

consequently the second point overlooked by "A Teacher" is, that the greater part of the discussion is occupied with an enquiry into the law of co-efficients. "A more serious objection," he says, is to be found in the fact that the equation with which the assumed value of $\cos p A$ is combined, is itself an assumed equation. If it is allowable to prove one assumption by another, what may we not prove?" Some of your readers, I think, will be disposed to look at this as a more amusing objection, and I trust the following elucidation will convince my worthy monitor that the aspect of the matter is not at all so grave as he imagined.

I observe, then, that it is possible to reason upon an assumption as accurately and as validly as we can upon a matter of fact. This we do daily in the ordinary affairs of life, and if such reasoning were not admissible there it would not be legitimate in mathematics, which is nothing else in all its branches, from the elements of Euclid to the Quaternions of Hamilton, but the quintessence of common sense. To take an illustration of reasoning upon an assumption, we may suppose the moon to be made of cream cheese, and upon that supposition we may proceed to calculate the number of men that would eat it at a meal.

Now I am sure that "a teacher" would admit that the process of calculation might be as logical in this case as it would be were we not to calculate upon known facts, the number of men that would drink 10 dozen of *Champagne*. He would further admit that if the hypothesis in the first case were proved to be a fact, the figures would represent the actual number of men that would consume this mass of cheese, though determined originally from an assumption. This shows at least, that there is no *a priori* objection to reasoning founded upon an assumption; although it would be fatal to forget that conclusions founded upon hypotheses remains hypothetical themselves until the hypotheses are proved to be true. Whenever that is done the conclusions logically derived from them must also be accepted as true and valid, as if they were originally based upon the simplest intuitive axioms. It seems to me that I made no further use of assumptions than is warranted by the above principles. I assumed, (and this is nothing but a common application of the inductive method) that $\cos p A$ might be developed in a certain series of mixed powers of sines and cosines of A . And also that $\sin p A$ might be developed in another series. These two expressions for $\cos p A$ and $\sin p A$ are marked I. and II. respectively.

Now, by multiplying both sides of I. by $\cos A$ we get the equation III., and on the principle that if equals be multiplied by the same quantity the products are equal, III. must infallibly be true if I. is true, and is likewise indubitably false if I. is false. Or in other words, if we could by any process prove I. to be either true or false, III. would be held as true or false although originally founded upon I. when we did not know that it was true or false. The same remarks are applicable *in toto* to II. and IV. If, now, III. and IV. be true, by subtracting the one from the other we get V., which, by the axiom that equals taken from equals give remainders which are equal, must be true. Of course, if either or both III. and IV. be false, then V. is likewise false; but III. and IV. are true if I. and II. be true, and therefore the truth or falsehood of V. follows from the truth or falsehood of I. and II. We now observe that the exponents in V. follow the same law as they do in I., and we conclude then that if the assumed laws in I. and II. are true for any value of p , the law of I. holds for the next greater integral value of p .

By actual calculation we know that the law is true when $p = 2$; the investigation shews that it must be true when $p = 3$, and therefore true for the next greater number 4, and so on generally.

Surely it is not necessary to inform "A Teacher" that equation II. is not an independent assumption, being derivable immediately from I. I put it in that form for simplicity of coefficients, with the absolute values of which I was not at that stage concerned, and

consequently I wrote b for $a \left(\frac{1 - \frac{2}{p}}{p} \right)^{p-2} a_2$, and so for the

others. This is not an undue assumption, and I would scarcely have imagined it possible for any one to suppose that anything else was included, which, however, "A Teacher" seems to have done. Otherwise, I can attach no meaning to his expression, "the equation with which I. is combined is itself an assumption."

Believe me to be,

Yours very truly,

JOHN MACLEOD.

To the Editor of the Journal of Education.

FALL RIVER, HALIFAX COUNTY,
November 28, 1868.

