BOOK REVIEWS

SAMUEL S. WILKS, *Mathematical Statistics*. John Wiley and Sons, New York and London, 1962. $12.95, £5.13s. xvi + 644 pp.

Review 1, by WASSILY HOEFFDING

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The general nature of this book is well described in the following quotation from the author's preface: "... I have made a selection of basic material in mathematical statistics in accordance with my own preferences and prejudices, with inclinations toward trying to make a unified and systematic presentation of classical results of mathematical statistics, together with some of the more important contemporary results in a framework of modern probability theory, without going into too many ramifications." An early version of some of the material was issued under the same title in 1943 in lithoprinted form by the Princeton University Press. The book is intended for readers with good undergraduate backgrounds in mathematics. It starts out with a brief account of the foundations of modern probability theory, followed by chapters on distribution functions, mean values and moments, sequences of random variables, characteristic and generating functions, and special distributions. The statistical part begins with sampling theory and asymptotic sampling theory, followed by three chapters on statistical estimation (linear, nonparametric, and parametric) and two on hypothesis testing (parametric and nonparametric). The final chapters deal with sequential analysis, statistical decision functions, time series, and multivariate statistical theory. There are over 400 problems most of which are very helpful to the student and a good bibliography of 19 pages (which serves also as an author index).

As the quotation from the preface indicates, the emphasis is on "classical" rather than on more recent results. It is, of course, debatable which results are important enough to be included in a book which covers so vast an area. I think it would have been better if more attention had been given to those developments which have yielded fairly general and systematic methods for constructing statistical procedures with desirable properties and which bring out connections between seemingly unrelated topics. Books and papers containing important results of this kind are mentioned but often without enough indication of the content to arouse the reader's interest. These remarks apply especially to the treatment of estimation and hypothesis testing. The chapter on parametric statistical estimation deals mainly with the Cramér-Rao inequality, maximum likelihood