

## SHORTER NOTICES

*Versicherungsmathematik. I: Elemente der Versicherungsrechnung.* By Friederich Boehm. (Sammlung Göschen.) Berlin, W. de Gruyter, 1925. 144 pp.

This is an elementary text on the mathematics of life insurance, the subject being treated particularly from the point of view of German and continental practice. It is divided into four chapters. The first deals with the elements of the theory of compound interest—just enough to carry through the accumulation and discount applications necessary in the theory of life insurance.

The second chapter starts in with the life table and forty pages are devoted to questions concerning expectation of life, life annuities of various kinds and single and annual premiums for ordinary and limited payment life, temporary, and endowment insurance.

The third chapter develops the theory of premium reserves including a discussion of net level premium reserves and Zillmer's formula for reserves; in particular, the full preliminary term method of Zillmer is explained.

Chapter IV deals with annuities and insurance on joint lives, including the calculation of single and annual premiums and reserves. Some little space is given to mixed forms of insurance, widows' pensions prior to remarriage and annuities to orphans.

This little book is evidently intended as an introduction to the theory of life insurance, the formulas being developed in considerable detail and practically every formula immediately illustrated by a numerical example. The author is not familiar with the international code of symbols adopted and carefully adhered to by most actuaries, or else he has intentionally modified these symbols. This is particularly noticeable in the use of the summation sign for the  $N_x$  and  $M_x$ , the use of the letter  $R$  instead of  $V$  to designate reserves, and the use of the symbol for endowment insurance for temporary insurance. Similar modifications have been made for the present value and accumulated value compound interest functions. These changes are unfortunate and quite uncalled for and are bound to cause confusion to all students who get their introduction to actuarial theory through this book when they come to read other text books on this subject. The use of the summation sign for the  $N$  and  $M$  commutation symbols makes the formulas quite cumbersome in appearance. It is to be hoped that if a new edition of this book should appear the author will adopt the symbols of the international code of actuaries. Apart from these criticisms the book is well written and may be regarded as a good introduction to actuarial theory.

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