Sir,—At the last annual meeting of the rate-payers of this Section the subject of compulsory attendance was submitted for consideration, and discussed at length, after which a vote was taken on the resolution as given in the *Journal*, and passed unanimously. In fact, such unanimity prevailed that some considered it the "sine qua non" of the Education Law. If such an Act as the given Draft Bill could be passed into law, I think it would enlist the sympathy and hearty co-operation of all lovers of learning and Free Schools in Nova Scotia.

Yours truly,

H. D. MUNRO, Teacher.

To the Editor of the Journal of Education.

Sir,—We beg to acquaint you with the fact that at the annual meeting held in this Section, the clause inserted in the *Journal of Education* asking the opinion of the rate-payers upon compulsory attendance of pupils in the Public Schools was put to the meeting and decided in the affirmative, almost unanimously.

There were twenty-four rate-payers in attendance, and but two offered any opposition. This is a sure harbinger that a compulsory law for educating the masses will receive a warm reception in this Section.

We would also remark that it is our resolve to petition the Legislature, at its next sitting, that compulsion be imposed upon parents, and others having children in charge, to send their children to school, for it is our humble opinion that a compulsory law must be placed upon the statute book ere the present School Law can become a success in many Sections in this Province, and no Section, we will venture to assert, shows forth the want of a compulsory law more than our own.

We are, Sir,

Your obedient servants,

MICHAEL MCGINTY,
JAMES DOMNELLAN,
JOHN LACY, } Trustees.

West Caledonia, Queens Co., N. S.,
December 8th, 1868.

EDUCATIONAL INTELLIGENCE.

A T H O M E.

Kings Co.—The close of another school year reminds me of my duty to report upon the condition of the Public Schools in this County.

I am happy to state, at the outset, that although the educational operations have not been marked by any striking incidents, yet steady progress is apparent.

The number of schools that have been in operation during the year is greater than at any former period. In the Winter Term 71 departments were at work. These were taught by 80 licensed teachers and assistants, classified as follows:—

	1st.	2nd.	3rd.	Total.
Males.....	18.....	38.....	7.....	63
Females.....	9.....	7.....	1.....	17
	27	45	8	80

During the Summer Term there were 86 departments, in which 90 teachers were employed, as follows:—

	1st.	2nd.	3rd.	Total.
Males.....	15.....	15.....	7.....	37
Females.....	27.....	23.....	3.....	53
	42	38	10	90

There are now 90 sections in the County, one having been recently added to the former number by the division of Kingston. One, viz., Lake Paul, has at present so sparse a population as to render it impossible to organize, or if organized, to support a school. Seven are without school-houses of any kind, and a few others, from a variety of causes, had no school during the winter. In 4 sections this arose from inability to procure suitable teachers.

In the Summer only one section in which there is a school-house was without a school; but Upper Canard and Centreville, through a little mismanagement, did not participate in the public funds.

The number of children enrolled in the Winter Term was 4028, being an excess over the corresponding term of 1867 of 591, and 1519 more than in 1866.

In the Summer Term the number amounted to 4275, being 208 more than in the summer of 1867, and 915 more than in 1866.

The whole attendance of all the scholars amounted to, in days—

Winter Term....	256,000	In 1867.....	198,356
Summer.....	273,953	do.....	238,676

Compared with the attendance in 1865 these numbers show to still greater advantage.

The percentage of enrolled pupils daily present was, in the Winter, 61; in the Summer, 57½. This is more gratifying than in the previous year, but considerably below the point that should be attained. Whilst the individual advancement of pupils, the progress of the classes, the proper classification of the school and its comfortable management, the efficiency of its teaching, and the amount to be received from the County funds, all urge a regular attendance, it seems strange—almost unaccountable—that so much indifference should exist in relation to this matter. Whether any measures may be adopted to ensure a greater degree of regularity is worthy the attention of all who feel an interest in the intellectual culture of each child in the Province.

Six schools were in competition for the superior grant during the Winter, and six in the Summer Term.

The award, as you are aware, was made to Lower Canard, Upper Church Street, Lakeville, and Somerset, for the first term. Respecting the decision for the term just closed, I am not yet