps.

Let us copy Ontario and other countries where education prospers in one thing. Teachers trained at Normal Colleges take precedence of all others. This must be the case with us if we would raise the standard of teaching and make our Normal School more than an expensive ornament. Doctors and lawyers and ministers require professional training. Why should the instructors of youth be allowed to teach without a diploma from some Normal College, or a certificate of service equivalent thereto.

Let us look at some of the apparent defects in the working of our school system.

1. *The political character of the Council of Public Instruction.* It is an unhappy arrangement that makes the members of Government perform the double functions of executive council and council of public instruction. This is the cause which more than any other mixed up educational matters with party politics. This is the reason why the government is so often tempted to sell us and our educational interests for a few votes to keep themselves in their places of power and emolument. Important educational offices are very likely to be filled with pliant-political tools. The fear of making political enemies deter the government from making the needful reforms about academies and inspectors. A council of public instruction partially independent of the executive would materially help though not cure this state of things. If the present council would only be patriotic enough to commit suicide and substitute a non-political council in their place I should be very happy to perform the funeral obsequies and thousands of Nova Scotians would sing their requiem with joy.

If the present order of things is to continue why not make education a public department whose head would have a visible and responsible place in Parliament. The people could then question and decapitate the head when the council did wrong.

2. *Inferiority of professional attainments in the teacher.* The number of third class teachers throughout the country is something alarming. I do not suppose the cause of education would suffer, though no more such licenses were granted. And to remedy this evil I would suggest a bonus to every teacher trained in a Normal School, and likewise to those who had continued in office a certain number of years, and certified as having been efficient. I would also make a grant as formerly for four or more superior schools in every county. This grant to be competed for yearly—the state of the building and apparatus—the average attendance of scholars and the efficiency of the teaching, and perhaps the grade of the teacher—all to be elements considered in making the award. I am free to say that under a proper system of inspection such schools would stimulate the people, trustees, scholars, and teachers. In this case one law has been legislation backward.

3. *Defective inspection.* Every one whose opinion is worth anything sees the necessity of getting fewer and well-qualified men to do the work of inspection for the whole province. You can pay each of them \$1200 a year and they will cost no more than the present eighteen do. We would have live men instead of figure-heads.

4. *Non-attendance at school.* It appears that last year there were 250 school sections that had no school during the year. About 29,000 children, between 5 and 15 years of age in the sections where schools were taught, did not attend. Now, in sections where there is enough rateable property, and say from 12 to 30 children or over, school half the year at least should be kept, and with such sections as failed to organize under the school law, compulsion should be used. When the case is one of failure to get a teacher, let the matter be clearly certified by the inspector or board. Where the rate-payers have unanimously voted no school, let a reasonable amount be directly assessed above the county rates and collected in the regular way to be distributed among poor sections. When a majority has voted down the school, let the minority be empowered to hire a teacher and assess a reasonable amount for the half year. It might be well also to empower trustees to fine the guardian or parent of absentees from school the amount per head according to the county appointment of which they deprived the school, unless they could furnish a valid excuse for their absence.

5. *Exemption of rateable property from liability of assessment.* Nothing has been more injurious to the country schools than the exemption of \$1,000 worth of property belonging to persons over sixty years of age. There are many sections that I know which have lost one-half to two-thirds their property by this arrangement. The old men keep nominal possession of the property just to escape the tax, while the sons really own it. It is not only a temptation to dishonesty, but it is weakening our school sections, so that they cannot pay reasonable salaries to teachers. As a shrewd common sense countryman remarked to me, "This amendment has tinkered the bottom out of our school law. The sooner it is soldered up the better."

In conclusion we may ask, will granting separate schools remedy any of the practical defects in the working of our school system? Will it improve the teaching qualifications? Will it improve the inspection? Will it increase the attendance? Will it enhance the value of rateable property? Most assuredly not. We can improve our present system without interfering with the principles on which it rests, just as well as we would any separate school system which could be adopted. Our aim should be not re-organization but improvement, not experiments at compromise, but concentrated effort for greater efficiency. It is not a new style we need; but some earnest energetic men to work the one we have.

