HAMMERSLEY, J. M. AND HANDSCOMB, D. C., *Monte Carlo Methods*. Methuen & Co., London, and John Wiley & Sons, Inc., New York, 1964. vii + 178 pp. 25s. or $4.75

and

SHREIDER, YU. A. (ed.), *Methods of Statistical Testing/Monte Carlo Method*, Elsevier Publishing Co., Amsterdam-London-New York, 1964, ix + 303 pp., $15.00.

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For a reader interested in Monte Carlo Methods, or for one interested in learning about them, the appearance of these two books should help fill a previous void. The concepts underlying the use of a Monte Carlo method, that is, using a mechanical device to create simulated observations, may be considered as old as the subjects of probability and statistics. However, the term "Monte Carlo Method" and the associated development of formal techniques came into use in the 1940's. The term had been used initially to identify the application of statistical computational procedures for obtaining numerical estimates for problems in nuclear physics. The initial Monte Carlo procedures could be considered similar in nature to those which could be employed to estimate probabilities of events in a gambling game; namely, one could play a game many times and use the relative frequency of occurrences of the events of interest to estimate the unknown probabilities. The term now usually signifies that estimates to solutions to problems are to be obtained by creating, by computational methods on a digital computer, a set of observations or experiments so that numerical characteristics of the computational observations or experiments can be the basis of the estimates.

Interest in the theory and application of Monte Carlo techniques has fluctuated. The introduction of high-speed digital computers caused many to predict great things for Monte Carlo techniques. Part of this prediction rested on the conjecture that the computational work associated with using a Monte Carlo technique ought to increase as a linear function of the dimension of the problem whereas classical numerical techniques would increase exponentially. In spite of significant improvements in the size and speed of computers, many Monte Carlo techniques are still not economically feasible or reliable on today's computers.

The appearance of these two fine books on Monte Carlo offer their reader, for essentially the first time, both a global picture of the techniques and literature of this relatively young subject and considerable detail about known results related to theory and application. Statisticians and numerical analysts should find many challenging and open questions by reading these two books. For example, they may be motivated to consider the implications and potential advantages of using nonrandom observations.

Although at first glance it may appear that there is considerable overlap in