and $\varphi = 0°(10')90°$. These data were used in calculating the main table when $k^2 \leqq 0.7$ and $|n| \geqq 0.1$, by expanding the integral in powers of k^2, with coefficients involving $A_m(\varphi)$. When $k^2 \geqq 0.7$, the integral was expanded in powers of k'^2, and the coefficients depend on $R_m(\varphi) = \int_0^\varphi \tan^{2m} \alpha \sec \alpha \, d\alpha$, which is given in Table IV to 8D for $m = 1(1)8$, $\varphi = 0°(10')45°50'$.

Table V gives

$$R_0(\varphi) = \ln \tan\left(\frac{\varphi}{2} + \frac{\pi}{4}\right),$$

which is the inverse gudermannian (the equivalent of $\Pi(0, 1, \varphi)$ in the present notation), to 9D for $\varphi = 0°(1')5°43'$, and to 8S for $\varphi = 5°44'(1')89°59'$.

This volume closes with Table VI, listing $K(k^2)$ and $E(k^2)$ to 8S and $q(k^2)$ to 8D, for $k^2 = 0(0.001)1$.

The introductory text consists of four pages of definitions and explanatory remarks.

This reviewer has noted hand-corrections of typographical errors on a total of 21 pages in the copy he examined.

A spot check against corresponding entries in the Paxton-Rollin tables revealed discrepancies of at most a unit in the last decimal place. Direct comparison with the tables of Selfridge and Maxfield is not practicable because of the different subtabulation of k^2.

J. W. W.

1. R. G. Selfridge & J. E. Maxfield, *A Table of the Incomplete Elliptic Integral of the Third Kind*, Dover Publications, Inc., New York, 1959. (See *Math. Comp.*, v. 14, 1960, p. 302–304, RMT **65**.)

2. F. A. Paxton & J. E. Rollin, *Tables of the Incomplete Elliptic Integrals of the First and Third Kind*, Curtiss-Wright Corporation, Research Division, Quehanna, Pennsylvania, June 1959. (See *Math. Comp.*, v. 14, 1960, p. 209–210, RMT **33**.)

94[L, M].—L. N. Osipova & S. A. Tumarkin, *Tablitsy dlya rascheta toroobraznykh obolochek* (*Tables for the Calculation of Toroidal Shells*), Akad. Nauk SSSR, Moscow, 1963, xxvi + 94 p., 26 cm. Price 81 kopecks.

This publication of the Computational Center of the Academy of Sciences of the USSR includes tables computed on the electronic computer STRELA. The main table (pages 2–83) relates to the function

$$u = \pm \left| \frac{3}{2} \int_0^\theta \sqrt{\frac{|\sin \theta|}{1 + \alpha \sin \theta}} \, d\theta \right|^{2/3},$$

where $0 \leqq \alpha \leqq 1$, $-90° \leqq \theta \leqq 90°$, and u has the same sign as θ. Values of u are given to 5D for $\alpha = 0$, $\theta = 0(1°)90°$; $\alpha = 0.05(0.05)0.95$, $\theta = -90°(1°)90°$; $\alpha = 1$, $\theta = -70°(1°)90°$. For convenience in applications, ten related quantities (including $\partial u/\partial \theta$) are also tabulated. In the range of α from 0.05 through 0.95, there are four pages for each value of α.

Appendix 1 (pages 86–88) lists to 5D without differences the real and imaginary parts of $e_0(is)$, $e_1(is)$ and of their s-derivatives $e_0'(is)$, $e_1'(is)$ for $s = 0(0.05)6$. Here

$$e_0(is) = \int_0^\infty \exp\left(-\frac{1}{3}x^3 - isx\right) dx, \qquad e_1(is) = \int_0^\infty x^2 \exp\left(-\frac{1}{3}x^3 - isx\right) dx.$$

Appendix 2 (pages 90–91) lists to 6D without differences the real and imaginary parts of $h_1(is)$, $h_2(is)$ and of their s-derivatives $h_1'(is)$, $h_2'(is)$ for $s = 0(0.1)6$. Here h_1, h_2 are the same functions (related to the Airy integrals) as are tabulated for general complex arguments under the name of modified Hankel functions of order one-third in one of the Harvard volumes [1]. In the latter, however, $h_1'(iy)$, $h_2'(iy)$ denote derivatives with respect to iy (not y), so that the real and imaginary parts of the derivatives are interchanged, with one reversal of sign, compared with the Russian tables. Bearing this point in mind, all the values in Appendix 2 may be found (to two more decimals) in the Harvard volume; a single reading revealed no discrepancy. The Harvard values have to be picked from the top line ($x = 0$) of the Harvard table for each y, so that anyone computing with pure imaginary arguments only will find it convenient to have the values now set out at one opening.

In connection with the appendices, reference is made to earlier work (including tables) by Tumarkin and L. N. Nosova.

The introduction contains analytical details, a number of graphs of the various functions, and references. It also contains (page ix) a table of the integral of the real part of $e_0(is)$, namely

$$Q(s) = \int_0^s R[e_0(is)]\, ds,$$

to 4D without differences for $s = 0(0.1)8$.

A. F.

1. HARVARD UNIVERSITY COMPUTATION LABORATORY, *Annals*, v. 2, *Tables of the Modified Hankel Functions of Order One-Third and of Their Derivatives*, Harvard University Press, Cambridge, Massachusetts, 1945. (See *MTAC*, v. 2, 1946, p. 176–177, RMT 335.)

95[L, M].—W. T. PIMBLEY & C. W. NELSON, *Table of Values of* $2\sqrt{x}F(\sqrt{x})$, IBM Engineering Publications Dept. No. PTP 773, 1964, Endicott, New York. Copy deposited in the UMT File.

Let $F(w)$ be Dawson's integral:

$$F(w) = e^{-w^2} \int_0^w e^{t^2}\, dt.$$

In connection with two different physical problems the authors had need of a table of $2\sqrt{x}F(\sqrt{x})$ and they have here computed two tables to 12D. Table 1 gives this function for $x = 0(0.1)9.9$ and Table 2 for $x = 1(1)100$. These were computed by known convergent and asymptotic series. A spot comparison with Rosser's 10D table of $F(w)$ [1] revealed no discrepancies.

A recent paper by Hummer [2] also discussed $F(w)$. In [3] the reviewer had occasion to investigate two functions of Ramanujan and Landau whose ratio, $r(x)/l(x)$, is the function given here with x replaced by $\log x$.

D. S.

1. J. BARKLEY ROSSER, *Theory and Application of* $\int_0^z e^{-x^2}\, dx$ *and* $\int_0^z e^{-p^2y^2}\, dy \int_0^y e^{-x^2}\, dx$, Mapleton House, Brooklyn, New York, 1948, p. 190–191.
2. DAVID G. HUMMER, "Expansion of Dawson's function in a series of Chebyshev polynomials," *Math. Comp.*, v. 18, 1964, p. 317–319.
3. DANIEL SHANKS, "The second-order term in the asymptotic expansion of $B(x)$," *Math. Comp.*, v. 18, 1964, p. 79–80, 85–86.