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## ADDRESS

*To His Honor the Honorable Adams George Archibald, Lieutenant-Governor  
in and over Her Majesty's Province of Nova Scotia and its dependencies,  
&c., &c., &c.*

We, the members of the Educational Association of Nova Scotia, met in annual Convention, desire to present our congratulations to your Honor and to express our unfeigned satisfaction at seeing a native of our Province, who has served his country with ability, fidelity and success, promoted to the high office of Governor.

Our satisfaction is generally enhanced by the fact that as a representative of the people from a patriotic sense of duty your honor lent the full weight of your talents and character to the establishment of the present system of public education in Nova Scotia, which in spite of some defects, incidental to law in general and its administration, has conferred very substantial benefit on our country. We are thoroughly persuaded that your Honor is fully alive to the value of education in promoting the intellectual, moral and material interests of any community, and facilitating the operation of Civil Government; and we are assured that in the high position to which Providence has raised you, you will exert all your personal and official influence to aid in perfecting and consolidating our free public school system of education.

In the discharge of the duties incumbent on us as teachers of youth, we cheerfully recognize it to be our duty to inculcate by precept and example sentiments of loyalty to our beloved Queen, and obedience to law and constituted authority. We are not without hope that such sentiments in the minds of the young, who enjoy the advantages of education, may be the strongest defence of the country in the hour of trial and danger.

Wishing you all personal happiness and much success in your Government, we, in the name, and by the authority of the Association beg to subscribe ourselves your honor's humble servants.

On behalf of the Association.

A. McNUTT PATTERSON, President.  
D. M. STERNS, Secretary.

## REPLY.

GENTLEMEN, — I thank you sincerely for your address; it is a peculiar pleasure to me to be assured of the kind feeling of your association.

I recognize most fully the high position of Teachers of youth. I appreciate the immense influence they exercise in forming the principles and moulding the character of our population. The men and women of a few years hence, will be largely what the instruction they receive at school shall have made them. Upon our teachers therefore, to a very great extent, depend the future of our country.

It is a pleasure to me to know, and I have had a good opportunity of knowing that as a body, the teachers of this Province will compare favor-



ably with those of any country. They discharge their duties in the main with vigor and efficiency. They feel the responsibility of their office. They know that education applies to the moral as well as the intellectual nature of their pupils, and while they do not neglect the more direct and immediate duties of their position, I am glad to receive the assurance that they inculcate principles of loyalty to the Sovereign and respect for the constituted authorities of the country, believing as they justly do that the prevalence of such sentiments will be a source of strength to us in the hour of trial and danger.

I thank you for the kind allusion to the connexion I have had with the legislation on which our system of education is based. I cannot take credit for having done much towards bringing about the establishment of the Free Schools of Nova Scotia, but I certainly have never allowed the opportunity to pass of doing what was in my power to do. No doubt there are imperfections in the law—there are in all laws—but there can be no question as to the immense strides which education has made in the Province since the law was enacted. Look at old England, where the best efforts of the best part of English society have been made for hundreds of years in this cause. Some years ago I had an opportunity, on a festive occasion, in the metropolis of the Empire, in a large body of noblemen and gentlemen assembled in one of the large halls of London, to refer to the Common School system of this country: and I assure you I had great satisfaction in being able to tell these gentlemen that little Nova Scotia—unknown almost by name to many of them—had in her short national life far outstripped the people of England, with all their intelligence and all their wealth, in the provision they had made for the education of their children. I was able to say that in this province every child, the poorest child among us, had a right to be taught the elements of a common school education, and that with few, very few, exceptions, every child could enjoy that right by resorting to a school within a convenient distance of its own home. I fear it will be long ere an Englishman will be able to say as much of the people of his land. I trust it may be long before we shall lose the right to say as much of ours.

Accept, gentlemen, my thanks for your kind wishes towards me personally. In return, let me give expression to a wish appropriate to the season of the year, that you may enjoy health and happiness and success in your several spheres of duty.

(Signed) ADAMS G. ARCHIBALD.