Tables of Applied Mathematics in Finance, Insurance, Statistics. By
James W. Glover. Ann Arbor, Mich., George Wahr, 1923. xiii
+ 676 pp.

This book of tables is designed for use in connection with college text-
books on finance, insurance and statistics. The tables are quite complete
and extensive for use in finance and insurance and would be very useful
in many statistical investigations. The tables are divided into four parts,
of which the last part, comprising almost 200 pages, is a photographic
reproduction of Bruhn's table of logarithms to seven places.

Part I contains tables of compound interest functions (to eight places)
and their logarithms (to seven places) for thirty-two rates of interest,
those up to and including $1\frac{1}{8}$ per cent. for periods up to 200 and for higher
rates up to 100. Some of the tables are published here for the first time.
The tables include practically every conceivable period and rate of interest
which would be involved in converting interest. There are also auxiliary
tables to be used when interest is converted very frequently and even
instantaneously. Tables of the sinking fund function are also included so
that all of the six fundamental functions are tabulated. Logarithms of
the factor $1 + i$ are also given to twenty places for certain rates of interest
for computing very unusual values of functions.

Part II contains values of life insurance and disability functions,
including ordinary commutation columns based on the American Experi-
ence table and at three rates of interest. Tables of functions to be used
in computing terminal reserves, paid-up and extended insurance values,
etc., are given for the rate 4 per cent. which are not included in Dawson's
Derived Tables. Hunter's Makehamized table and commutation columns
for two lives for work with joint lives, and Hunter's disability tables are
useful divisions of this part.

Part III contains tables to be used in statistical work, some of which
are excellent and very desirable. The most important are the tables of
ordinates, areas and derivatives (second to eighth) of the normal curve,
the logarithms of the Gamma function and squares, cubes, square and
cube roots (of numbers up to 1000). One of the criticisms of the reviewer
would be of the selections of some of the other tables given in this part.
However, the latter tables occupy a relatively small space and it would
be difficult if not impossible to select and include a set of tables for statistical
work which would suit everyone.

Another criticism which applies to the whole set of tables, but particu-
larly to this part, is of the lack of explanation of the functions tabulated.
A short reference in the preface to a particular use to be made of certain
ones of the tables is, with about one exception, about all the explanation
offered. A short explanation and an application of each table given in
this part (similar to those given in the preface of Pearson's *Tables for
Statisticians,* etc.), given preferably on the page just preceding the table,
would add much to the usefulness of the book. As a single example, the
use of the page of logarithms of Bernoulli's numbers from $n = 1$ to $n = 200$
will probably be very much affected by the lack of an explanation, and some

who have used Bernoulli's numbers before may have to make a preliminary and independent investigation to make sure of the notation used here.

The only other criticism is in regard to the omission in several cases of all signs of the negative part of a characteristic of a logarithm, especially in a table or among tables where a positive characteristic of more than 9 is not unexpected. The scheme followed in printing the tables no doubt had most to do with these omissions, but nevertheless the omissions are unfortunate.

The tables as a whole are excellent both in intrinsic value and typography, and are bound to be adopted widely as a standard in work for which they were designed. The feature which will probably commend them most is their completeness for work in finance with logarithms. Logarithms are a practical necessity in such work and a four-place table is in most cases scarcely less absurd than no table at all. Yet there is little doubt but that few of the many attempts made throughout this country to give courses in finance leave a satisfactory impression of the use of logarithms in such connections upon the mind of the student. There should be no further excuse for this kind of a situation with this book available.

The author's reputation for carefulness and reliability is enough to warrant the reliability of the tables. The author states in the preface that it is scarcely possible to compile so large a set of tables without a few errors creeping in somewhere.

C. H. Forsyth

Iamblichvs Theologovmena Arithmeticæ, edidit Victorivs de Falco. Lipsiæ in Ædibvs, B. G. Tevbneri, MCMXXII. xvii + 90 pp.

This booklet is a new edition of the Greek text of the *Theologovmena arithmeticæ* which is attributed by some critics to Iamblichus. It is edited after a careful re-examination of the various extant manuscripts and is accompanied by notes written in Latin. This publication will be of interest to students desiring to enter more intimately into the study of the relations of mathematics to philosophy and mysticism than is usually done in our histories of mathematics. It deals with the theologic aspect of numbers and their mystic relations to the various heathen deities, and with obscure cosmological speculations.

Florian Cajori

Vektoranalysis. By Siegfried Valentiner. Third edition. (Sammlung Göschen 354.) Berlin, Vereinigung Wissenschaftlicher Verleger, 1923. 132 pp.

This little manual is the slightly modified, rewritten edition of the original. The chief changes are in the use of smaller type and closer setting which has apparently reduced the amount. The only serious cut however is in the omission of the useful collection of formulas at the end of the preceding edition. Slight changes of the text occur, but none of importance.

J. B. Shaw