SHORTER NOTICES

Versicherungsmathematik. By Friedrich Böhm. 2d edition. Vol. 1. (Sammlung Göschen, no. 180.) Berlin and Leipzig, de Gruyter, 1937. 151 pp.

This small, almost vest-pocket edition contains a surprisingly large amount of very useful information in actuarial mathematics. In this Volume 1, no attempt is made to divide the year into fractional parts, and minor details are omitted. However, the reader gets an excellent survey of the subject, even up to annuities and insurances upon two lives, without, however, an introduction to Makehamization. Of special interest to American readers will be the treatment of reserves, this treatment being somewhat comparable with that in the Menge-Glover text. The gross premium is, however, analyzed into *four* constituents—a 2 per cent charge for collection of premiums, in addition to net premium, first cost amortization, and administration or renewal expense. The examples shown for entrance ages of 40, 50, and 60 put first cost amortization at about 5 to 7% of the gross premium, and administration cost at about 1 to 3%. The Zillmer restriction of initial cost of 3.5% of the insurance is mentioned as 35 per mille. Readers not familiar with the per mille symbol, with its double zero at the base may read this as 35%, and be startled in imagining a $350 initial charge for writing a $1000 policy. Gross reserves are discussed from equations of the form: gross reserve plus present value of gross premiums equals net reserve plus present values of administration and collection costs. A second restriction attributed to Dr. A. Zillmer maximizes the provision for initial cost as that provided by the "$x+1$" method—full preliminary term. The book is well supplied with tables; it has an index at the end and excerpts from insurance laws, and on page 7 a short but well selected bibliography. Altogether, Dr. Böhm has given us a very interesting book.

E. L. DODD

Funzioni Analitiche. By Francesco Tricomi. Bologna, Società Tipografica già Compositori, 1936. 6+110 pp.

Funzioni Ellittiche. By Francesco Tricomi. Bologna, Società Tipografica già Compositori, 1937. 9+274 pp.

These two books are nos. 14 and 15 in a series of monographs on applied mathematics published under the auspices of the National Council of Research and edited by Nicola Zanichelli.

The first of these volumes has as one of its purposes the presentation of the fundamentals of the theory of functions of a complex variable in sufficient detail to serve for the study of the elliptic functions as treated in the second volume; and in both volumes the author has endeavored to develop the theory in such a way as to make the applications to particular concrete problems as easy and direct as possible. In this he has succeeded admirably. It is no mean task to select from the wealth of the literature on analytic and elliptic functions the material that would best suit the author's purpose. The selections have been made with discrimination and have been treated skilfully. It is particularly refreshing to read a book on elliptic functions free from the mire of countless formulas that so often clutter books on this subject.

For the technical student wishing to acquire a working knowledge of the fundamentals these books are to be recommended. Furthermore, the student of pure mathematics will find the author's point of view invigorating.

A brief outline of the contents of the two books follows.