

(4) The jack-screw problem is said to be "a problem based on facts." Granted. Also "it was . . . not intended to be a complete and actual problem at all," and it is implied that one would be "lacking in common sense" "to consider such a computed result as finding actual application in the practice of raising buildings." Exactly. That was why it was chosen for criticism. The book aims to show the pupil "what the shop problems are."\*

(5) The reviewer is accused of "gross misstatement" of the problem on spiral gearing and malicious intent on his part is implied. The reviewer would point out that of the four results above mentioned, one, the lead of the spiral, is not even mentioned in the solution of the problem as given by the author of the book. The other three quantities may be determined by the formulas: number of teeth =  $N = Dp \cos Y$ , blank diameter =  $D + 2/p$ , circular pitch =  $\pi/p \cos Y$ . Whether any single one or all three of these quantities are to be found from the given data, the determination does not involve operations equivalent to multiplication followed by division by  $\pi$ . This is true also of the determination of the dimensions of the driven gear, and of the numbers of the milling cutters to be used, both of which are given in the book, though not mentioned above. The question at issue is not one of "short cuts" in computation, but of comprehension of the principles and formulas underlying the computation. The reviewer sees no cause to retract any portion of his criticism of the problem.

CHARLES N. HASKINS.

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#### SHORTER NOTICES.

*Arithmétique générale.* Par EMILE DUMONT. Paris, A. Hermann et Fils, 1911. 8vo. xvii+275 pp. 10 francs.

THIS volume presents a treatment of certain number fields and the ordinary laws of operation within these fields. The book is divided into four parts, of which the first treats of

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\* Introduction, p. viii.