N. U. PRABHU, *Stochastic Processes*. Macmillan, New York, 1965. xiv + 233 pp. $7.95.

Review by MEYER DWASS

Northwestern University

In his preface, the author explains that "the purpose of this book is to give a formal treatment of some of the important classes of stochastic processes, emphasizing concepts and results." If by "formal" is meant avoiding measure-theoretic foundations and placing emphasis on loose, discursive qualitative descriptions, then indeed the book is "formal." This is not the book from which to learn about separability, martingales, local time, stable processes, continuity of Brownian motion, potentials, etc., etc. For the student who wants a quick look at some of the surface elements of stochastic processes, renewal theory, Markov chains and fluctuations with many useful examples and many reasonable problems, this may be the right book. This is a rather slim volume and I believe that almost everything done here is contained as a small part of the excellent books by Feller (Volumes I and II) [1] and Karlin [2]. Stylistically and mathematically I much prefer the Feller and Karlin books, but the student who finds them hard going the first time around, may find that parts of Prabhu's book serve a useful purpose in preparing the way. After an introduction, the main topics in Prabhu's book are the following: 2nd order and stationary processes, their mean square continuity, differentiability, integrability and harmonic analysis (Chapter 1). Countable Markov chains and some sequential analysis (Chapter 2). The Chapman-Kolmogorov formalistics of diffusion (Chapter 3). Compound Poisson, birth-death and related "discontinuous" processes (Chapter 4). Some ergodic phenomena of renewal theory (Chapter 5). Fluctuation theory for maxima of sums of random variables (Chapter 6 and other places through the book).

REFERENCES

[1] FELLER, WILLIAM (1957 and 1966). *An Introduction to Probability Theory and Its Applications*, **1**(2nd edition) **2**. Wiley, New York.
[2] KARLIN, SAMUEL (1966). *A First Course in Stochastic Processes*. Academic Press, New York.