A combination of Simpson's rule and four-point Gauss quadrature was used to obtain the data in Table I corresponding to the interval $0 \leqq \rho \leqq 0.95$; the remaining entries of Table I and all those in Table II were computed by 16-point Gauss quadrature. The authors state that the tabular data are accurate to within 1 or 2 units in the least significant place, except for those entries in Table I corresponding to $1 < \rho \leqq 35.5$, where the uncertainty ranges from 1 to 5 units in the last place.

Explanatory text consists of sections devoted to: computational procedures; solid angle contour integrals and related formulas, series, and approximations; illustrations of the use of these tables; and a list of 20 references supplementing those given in the Oak Ridge report.

J. W. W.

26[M, S].—V. VANAGAS, J. GLEMBOCKIJ, & K. UŠPALIS, *Tables of Radial Integrals of Atomic Spectra Theory*, Computing Centre, Academy of Science of the USSR, Moscow, 1960, xiii + 380 p., 26 cm.

The preface and the introduction to these extensive specialized tables are clearly written in Russian and English in parallel columns. Since it requires only seven pages of introductory text to describe the use of 380 pages of tables, the employment of two languages was only a minor burden on the editors, yet it opens the tables to a wide group of scientists. Other table-compilers should follow suit and also prepare bilingual introductory material.

The tables are designed to permit the numerical evaluation of the atomic radial integrals denoted by Slater [1] as $F^k(nl, n'l')$ and $G^k(nl, n'l')$ in cases where the individual electron radial integrals are approximated in the form:

$$R_{nl}(r) = \sum_i A_i r^{a_i} e^{-\alpha_i r}.$$

The functions actually tabulated are

$$V(ab; \gamma) = \log_{10}\left\{\int_0^\infty r^a e^{-\gamma r} \int_r^\infty r'^b e^{-r'} dr' dr\right\},$$

and

$$W(ab; \gamma) = \log_{10}\left\{\gamma^{b+1} \int_0^\infty r^a e^{-r} \int_r^\infty r'^b e^{-\gamma r'} dr' dr\right\},$$

from which the radial integrals in question can be calculated by methods described in the introduction. The functions V and W are tabulated for all nonnegative integer values of a and b in the range $0 \leqq a + b \leqq 16$, for $\gamma = 0.000(0.002)1.000$. The logarithms are given to six decimal places throughout.

GEORGE SHORTLEY

Booz, Allen Applied Research, Inc.
Bethesda 14, Maryland

1. JOHN C. SLATER, *Quantum Theory of Atomic Structure*, McGraw-Hill, New York, 1960, v. 1, p. 311.

27[P, Z].—MITCHELL P. MARCUS, *Switching Circuits for Engineers*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1962, ix + 296 p., 23.5 cm. Price $12.00.

As the title indicates, this is a book on switching circuits written for engineers. In particular, it is written for engineers with little or no background in the subject

or in mathematics. Thus, except for some elementary propositions of Boolean algebra, the book is essentially nonmathematical. Rather, the book is oriented toward the design of combinational and sequential circuits by simple hand methods. The reader is introduced both to the basic types of relay and electronic circuits, plus means for putting them together. Special subjects, such as tree circuits, symmetric functions, reiterative circuits, and error-correcting and error-detecting codes, are also surveyed.

The book covers a great many subjects, and the material is presented in a clear manner. The treatment, however, is rarely very deep. In particular, many of the given synthesis methods are quite unsophisticated, and the reader is not informed of the existence of more sophisticated ones. In the simplification of two-level AND-OR circuits, for example, the author starts his procedure from the expanded-sum-of-products form, and no mention is made of the numerous methods for getting from the prime implicants to a single minimal solution (say, in terms of number of literals) without first producing all irredundant forms. Thus, although the book will prepare the reader to solve simple practical problems, it will not serve to introduce him to the more mathematical portion of the literature, nor will it give him means to tackle complex problems either by hand or by machine.

ERIC G. WAGNER

International Business Machines Corporation
Thomas J. Watson Research Center
Yorktown Heights, New York

28[X].—CENTRE BELGE DE RECHERCHES MATHÉMATIQUES, *Colloque sur l'Analyse Numérique*, Gauthier-Villars, Paris, 1961, 214 p., 25 cm.

These are papers presented at a colloquium organized by the Centre Belge de Recherches Mathématiques and held at Mons in March 1961. In a foreword it is explained that "The object of the Centre is to pass in review the different chapters of mathematics in a manner to place at the disposition of our young research workers a precise documentation". Consequently, the papers are aimed more at exposition than at the reporting of new results. However, each paper treats a rather special subject, with one or two exceptions, and most of them presuppose a fair degree of sophistication on the part of the audience. The principal exception referred to is a paper by Forbat, entitled "Variational methods of determination of proper values" (in French), and a partial exception is a paper by Collatz (in German), describing various applications of the theory of monotonic operators. One of the more interesting papers is the one by Bauer (in French) on Romberg's method of numerical quadrature. This method was published by Romberg in 1955, and recently rediscovered; it is of special interest in that at this late date an important new development is possible in an area that has been worked so long and by so many of the masters.

Other papers that might be mentioned are one by Sauer, reporting work by Stetter in applying to certain hyperbolic systems Dahlquist's method of studying convergence for ordinary differential equations; a paper by Lanczos, dealing with the study of stability in solving systems of ordinary differential equations; and a paper by Stiefel on a problem arising in the design of electrical filters, which requires