are defined or even delimited. It makes exceptionally good use of elementary lattice-theoretical ideas, switching theory, and number-theoretic notions.

Since there are no study problems, the compendium, by itself, would be unsuitable as a textbook. It should be particularly valuable to researchers interested in novel and practical communication networks or in queueing theory.

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58[X].—I. M. KHABAZA, *Numerical Analysis*, Pergamon Press Ltd., Oxford, England, 1965, xii + 239 pp., 20 cm. Price 25s. (Paperbound).

This book is an elementary approach to desk and computer calculation, yet it contains much advanced material (sometimes a bit too compressed for easy reading by the beginner). The basic approach, after a pair of chapters on digital computers and desk machines, is classical via many interpolation formulas derived by symbolic operator methods. The book also covers the topics of zeros of polynomials, solution of ordinary differential equations, and simultaneous linear algebraic equations including latent roots and vectors, orthogonal polynomials, and a bit on Gaussian quadrature. Thus it contains much of the usual material.

The material is well presented, has many practical remarks to aid the beginner, plus worked examples and exercises; thus it could serve as a text in a junior level course (except possibly for its occasional emphasis on desk machine methods which are passé with American students).

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59[X, Z].—*4-ème Congrès de Calcul et de Traitement de l'Information*, Dunod, Éditeur, Paris, 1965, 413 pp., 22 cm.

This is a collection in French of more than fifty separate short articles presented at the 4th Congress of the Association Français de Calcul et de Traitement de l'Information (AFCALTI) held April 21–April 24, 1964. The subjects range from a treatment of singular integral equations to the training of management engineers.

The book is parsed into three main sections—reports, communications and conferences. The Congress touched the areas of combinatorial analysis, compilers, numerical analysis, systems, boolean algebra, digital and analogue computers, integral equations, programming languages for administration, and boundary value problems and variational methods. This record of the Congress is touted as being addressed to management specialist as well as mathematician, logician as well as technician and computing center director as well as student.

Perhaps because of the extent of subject matter and audience, the treatment of topics tends to be rather superficial, and as in most collections of conference papers,

variable in calibre. There are, however, a few more deeply interesting articles such as one by P. Broise on dealing with tree structures in ALGOL.

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60[Z].—F. P. BROOKS, JR. & K. E. IVERSON, *Automatic Data Processing*, John Wiley & Sons, Inc., New York, 1963, xxv + 494 pp., 24 cm. Price $10.75.

It is an unfortunate situation that books written about such dynamic subjects as electronic computers are obsolescent even as they are appearing in print. (The same thing can be said about the computers themselves.) How much more so is a book based on a course given from 1954 on. This book has many interesting features, but it is difficult to determine for whom it is intended. If it is for a programmer, then why the detailed discussion of manual and punched-card equipment? If it is for a systems analyst, then why all the details of coding and computer organization? There are also some noticeable omissions here, specifically a treatment of programming languages. On the other hand, the material covered is treated well. The programming notation introduced is difficult, but rewarding, once you master it. In summary, in using this book, one must pick and choose, bearing in mind the great strides made in the field.

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61[Z].—ERIC A. WEISS, *Programming the IBM 1620: The Hands-on Approach*, McGraw-Hill Book Company, Inc., New York, 1965, viii + 299 pp., 24 cm. Price $7.50.

As is stated in the preface, this book is intended to be an introduction to computers and programming for high school and beginning college students. The reader becomes acquainted with IBM 1620 machine-language commands by typing short programs directly into the computer, using read-write, data-transmission, and branch instructions. After graduation from the typewriter to punched cards, other machine commands, along with their SPS mnemonic codes, are covered. The last five chapters are devoted to an introduction to FORTRAN. More complicated concepts such as functions and subroutines, indirect addressing, and SPS floating-point arithmetic are omitted. Readable, requiring a minimal mathematical background, covering only the basic commands, but explaining these thoroughly, this book affords a good fundamental understanding of computers for the young student who preferably has access to a 1620 system.

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