been forthcoming, the interest has flagged in recent years, perhaps only temporarily.

There is no space here to report extensively on the contents of the individual articles. This reader found the paper by H. Kahn a very readable introduction to Monte Carlo sampling techniques. The paper by O. Taussky and J. Todd contains a particularly useful exposition of the generation of random sequences. H. F. Trotter and J. W. Tukey have contributed an article on "Conditional Monte Carlo for normal samples" which contains some very clever ideas by means of which the sample size necessary for satisfactory accuracy is reduced by the factor 5000 in a statistical application reported by H. J. Arnold, B. D. Bucher, H. F. Trotter and J. W. Tukey. The first of these two papers is rather difficult to read, partly because its authors adopt the extremely colloquial style frequently met in work on Monte Carlo. The results of J. H. Curtiss concerning the relative efficiency of Monte Carlo procedures and ordinary numerical methods for the solution of systems of linear algebraic equations raises the hope that there is still a future for Monte Carlo in this particular field.

This volume is almost indispensable to mathematicians doing research on or with Monte Carlo methods, and it can be highly recommended to readers who wish to find out what the Monte Carlo method really is.

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Automata studies. Edited by C. E. Shannon and J. McCarthy, Princeton, New Jersey, Princeton University Press, 1956, viii +285 pp. $4.00.

This collection of essays is divided into three sections: "Finite Automata," "Turing Machines," and "Synthesis of Automata." We will discuss the first two sections together and take up the third later.

The essays in these two sections treat mainly the mathematical and logical theory of quantized or discrete automata, as contrasted with analog machines. The automata of the first section have a fixed number of elements and states, while those of the second section have a changing, but always finite, number of states. An equally basic division is into *deterministic* and *probabilistic* automata, according to whether the state of an automaton is a deterministic or probabilistic function of the preceding state (including the inputs); this classification crosses the one used by the editors (e.g., there are two kinds of deterministic automata, fixed automata and Turing machines). Since realizability by a deterministic automaton is equivalent to (partial)