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A. E. Sarhan and B. G. Greenberg, Editors, *Contributions to Order Statistics*, John Wiley and Sons, Inc., New York, London, 1962. $11.25 and £4/0/5. xxv + 482 pp.

Review by S. K. Mitra and C. R. Rao

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The twin purposes of bringing out this volume are, according to its editors, "to assemble scattered materials to help applied research workers learn how to use the tools of order statistics" and also "to provide materials and references that will facilitate further research in methodology". The volume starts with a foreword by H. O. Hartley, an excellent introduction (Chapter I) by H. A. David, and consists of eleven other chapters, with a total of twenty-nine sections written by sixteen authors. The most significant contributions of this volume are, however, its rich collection of tables relating to order statistics (covering nearly one-third of its printed pages) and the rather extensive bibliography (with more than 300 references) which follows at the end.

This book is divided into two parts. Part I, comprising 11 sections, is concerned with the general theory of order statistics, while in Part II, with 18 sections, the emphasis is on applications of the theory to several specific parent populations. This distinction is, however, only superficial for by applications is only meant evaluation of particular integrals. It is disappointing that there is no adequate discussion of "live examples" demonstrating the need for, and the advantages in, using methods based on order statistics.

Chapter 2 (Ogawa) gives the exact distribution of order statistics and also their asymptotic forms. Chapter 3 (Lloyd) provides the theoretical inspiration for at least 50% of the book. It indicates how for a location and scale parameter family of distributions, the knowledge of the variance covariance matrix of the standardised order statistics could be used to derive the best linear systematic estimates (linear function of order statistics) of these parameters. These computations of the Generalised Least Squares estimates involve inversion of matrices of order n (sample size). Useful approximations are therefore derived in Chapter 4. Jung (4A) considers linear systematic estimates with coefficients determined by a continuous differentiable function defined in the interval (0, 1) and derives the estimate in this class with the least asymptotic variance. Blom (4B) treats the order statistics as sample quantiles and obtains linear unbiased estimates with optimum asymptotic properties. Blom's article therefore duplicates the work of Ogawa (Chapter 5), though the reader will find it difficult to establish the identity of results owing to differences in the formidable array of notations used. Gumbel writes a useful summary of his book, *Statistics of Extremes* in