at this stage, I need hardly say, the method mentioned by Miss Stoney is the correct one to adopt.—Yours faithfully,

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TO THE EDITOR OF THE *Mathematical Gazette.*

SIR,—My letter was written under the influence of warm enthusiasm for the main text of the Report on the *closer correlation* of Mathematics and Physics teaching in our schools. On p. 2 of that Report the chief obstacle to such correlation is assumed to be the lack of laboratory training amongst our mathematical teachers. I fear I venture to think it is also to some degree due to unwillingness amongst our science teachers to spend the necessary time in class in order to make our children use practically the knowledge which the mathematical teachers have (probably) already given them theoretically. Surely it is a delight to most children to find that their dry mathematics "are of some use"! Boys, and most girls from good modern schools, at say 13 years of age, know enough algebra to be able to multiply $(1+x)(1+y)$ or to divide $\frac{1}{1+x}$. It is not proposed, I believe, that such a subject as Heat should be taught at a younger age than about thirteen.

This is very elementary compared with the use of logarithms or a slide rule, and yet it is all the mathematics which I presuppose in my example and which is considered too abstract by Mr. Berridge.

Assuming that this amount of abstract knowledge has already been given, then my point was that the Physics teacher could well correlate it and shew its use in a concrete form. Certainly, to train the class in the practical use of their mathematical knowledge will be at the cost of a little time at first—though I believe at a great saving of time in the end. Soundness of training and not questions of time are however the chief consideration at such junior ages. This training will also shew the students how to allow for probable errors in their results due to micrometer screws, et cetera.

Of course it is true that experimental errors are likely to be greater in such experiments than those from using approximate formula; but are we to state so *ex cathedra* to our children, or are we to give them the means of estimating the effects of the various errors in the results for themselves? Using no such elementary mathematics as I suggested, I do not know how Mr. Berridge proposes to explain to a class that the vague and inaccurate theoretical method suggested in the example given in the Report is justified by probable errors in the micrometer screw! It is just those of my students who find Mathematics and Physics difficult who are most confused and made to feel unsound if I tell them all their work a few weeks before depended on tacit assumptions which I had induced them to slither through unconsciously.

If the school teaching of Mathematics and Physics is to be correlated, why not begin from the earliest stages of the Physics and use the Mathematics the children already know? The chief object of the Report may be to get our Mathematical teachers to make use of concrete Physical illustrations, but is not also one object of the Report to encourage us to continue no longer to teach the "emasculated kind of Physics without Mathematics which would not give a headache to a caterpillar" which Sir J. J. Thomson warned us is the present tendency?

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