discussion of difficulties and of fundamental principles, especially those involving the interrelations between formulas, would clarify the subject. This book coordinates much material that has never been conveniently arranged and should be valuable to students in any field of applied mathematics where interpolation is used or where it is necessary to obtain the approximate summation of the actual data where only typical individual values are known.

J. S. ELSTON

Handbuch der angewandten Mathematik. Herausgegeben von H. E. Timerding. Vol. I. *Praktische Analysis,* von H. von Sanden. Zweite verbesserte Auflage. Leipzig and Berlin, B. G. Teubner, 1923. 195 pp.

The first edition of this book appeared in 1914, and was reviewed in this BULLETIN (vol. 15 (1914-15), pp. 256-259). In the present edition numerous small changes have been made throughout; proofs have been simplified and algebraic work arranged in a manner more easy to follow. A few new sections have been added, in particular: graphical methods now include a discussion of nomography and a larger number of examples, differentiation and integration are derived in connection with formulas for interpolation, expressions for the limit of error in analytic functions are obtained, and a much fuller treatment of numerical integration is added. As in the former edition, both press-work and proof-reading have been well done. Unfortunately the quality of paper used is such that the page has a less pleasing appearance than in the first edition.

VIRGIL SNYDER

Life Contingencies. By E. F. Spurgeon. Published by the authority of the Institute of Actuaries. London, C. and E. Layton, 1922. XXVI + 477 pp.

This book replaces the old Institute of Actuaries Text Book, Part II, which has been the fountain head of knowledge on this subject for thirty-five years in America and England and to some extent in Europe. Of course the new book is more comprehensive, as some additional material is added, the most important being that dealing with functions depending on select lives. The main difference in treatment is that a knowledge of the mathematics covered in the previously reviewed book is assumed throughout, whereas the old book war so arranged that a large part of it could be read without such knowledge. This work will be indispensible to actuaries. As to others, it will be most valuable to anyone interested in statistical subjects connected with the mortality rate.

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