

(pages 65–71), the use of logarithmic paper, and the proper treatment of physical data.

Typographical errors are numerous. Among other errors “the trajectory of the projectile of a German army bullet” (page 396) is particularly offensive. The statement (page 214) that the principle of logarithms “had been quite overlooked by mathematicians for many generations” is not correct, for the principle was known even to Archimedes and appeared and was discussed in books of the sixteenth century. The development of negative, fractional, and irrational numbers (page 355) is the logical one, and not from “the history or algebra.” In the treatment of trigonometry the constant use of all six trigonometric functions would seem to be open to criticism. There appears also repeated emphasis upon rather trivial schemes for memorizing formulas and even the signs of ordinate and abscissa (or of  $\sin \alpha$ ,  $\cos \alpha$ , and  $\tan \alpha$ ).

Doubtless in the customary instruction in freshman mathematics too little attention has been paid to the functions  $y = ax^n$ ,  $y = a \sin mx$ , and  $y = k \cdot a^x$ , and to the elementary applications of these functions and of the conic sections. Possibly in the future some way will be found to include in the freshman course, while preserving a logical treatment of the mathematical material, some applications which will be practical from the standpoint of the freshman. The present text does not appear to be successful either in logical treatment or in the presentation of practical material adapted to first-year students.

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*An Introduction to the Theory of Automorphic Functions.* By LESTER R. FORD, M.A. (Harv.) G. Bell and Sons, Limited, London, 1915. viii+96 pp. Price 3s. 6d.

THIS is No. 6 of the Edinburgh Mathematical Tracts and has its origin in a series of lectures on automorphic functions given by Mr. Ford to the Mathematical Research Class of the University of Edinburgh during the spring term of 1915.

Mr. Ford has endeavored to bring out “the concepts and theorems on which the theory is formed, and to describe in less detail certain of its important developments.” The tract is therefore conceived in the nature of an orientation rather than that of a treatise, and contains six chapters: I, Linear transformations; II, Groups of linear transforma-