high-speed calculator for the purpose of predicting the population trend during the period 1950 to 1960. The calculation is based on an elaborate model which is designed to simulate the demographic characteristics of the population by means of a large number of typical household units (approximately 5000). Each household unit represents a segment of the population, such as the married white female members between the ages of 20 and 25. The calculation proceeds in short time increments (months) until the final state is reached. The distribution of the population is computed at each time interval, taking into consideration the probabilities for such occurrences as births, deaths, divorces, etc. This process may be compared to the use of the Monte Carlo method for the solution of the diffusion equations in physics.

The reviewer believes that the authors would have better served the interests of future research in this field if they had devoted their discussion to a factual description of the results attained and difficulties encountered in carrying out this interesting but rather restricted experiment. However, as indicated by the somewhat pretentious title, this is not the primary emphasis of the book. The authors appear to stress the potential application of their techniques in the simulation of the total social-economic structure of the United States; and the book is promoted as a "pioneer work with a new approach to the scientific study and analysis of social systems, employing the major tools of modern research." The enthusiasm of the authors for their methods would have been more easily understandable if their calculations would have accurately predicted what the population distribution will be in 1970, rather than what it was in 1960.

H. P.

12[W, X]. MELVIN DRESHER, *Games of Strategy: Theory and Applications*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey. 1961, xii + 186 p., 23 cm. Price $9.00.

This small volume on zero-sum two-person games contains essentially the whole story on finite games and a great deal on infinite games. It can be profitably read by anyone with some calculus and the first chapter or so of matrix theory behind him. The author presents an elementary proof of the minimax theorem which also yields a good computational procedure for solving finite games. The properties of optimal strategies are then discussed in an exhaustive and illuminating manner, and various methods of solving games are described. The subject of infinite games, filling one-half the book, is treated next, and the topics covered include games with convex payoff functions, games of timing, and games with separable payoff functions. Numerous examples of such games, described in military terms, are given and their solutions discussed thoroughly. The author's style is pleasant, and the printing and layout of the book are attractive.

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13[X, Z]. L. LAYTON, H. SMITH & L. CHATFIELD, *Proceedings of Executive Seminar on the Use of High-Speed Calculators for the Solution of Naval Problems*, Applied

Mathematics Laboratory, David Taylor Model Basin, Washington 7, D. C., DTMB Report 1519, May 1961, iv + 355 p., 27 cm.

This book consists of twenty unclassified papers presented at a seminar at the Applied Mathematics Laboratory, David Taylor Model Basin, Carderock, Maryland, during 7–9 September 1960. Six additional papers classified "Secret" and one classified "Confidential" are not included in this volume.

The papers are oriented toward the use of high-speed computers in the solution of Naval Problems, with emphasis on applications drawn primarily from the Bureau of Ships activities. The general areas covered are: (1) engineering research, (2) management data analysis, (3) large-scale data processing, (4) operations research, and (5) tactical and strategic planning.

The text is double-spaced and easy to read; however, the quality of reproduction of the photographs leaves much to be desired.

There is not enough space to review each paper separately, so that the following statements may do some injustice to individual papers. Several authors report on their own practical experience, and do not give a perspective to the subject discussed. However, there are many excellent papers, especially "Computer Technology Outside the USA" by Dr. S. N. Alexander, "Nuclear Reactor Design Calculations" by Joanna Wood Schot, "Mathematical Calculation of Shiplines" by Dr. F. Theilheimer, "The Solution of Naval Problems on High-Speed Calculators" by Dr. H. Polachek, and several others. The paper, "On Teaching of Mathematics," by Dr. Francis D. Murnaghan, should be read by every mathematics teacher. All in all, the book offers valuable reading for both the beginner and the experienced computer specialist.

It is unfortunate that the remarks of the keynote speaker, Professor Howard H. Aiken were not recorded for this volume, since he is recognized as the father of modern computers.

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14[Z]. WILHELM KÄMMERER, *Ziffernrechenautomaten*, Akademie-Verlag, Berlin, 1960, viii + 303 p., 24 cm. Price DM 29.

This well-written book is based on a course of lectures given by the author at the Friedrich-Schiller University, in Jena. It discusses computer components, their organization into the various organs of a computer, the logical organization of computers, and the fundamentals of programming.

The first chapter discusses the binary number system and Boolean algebra. The second chapter is concerned with the nature of arithmetic operations and methods for realizing them by automatic devices.

Chapter three deals with the structure of an automatic computer and the requirements that must be imposed on it. It illustrates these requirements and methods by which they have been satisfied, by reference to various computers.

Chapter four discusses in some detail various well-known computer components and methods for organizing them into computer organs. The newer components are not treated.