The binary numbers were converted to octal and stored as such in a decimal machine. This makes for a reasonable decoding time. The process is illustrated by the table below.

5 7 11	13 17 19	23 25 29	31 35 37	41 43 47	49 53 55
1 1 1	1 1 1	1 0 1	1 0 1	1 1 1	0 1 0
7	7	5	5	7	2

Thus the first number in the deck starts: 775572.... The cards were prepared by Miss Jean Atkins at the Duke University Computing Center on an IBM 7072.

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8 [G].—B. H. ARNOLD, *Logic and Boolean Algebra*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1962, 144 p., 23 cm. Price $9.00.

Logic and Boolean Algebra is an introductory text in which attention is mainly directed to an abstract development of the theory of finite Boolean algebras and Boolean rings. The first two chapters, dealing with propositional logic and Boolean functions, respectively, serve to provide illustrative material for the ordered sets and the general notion of an algebraic system in Chapter 3; the book then progresses through lattices (Chapter 4), Boolean Algebras (Chapter 5), Boolean Rings (Chapter 6) and ends in Chapter 7 with a treatment of normal forms and duality. The last chapter deals briefly with applications of Boolean algebra to the design and analysis of switching circuits and computers.

Chapters 5 and 6 form the core of the book. The main result of Chapter 5 is the theorem: Every finite Boolean algebra is isomorphic to the algebra of the set of all subsets of a finite set. In Chapter 6 the equivalence of Boolean rings with a unit and Boolean algebras is demonstrated, and it is shown that every finite Boolean ring is isomorphic to the ring of all n-tuples of Boolean constants for some n.

With the notable exception, in Chapter 1, of a confused discussion of object language versus meta language—a confusion compounded by a misuse of quotation marks and a failure to distinguish adequately names of linguistic objects from the objects themselves—the book is well written. Theorems are clearly stated, and their proofs are sensibly organized. There are numerous problems, many of which give results later used in the text.

The present volume, in short, constitutes a readable, if somewhat elementary, introduction to the study of abstract Boolean algebra.

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9 [K].—CHURCHILL EISENHART, LOLA S. DEMING & CELIA S. MARTIN, *Tables Describing Small-Sample Properties of the Mean, Median, Standard Deviation, and Other Statistics in Sampling from Various Distributions*, Government Printing Office, Washington 25, D.C., 1963, iv + 14 p., 26 cm. Price $0.20.

This note is a brief collection of ten single-page tables useful for the study of the

sampling distributions of some frequently-used statistics, with brief discussion of their construction and use. Their computation was motivated by the need for information on the behavior of these statistics (for example, their relative approach to normality with increasing sample size) for limited sets of data such as occur in measurement work where small numbers of specimens are used. The items tabulated are grouped as follows: (1) The probability level $P(\epsilon, n)$ of any continuous parent distribution corresponding to the level ϵ of the distribution of the median. This table is basic in the construction of the eight tables following. (2) Probability points of certain sample statistics for samples from six distributions: normal and double-exponential (mean, median), rectangular (mean, median, midrange), and Cauchy, sech, sech^2 (the median only, for these three). In all these nine tables, the sample size $n = 3(2)15(10)95$ and the probability levels are $\epsilon = .001, .005, .01, .025, .05, .10, .20, .25$. For the normal and double-exponential distributions there are also given the values of certain ratios useful for comparing the various statistics. (3) Probability that the standard deviation σ of a normal distribution will be underestimated by the sample standard deviation s and by unbiased estimators of σ based on s, based on the mean deviation, and based on the sample range. These results show striking biases in certain cases for some of the statistics in popular use. The sample sizes used for this table are slightly different from the others, all values to $n = 10$ and eight variously-spaced values to $n = 120$ being shown.

The user of these tables should not overlook the footnote on the first page. This warns that the probability level ϵ corresponds to the left tail for only the first table, and to the usual right tail for all other tables.

The explanations and implications in the brief text accompanying the tables are quite lucid and, unlike the facts of modern life, the price bears no relation to the effort in producing the tables, which anyone interested in detailed study of the distributions (or the results of such study) need, therefore, not hesitate in acquiring.

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10 [K].—D. B. OWEN, *Factors for One-Sided Tolerance Limits and for Variables Sampling Plans*, Sandia Corporation Monograph SCR-607, available from Office of Technical Services, Department of Commerce, Washington 25, D.C., 1963, 412 p., 28 cm. Price $5.00.

Tables are given of a quantity k which is used to define single-sample variables sampling plans and one-sided tolerance limits for a normal distribution. The probability is γ that at least a proportion P of a normal population is below $\bar{x} + ks$, where $\bar{x}$ has a normal distribution with mean μ and variance σ^2/n, and fs^2/σ^2 has a chi-square distribution with f degrees of freedom. The quantity k just described corresponds to a percentage point of the non-central t-distribution, and is extensively tabulated. Tabulations of other functions computed from the non-central t-distribution, and various expected values are also given. Many other applications are discussed and various approximations compared. One section gives the mathematical derivations, and there is an extensive bibliography which has been cross-referenced to several indices of mathematical and statistical literature.