CORRESPONDENCE

To the Editor of the *Mathematical Gazette*

DEAR SIR,—I have been looking with interest at note 2873 in the current issue of the *Mathematical Gazette*. The moral seems to be that the concept " inextensible string " contains a double idealisation: first the overt condition that the extension is negligibly small; plus secondly a concealed condition that no part of the energy of deformation is elastically recoverable. Though not all strings which are inextensible in the overt sense comply with the second condition, I should have thought that there would be little difficulty in devising " strings " which effectively do: but whatever may be the truth about this it does seem plain that if we are to continue to set problems of this kind the nature of the assumptions should be fully explored. The question I wish to raise is rather whether such problems should continue to find a place in our instruction. As the note justly says, they are students' exercises: and that is all they are. Latterly I have been teaching mechanics at Sixth Form level after thirty years spent in other pursuits: and the impression left on me by a renewed acquaintance with school textbooks of mechanics for mathematicians is that their content is governed by the difficulty of constructing problems. Examiners have learnt the trick of constructing problems on certain lines: and boys are trained to solve problems of types chosen for no reason except that these are the problems which examiners have learnt to construct. For example, at the end of the note there is a reference to Newton's Law of Collision. This was an observation of interest at the time when it was made. How accurate the " law " may be I do not know—nor, I suspect, does anybody else: it is of so little importance that a physicist would have to be badly at a loss for occupation before he wasted time in investigating it. But it affords a basis for constructing problems, so the textbooks devote a chapter to dealing with such problems. Except as a test of accuracy of workmanship, a quality which can be tested without bringing in billiard balls, these problems are at their best worthless: and at their worst they require Newton's law to be applied to situations for which it has never been tested, or involve fantastic assumptions such as that one ball hits two other balls simultaneously.

At the Oxford Conference in April, 1957, on Mathematics and Industry there was some talk about getting the physicists and engineers to produce " genuine " problems in mechanics: I would like to know whether any progress is being made to that end.

Yours, etc., J. E. BULLARD

https://doi.org/10.2307/3612554 Published online by Cambridge University Press