61[K].—B. SHERMAN, "Percentiles of the ω_n statistic," *Ann. Math. Stat.*, v. 28, 1957, p. 259–261.

The statistic

$$\omega_n = \frac{1}{2} \sum_{k=1}^{n+1} \left| L_k - \frac{1}{n+1} \right|, \qquad 0 \leqq w_n \leqq \frac{n}{n+1},$$

is one of several which have been suggested in connection with the null hypothesis that x_i, $(i = 1, \cdots, n)$ is a random sample from the uniform distribution and the L_k are the lengths of the $n + 1$ subintervals of the unit interval defined by the ordered sample. In most cases of interest, the x_i are the probability transforms of observations on a random variable with a continuous distribution function. Based on the distribution function derived by the author [1], the 99th, 95th, and 90th percentiles of ω_n to $5D$ for $n = 1(1)20$ have been computed, and are given in Table I. Values of two standardized forms of this statistic (based on the exact and asymptotic mean and variance, respectively) which are asymptotically normal are given in Table II to $5S$ for the same percentiles as in Table I and for $n = 5(5)15(1)20$. The author points out that the rate of convergence to the limiting values is slow.

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1. B. SHERMAN, "A random variable related to the spacing of sample values," *Ann. Math. Stat.*, v. 21, 1950 p. 339–361.

62[K, X, Z].—E. D. CASHWELL & C. J. EVERETT, *A Practical Manual on the Monte Carlo Method for Random Walk Problems*, Pergamon, 1959, 152 p., 23 cm. Price $6.00.

This is volume I of the publisher's series "International Tracts in Computer Science and Technology and Their Application". It is devoted to a direct and elementary attack on the Monte Carlo principle (that is, the principle of using simulation for calculation and recording the sample statistics obtained from the simulation) in random walk problems, such as mean free path and scatter problems. Many examples are given in the text, and an appendix is added listing twenty more or less typical problems in which the Monte Carlo method was used at the Los Alamos Scientific Laboratory.

Computational details are given and in many cases flow charts are included. No full machine codes are given, but most of the calculations were done on the MANIAC I computer at Los Alamos, and coding from the descriptions given and the flow charts is probably easier than any attempt to translate a MANIAC I code to a code suitable for another machine. A disappointingly short chapter on statistical considerations is included; the reader should be warned that this is not a suitable exposition of the theory or even the practice of the statistical handling of the statistics gathered in his simulation. However, it also is treated from a definitely computational point of view, including flow charts, and is interesting from this point of view.

An interesting small chapter titled "Remarks on Computation" is also included.

There is a section on scaling, a section on debugging, a section on special routines, a section on a Monte Carlo device for determining the square root of r, and a section on a Monte Carlo device for the cosine of an equi-distributed angle. The random number routine is the familiar routine of selecting the middle digits of the square of a quasi-random number; it is frowned on by many random-number specialists. The logarithm routine presented depends on the power series expansion of the log, with restriction of the size of the arguments to assure fast convergence. An exponential routine is given as a quadratic approximation with scaling of the argument. A cosine routine is given through the use of a trigonometric identity and a truncated power series for the sine of a related angle. There is no detailed discussion of the accuracy of any of these routines.

The exposition in this book is far from perfect, and the editors have included the following statement: "It is realized that many workers in this fast moving field cannot devote the necessary time to producing a finished monograph. Because of their concern for speedy publication, the Editors will not expect the contributions to be of a polished literary standard if the originality of the ideas they contain warrant immediate and wide dissemination." The reviewer feels that the present book in its present form is more than justified on the basis of this philosophy, and he recommends the book as a most valuable contribution to numerical analysis.

The chapter headings follow:

C. B. T.

63[L].—CENTRE NATIONAL D'ÉTUDES DES TÉLÉCOMMUNICATIONS, *Tables numériques des fonctions associées de Legendre. Fonctions associées de première espece,* P_n^m (cos θ), deuxième fascicule, Éditions de la Revue Optique, Paris, 1959, xii + 640 p., 31 cm. Price 5600 F.

The first volume of these Tables was reviewed in *MTAC*, v. 7, p. 178. The present second volume was designed to extend the range of tabulation from $\theta = 90°$ to $\theta = 180°$. In the process of constructing these tables, however, it was found desirable to increase the number of decimals and to add second and fourth central differences, thus facilitating interpolation. For this reason, the range up to $\theta = 90°$, already covered in the first volume, is included (in an improved form) in the volume under review. Perhaps because of the increase in size consequent upon increased numbers of decimals and added differences, tabulation has been restricted to $m =$