85°, 88°, 89°, respectively. It may be added that values of $F(\phi, k)$ for $\phi = 0(1°)90°$, $k^2 = 0(.01)1$ are given in Samoĭlova-Ĭakhontova 1, but to only 5D.

(iv) When $\alpha^2 = k^2$, we have

$$\Pi(90°, \alpha^2, k) = \int_0^{\pi/2} (1 - k^2 \sin^2 \theta)^{-3/2} \, d\theta,$$

which is known to equal $E/(1 - k^2)$, where E is the complete elliptic integral of the second kind, given to 10D with argument k^2 in Hayashi 3. Evaluation shows that the values of Paxton and Rollin are systematically too small, for example by 4, 15, 31, 177, and almost 590 units at $k^2 = .2, .8, .9, .96, .98$, respectively.

As far as the reviewer's examination has gone, it seems likely that the table is correct everywhere to about 4D, almost everywhere to 5D, and in large regions to 6D and 7D. Even with this limitation, the table (which, as far as the reviewer is aware, is a corporation research report rather than a published work) must be regarded as epoch-making in the history of the tabulation of the elliptic integral of the third kind. It should be added that another sizable table of this integral, by Selfridge and Maxfield [1], appeared in 1958, but with a different argument system.

A. F.

1. R. G. Selfridge & J. E. Maxfield, *A Table of the Incomplete Elliptic Integral of the Third Kind*, Dover Publications, New York, 1958 (also Constable, London).

34[P, W].—Armour Research Foundation, *Proceedings of the Fourth Annual Computer Applications Symposium*, 1957, sponsored by the Armour Research Foundation of Illinois Institute of Technology, 1958, x + 126 p., 23 cm. Price $3.00.

This is a collection of 15 papers based on 12 talks, two luncheon addresses and a panel discussion. Practically all the symposium concerned itself with applications of digital computers.

The program of the symposium covered two days, one devoted to a session on "Business and Management Applications," the other to a session on "Engineering and Research Applications."

The following seven papers concerned with the first subject appear in the *Proceedings*:

An Extensive Hospital and Surgical Insurance Record-Keeping System—R. J. Koch,

A Central Computer Installation as a Part of an Air-Line Reservations System—R. A. McAvoy,

Fitting a Computer into an Inventory-Control Problem—O. A. Kral,

The Problems of Planning New Metropolitan Transportation Facilities and Some Computer Applications—J. D. Carroll, Jr.,

Data-Processing Tasks for the 1960 Census—D. H. Heiser & Dorothy P. Armstrong,

The Handling of Retail Requisitions from a General Warehouse—M. J. Stoughton,

Automatic Programming for Business Applications—Grace M. Hopper.

The papers generated at the session on "Engineering and Research Applications" are as follows:

Digital Simulation of Active Air Defense Systems—R. P. RICH,

Statistical Calculations in Product-Development Research—E. B. GASSER,

Progress in Computer Application to Electrical Machine and System Design—E. L. HARDER,

How Lazy Can You Get?—A. L. SAMUEL,

The Solution of Certain Problems Occurring in the Study of Fluid Flow—L. U. ALBERS,

A Dual-Use Digital Computer for Dynamic System Analysis—E. H. CLAMONS & R. D. ADAMS,

The Status of Automatic Programming for Scientific Problems—R. W. BEMER, Panel Discussion.

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35[S].—VAL J. ASHBY & HENRY C. CATRON, *Tables of Nuclear Reaction Q Values*, UCRL-5419, Lawrence Radiation Laboratory, University of California, Livermore, California, 1959, 330 p., 28 cm. Price $5.00. Available from the Office of Technical Services, Department of Commerce, Washington 25, D. C.

Tables of nuclear reaction Q values have been calculated from nuclide masses, when possible, for those 42 reactions involving γ, n, p, d, t, He^3, or He^4 as either incident or product particle for about 650 target nuclides. Approximately 8000 Q values are tabulated.

AUTHORS' SUMMARY

36[S, T].—JAMES MILLER, JOHN M. GERHAUSER & F. A. MATSEN, *Quantum Chemistry Integrals and Tables*, University of Texas Press, Austin, Texas, 1959, 1224 p., 26 cm. Price $15.00.

One of the major difficulties in making quantum-mechanical calculations of the properties of atoms and molecules is the evaluation of the large number of difficult integrals which appear. This volume contains tables for the evaluation of the one- and two-center $1s$, $2s$, and $2p_\sigma$ integrals involved in energy and dipole moment calculations. No $2p\pi$ integrals are included. The tables are based on the usual Slater-type atomic orbitals. Molecular integrals are not tabulated directly, but rather auxiliary functions (A, B, G, and W in the usual Kotani notation). Some computation is therefore still necessary to arrive at a desired molecular integral, but it is within the reach of a desk calculator.

The tables were computed on an IBM 650 and reproduced by a photo-offset process to avoid introduction of errors. They appear quite clear and legible. The short textual parts of the book contain formulas as well as recommended interpolation procedures and their expected accuracy—a most welcome feature. Over 90 per cent of the pages are devoted to the difficult W functions.

The present tables naturally invite comparison with previous tables of molecular integrals, particularly those by Kotani, Amemiya, Ishiguro, and Kimura