A clever boy or girl will not be confused by such a treatment of the problem as that given in the Report, but, in my experience, the average pupil is only confused by such tacit approximations in method. In this particular case of expansion this vague confusion in such a pupil's mind causes trouble when the gaseous laws are considered, viz.: why should the volume of a gas be referred back to 0° C. and not to the temperature of the room? Or difficulties arise in problems where the Fahrenheit scale is used, and so on.

The example is—"A brass rod is 25 metres long at 10° C., find its length at 50° C., if the coefficient of linear expansion of brass is ·000018."

One metre of brass at 0° C. heated 1° C. expands so as to have length

$$1+\cdot000018 \text{ metres.}$$

One metre at 0° C. heated to 10° C. expands so as to have length

$$1+10\times\cdot000018 \text{ metres.}$$

$\therefore$ one metre at 10° C. if cooled to 0° C. has length

$$1/(1+10\times\cdot000018) \text{ metres.}$$

$\therefore$ 25 metres at 10° C. if cooled to 0° C. has length

$$25/(1+10\times\cdot000018) \text{ metres.}$$

One metre of brass at 0° C. when heated to 50° expands so as to have length $1+50\times\cdot000018$ metres.

$\therefore$ $25/(1+10\times\cdot000018)$ metres at 0° when heated to 50° expands so as to have length $25\dfrac{1+50\times\cdot000018}{1+10\times\cdot000018}$.

This can be worked out by logarithms, or else continued

$$=25(1+50\times\cdot000018)(1-10\times\cdot000018) \text{ nearly} \quad \ldots\ldots\ldots\ldots(a)$$
$$=25(1+40\times\cdot000018) \text{ nearly} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(b)$$
$$=25\cdot018,$$

and the degree of approximation at stages (a) and (b) can be seen at once by any student familiar with elementary approximate methods in Algebra.

This is certainly somewhat longer than as given in the Report, but if our object be to correlate Mathematics and Physics at school, why should we teach our Physics both vaguely and illogically from the given definitions merely in order to avoid giving our boys and girls a little practice in elementary mathematics? Yours, etc.,

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TO THE EDITOR OF THE *Mathematical Gazette.*

SIR,—In a recent issue you threw out a suggestion for a pillory for examination questions. I beg to enter the following:

"The external measurements of a closed box are 36 inches, 2·2 feet, and ·50$\dot{6}$ yards. Find the cubic space within if the wood of which it is made has a uniform thickness of one-tenth of a foot."—Board of Education, 1904.

Note the useful 'it,' the mixture of units, and the recurring decimal. English grammar, ordinary common sense, and physical possibility smashed in one question! Can anyone beat this?

Some obvious and rather painful reflections are suggested by the fact that the question emanates not from an obscure and ill-paid schoolmaster, but from the Board of Education. Yours faithfully, ALEPH.