SHORTER NOTICES

Théorie Mathématique des Assurances. By P. J. Richard et E. Petit.
Second edition, revised throughout and brought up to date. Paris,
Librairie Octave Doin, Gaston Doin, Editeur, 1922. Volume I, 455 pp.;
Volume II, 320 pp.

These two volumes appear in the series entitled ENCYCLOPÉDIE SCIENTI-
FIQUE–BIBLIOTHÈQUE DE MATHÉMATIQUES APPLIQUÉES. The first vol-
ume, book one, contains two chapters on the theory of probability, with
development of elementary theorems, the theorem of Bernoulli, Baye's
rule, and a consideration of insurance from the point of view of a game
of chance.

Book two contains a chapter on life and mortality tables and gives
definitions of the rate of mortality and derived functions. The effects of
age, sex, occupation, climate, selection, and other causes on the rate of
mortality are explained. Various methods of constructing and graduating
the rate of mortality are described, including graphical, mechanical and
analytic adjustment.

Several proposed laws of human mortality including the formulas of
De Moivre, Gompertz and Makeham and other generalizations are given.
The old and the modern French tables for annuitants and for insured are
described together with methods of adjustment and graduation to Make-
ham's law.

Chapter II is divided into four parts. The first part relates to annuities-
certain and life annuities and develops the general theory of various types
of annuities and their expression in terms of commutation symbols. Part
two deals with last survivor annuities and annuities to x after the death
of y. The theory of single premium insurance benefits on one life and on
joint lives is developed in part three and the last part deals with a variety
of forms of insurance and gives methods of deriving the net single and
annual premiums.

Chapter III consists of five parts devoted respectively to gross premiums
and methods of loading, mathematical reserves, contracts of insurance
and alterations, dividends in insurance, and concludes with a study of the
mathematical insurance risk and the stability of insurance based on the
theory of risk.

This volume concludes with a very good six page bibliography of life
insurance literature.

The second volume is divided into two books. The first book is devoted
to insurance on the individual and consists of five chapters.

The first chapter develops very fully the fundamental probabilities in
the theory of insurance against disability, the construction of disability
tables, of rates of mortality among the disabled, and so on. A brief
account is given of published statistics and of disability tables in use. It
is curious that no mention is made of Hunter's *Disability Table*, the one
most used in this country.