

## JOURNAL OF



## EDUCATION,

Province of

Ontario.

VOL. XXIV.

TORONTO, OCTOBER, 1871.

No. 10.

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## THE RECENT EXAMINATION PAPERS.

To the Editor of the "Journal of Education."

SIR,—It has occurred to me that, if you could find room in the *Journal of Education* for a few notes on the recent examination papers in Algebra and Natural Philosophy, they might be of service to teachers who are preparing themselves to compete for first class certificates. I have, therefore, drawn up a few such notes, which I now send you.

You will, perhaps, allow me to take this opportunity of noticing a statement which was published, during my absence from Toronto, in one of the city papers, to the effect that all the difficult theoretical questions in Algebra, in the examination for second class certificates, were taken from Sangster, and none from Todhunter, though Todhunter's Algebra for beginners, equally with Sangster's Algebra, is authorized for use in the Public Schools. This is a trifling complaint,—so very trifling, that, on my return to Toronto, two weeks after the charge had been made, I did not think it necessary to address any communication, in reply, to the newspaper in which it appeared; but a few words on the subject may, perhaps, lead those who may hereafter feel themselves impelled to undertake the part of criticising the examination papers, to exercise some care in regard to their statements.

The complaint is that all the difficult theoretical questions in the second class papers in Algebra were taken from Sangster; none from Todhunter. People would naturally suppose, from such a statement, that the paper contained a large number of theoretical questions. The fact is, that there were only four theoretical questions in it altogether. Of these, one, the last in

the paper, was not taken into account in fixing the total number of marks on which the average prescribed by the Council of Public Instruction, in order that a candidate may receive a certificate of a certain grade, was calculated. This question, therefore, could be an injury to no candidate, though it might be a benefit to some. Of the remaining three theoretical questions, one was taken neither from Sangster nor from Todhunter; and the other two are found in Todhunter, as well as in Sangster. And, to crown all, though Todhunter is authorized as a text-book to be used in schools, Sangster's Algebra is the only text-book specified by the Council of Public Instruction in their programme for the examination of teachers. In the revised programme for the examination and classification of teachers, prescribed on the 28th of March, 1871, under the heading, "Minimum qualifications for second class Provincial certificates," will be found the following:—"Algebra: To be acquainted with the subject as far as the end of section 153, page 129, of the authorized text-book (Sangster)."

I have not named the gentleman on whose letter I have been commenting, because I wish, as far as possible, to avoid personal controversy. My object is simply to prevent statements, which are unfounded, from being received throughout the country.

I am, Sir, your obedient Servant,

GEORGE PAXTON YOUNG.

TORONTO, 7th Sept., 1871.

EXAMINATION FOR FIRST CLASS PROVINCIAL CERTIFICATES OF QUALIFICATION AS PUBLIC SCHOOL TEACHERS, COMMENCING 1ST AUGUST, 1871.

## ALGEBRA.

Note 1.—The question 2 (c) is the first in the paper that presents any difficulty. It was correctly solved by Mr. W. H. Ross, though his solution was wanting in simplicity and elegance. From the manner in which  $x$  and  $y$  are involved in the given equations, it is easily seen that, if we assume  $y = tx$ , and substitute this value of  $y$ ,  $x$  will be obtained in each of the equations in its first power. It may, therefore, be eliminated; and the resulting equation in  $t$  will be a quadratic.

Note 2.—Question 4, though by no means difficult, was solved by very few of the candidates. A correct solution was given by Mr. T. B. Woodhull. The following extract from his papers will be sufficient to show his method:—