MATHEMATICAL ASSOCIATION

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existence of such an index as 0·3010300. There is a valuable section on limits of error ; but the method of basing the theory on formulae to be memorised is open to objection ; also we prefer the method of upper and lower limits to that of relative error when teaching young students. The book ends with sections on Graphs, Theory of Numbers, and Problems, and a large collection of harder Miscellaneous Exercises.

Workshop Arithmetic. H. A. DARLING. (Blackie.)

This little book should prove very useful for the class to which it appeals. All kinds of different things have been drawn upon to furnish examples, from engineering to cricket. This makes the book 'live' and interesting. A curious misprint occurs throughout the closing pages, "lateral" for "literal." The explanation of logarithms is rather short, as is also the important section on contracted methods with decimals.

New School Geometry. R. DEAKIN. (Mills & Boon.)

The excellent plan of leading up to a theorem by means of well-planned exercises is adopted in this text-book. The author, however, seems in several cases to be doubtful to which side to give his adherence—the Euclidean or non-Euclidean, for several pairs of alternative proofs are given. This savours of an attempt to please everybody, and is a mistake, especially when the alternative proof, *e.g.* Prop. 9, has to be taken out of the order in which it is put in the book. One of the best portions of the volume is the careful way in which congruent triangles are led up to and explained. In fact the pupil, carefully drilled, should all through be quite convinced of the truth of a theorem before the demonstration is set before him ; and this cannot fail to help him to understand the demonstration. Sufficient practical work is given concurrently to interest the pupil; and a selection of 150 riders brings the book to a close.

The printing leaves nothing to be desired, but the pagination, reminding one of the Todhunter of one's youth, is poor. A Theorem seems to gain dignity when it has a page to itself, or at least starts a fresh page ; also it is a matter of opinion whether a proof in which abbreviations are barred is anything like so easily assimilated as one which, by the use of abbreviations, can be taken in at a glance.

School Geometry. CHAMPION and LANE. (Rivingtons.)

This book follows a sequence of its own as regards the early propositions, and does not lose in value thereby. The propositions are well set out, with large clear diagrams, abbreviations being freely used from the start, and each proposition starts on a fresh page, giving the book a nice appearance on first opening. We do not meet with any practical work, however, until page 57, and then we get a batch to page 72, in the form of propositions, instead of applications of the preceding fundamental facts. Areas come before the circle, and here the first few propositions of Euclid's Book II. are treated with scant ceremony, and although "quoted freely in the remainder of the book," are dismissed in about half a page. We have always found it one of the most difficult things in teaching to got a student to understand the relation of these propositions to the mensuration ideas of the equivalent algebraical identities. The difficulty is that a student, being told of the relation, insists subconsciously in thinking of AB^2 as $A \times B \times B$ instead of x^2 where x is the length of AB. The scant treatment afforded to this section will hardly improve matters. The circle is satisfactorily handled, but the objection raised to the limit definition, in which the two points defining the secant are supposed to *coincide*, applies also here. If the limit definition is used it must have more careful treatment. The book closes with a section on Ratio, and here again the fundamental algebraic identities are dismissed in half a page. Several of the propositions given in this section seem redundant, as they follow naturally from the fundamental algebraic identities.

The book closes with a large number of sets of miscellaneous riders which are distinctly good.   J. M. CHILD.