KEEPING, E. S., *Introduction to Statistical Inference* (D. Van Nostrand Co., Princeton, N.J., 1962), xi+451 pp., 66s.

Professor Keeping's book is a text for a one-year course (90-100 hours) for students having a knowledge of elementary calculus—second or third year students. It is unusually complete in that it is difficult to think of a topic which is not treated, at least briefly, but which one might like to see included in such a course. As would be expected of a widely ranging book at this level, many results are stated without proof but it is by no means a "how to do it" book. In addition to the usual elementary probability theory, standard distributions, and classical estimation and testing, one finds, e.g. the cumulants and k-statistics, sampling techniques, sequential and non-parametric procedures, fixed, random and mixed models as well as latin square and incomplete block designs considered, and a last chapter which looks at multivariate problems and introduces stochastic processes. There is a laudable concern for the power of the tests discussed and the required non-central distributions are introduced. Appropriate tables, a large number of exercises (with answers) and a thirty page appendix on various mathematical topics are included as well.

The price paid for the virtue of comprehensiveness is, of course, the brevity of some particular parts; one cannot have everything. However, one might reasonably suggest that the briefer the treatment the more precise should be the statements. This book is somewhat marred by puzzling, misleading, or false statements, e.g. both the sample and population moments are defined to be the "rth moment of X about zero"; "If T is sufficient, so is any function of T" (p. 125); the variance of a maximum likelihood estimator is asserted to be the Cramér-Rao lower bound; in discussing the Mann-Whitney U-test, it is not clear at given points just what alternatives are being considered and while one statistic is described as the test statistic, we are instructed to reject for small values of another.

R. N. BRADT

WALSH, J. E., *Handbook of Non-parametric Statistics* (D. Van Nostrand, Princeton, N.J., 1962), xxvi+549 pp., 116s.

Dr Walsh has undertaken a handook covering the non-parametric procedures developed up to 1958. If this be considered a large order (even for 500 pages), it should be noted that this is in fact the first of a two-volume handbook (although no explicit indication of this is found on the cover nor on the title page).

It is a handbook in the sense that individual procedures are described, with the reader in mind, but not derived. It is somewhat more, for in addition to the descriptions there are rather extensive general discussions of each class of procedures concerning, e.g. the type of problems appropriate, tie-breaking methods, possible extensions by randomisation or interpolation, sample size determination, sensitivity to what few assumptions are made, and remarks on the relative efficiencies of the procedures given.

After a short introduction, the system of notation to be used and the format for the presentations are set forth. The fourth chapter on statistical concepts and terminology is followed by seven chapters presenting the non-parametric procedures under the following titles: Tests of Randomness, Tchebycheff Type Inequalities, Estimates and Tests for Expected Values, Estimates and Tests for Population Percentiles, Distribution-free Tolerance Regions, Non-sequential Results for Distributions from Ungrouped Data, and Sequential, Decision, and Categorical Data Results for Distributions. To note what one will *not* expect to find, the second volume is planned to contain material on the 2- and k-sample problems, analysis of variance, regression and discrimination, multivariate analysis, matching and comparison problems, and tests of symmetry and extreme observations.

The presentation of each procedure is in a highly condensed standard form; often only the appropriate adjective of a standard sentence is given and obvious punctuation marks and verbs are sacrificed. While this may be the only way to reduce the bulk to manageable size, to the occasional user who must decode item-by-item the style will seem cumbersome. (It is initially somewhat disconcerting to find so frequently that the first entry under RESULTS is " None "—until you learn that this means that no supplementary operations of the data nor special notations for stating results are needed.) In each of several cases in which the prescription was suspected of being incomplete or ambiguous on first (or second) reading, careful decoding yielded a full statement.

Anyone seriously interested in the use of non-parametric procedures will find this a very useful book to have available. For convenient use as a reference it needs to be read as well as consulted. The bibliography of some 600 items is a notable dividend.

R. N. BRADT

GOLDBERG, R. R., *Fourier Transforms* (Cambridge University Press, 1961), viii+76 pp., 21s.

This is an extremely well-written book, packed with information.

In Chapter 1 the author enunciates classical results, on such topics as Lebesgue integration, assumed in the later chapters. In Chapter 2, on Fourier transforms in the class L^1, he first gives the standard theorems on inversion, and follows them with more modern results centering around Wiener's theorem on functions whose Fourier transforms never vanish. In Chapter 3 he gives the classical inversion theory for the class L^2 (Plancherel's theorem). Chapter 4 is devoted to certain extensions of Wiener's theorem: Chapter 5 gives Bechner's characterisation of the Fourier-Stieltjes transforms of non-negative differentials.

There are valuable references to recent work in these chapters, and an Appendix of 11 pages gives (without proofs but with references) an account of generalisations of the theory to functions on a locally compact abelian group.

I have two criticisms. Of the notations

$$\int\left(\int f(x, y)dx\right)dy \quad \text{and} \quad \int dy \int f(x, y)dx$$

for an iterated integral, the author uses the second; and he writes of an iterated integral being absolutely convergent, a statement which I regard as ambiguous.

H. D. URSELL

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