Reelle Funktionen. Erster Teil: *Punktfunktionen.* By Hans Hahn. Leipzig,
   Akademische Verlagsgesellschaft, 1932. xi+415 pp.

As is indicated in the preface, this is hardly a new edition of the earlier
(1921) *Theorie der reellen Funktionen* by the same author. Instead it is an
entirely new treatment of the subject which has been occasioned, as the author
remarks, by the great developments in this field during the past decade. The
first glance through the pages of this book suffices to convince one of the
truth of this assertion. The analytic point of view has been abandoned entirely,
and has been supplanted by one which is purely set-theoretic. The result is
admirable. All demonstrations are concise and short with no wasted words or
repetition of arguments, a fact which attests the excellent organization of the
material and at the same time presents a convincing argument for the set-
theoretic point of view.

The treatment is complete in that nothing is presupposed on the part of
the reader beyond a certain maturity of thinking capacity. The first chapter
comprises a logical foundation for the notions of function and set and treats
fundamental questions concerning systems of sets, cardinal numbers, and
ordered sets. This is followed by a chapter devoted to point sets and including a
treatment of abstract topological spaces, separable spaces, and complete
spaces. Chapter 3 deals with the notion of continuity and, in the reviewer's
opinion, contains one of the most interesting features of the book—a treatment
of the most general type of transformation, not even necessarily single-valued.
The author introduces the notion of upper and lower semi-continuity for such
transformations and obtains substantial results without further restriction.
This is followed by a natural definition of continuity and then, step by step,
the author develops the properties of single-valued transformations, hom-
eomorphisms, continuous functions, discontinuous functions, and function
sets. The last two chapters are devoted to Borel sets and Baire functions, and
to analytical sets, respectively; and they comprise, in addition to the perhaps
better known results of Baire and Borel, also many of the more recent con-
tributions from a host of authors including Suslin, Lusin, Sierpinski, Mazur-
kiewicz.

While hardly suitable as a textbook for the beginning class in real functions
in most American universities, this book could be used to good advantage in a
more advanced one. It is admirably suited, however, to the needs of the mathe-
matical reader wishing to familiarize himself with the very recent develop-
ments in the field of real functions, since it brings him right up to date, includ-
ing references to many articles as late as 1931.

G. T. WHYBURN

Probabilités et Morphologie. By A. Sainte-Laguë. Paris, Hermann, 1932. 30 pp.

This is a brief account of the elements of mathematical statistics (the prob-
ability curve, etc.) and of their application to such problems as the estimation
of the racial purity of a given population. The treatment is entirely elementary.
There are some interesting remarks on the inferences that can be drawn from
simultaneous observations on a large population regarding the variation in
time of a single individual.

F. D. MURNAGHAN