127[L, M].—V. M. Belyakov, R. I. Kravtsova & M. G. Rappoport, *Tables of Elliptical Integrals*, Part 1, translated by Prasenjit Basu, Pergamon Press, Ltd., Oxford, England, distributed by the Macmillan Company, New York, 1965, xiii + 647 pp., 26 cm. Price $20.00.

This is the English edition of the Russian table previously reviewed in *Math. Comp.*, v. 18, 1964, RMT 93, p. 676–677. For technical details see that review. In preparation for the photographic reproduction the known typographical errors in the Russian edition were corrected, and the frequently imperfect ruling there was mended. The present binding is stronger, but is not very attractive.

The translator's rendition of the title is a little curious; normally it would be translated as *Tables of Elliptic Integrals, Volume 1*. Even more gauche, but not without a certain rhythmical quality, is the designation for $K(k^2)$ and $E(k^2)$ in Table VI as *Total Elliptical Integrals*. On the other hand, the Russian price of 5 rubles, 14 kopecks is translated, with an admirable, no-nonsense attitude, as $20.00.

For a description of another recent table of these functions, see the review of the table by Fettis and Caslin, *Math. Comp.*, v. 19, 1965, RMT 81, p. 509.

D. S.

128[L, M].—K. A. Karpov, *Tables of the Function* $w(z) = e^{-z^2} \int_0^z e^{x^2} dx$ *in the Complex Domain*, The Macmillan Company, New York, 1965, xxi + 519 pp. + 1 insert, 27 cm. Price $19.75.

This book, which is volume 27 of the Pergamon Press Mathematical Tables Series, is an English translation of the Russian *Tablit͡sy funkt͡siĭ* $w(z) = e^{-z^2} \int_0^z e^{x^2} dx$ *v kompleksnoi oblasti*, published in 1954 by the Academy of Sciences, U.S.S.R. The Russian edition has been previously reviewed in this journal (MTAC, v. 12, 1958, pp. 304–305).

The translation by D. E. Brown of the introduction is excellent, and the typography is uniformly good.

J. W. W.

129[L, M].—N. V. Smirnov, Editor, *Tables of the Normal Probability Integral, the Normal Density, and its Normalized Derivatives*, The Macmillan Company, New York, 1965, xvi + 125 pp., 28 cm. Price $7.50.

This set of tables, constituting Volume 32 of the Mathematical Tables Series of Pergamon Press, is a translation by D. E. Brown of *Tablit͡sy normal′nogo integrala veroyatnostei, normal′noi plotnosti i yeye normirovannyk͡h proizvodnyk͡h*, published in 1960 by the Academy of Sciences of the U.S.S.R.

Table I consists of 7D approximations to the values of the normal probability integral

$$\Phi_0(x) = (2\pi)^{-1/2} \int_0^x e^{-(1/2)t^2} dt$$

and its derivative, the normal probability density function, for $x = 0(0.001)2.5(0.002)3.4(0.005)4(0.01)4.5$, together with first differences.

Table II gives the same functions to 10D, without differences, for $x = 4.5(0.01)6$.

Table III consists of 5D values of $-\log [\frac{1}{2} - \Phi_0(x)]$, for $x = 5(1)50(10)100(50)500$.

Table IV, comprising nearly two-thirds of the book, gives 7D values, without differences, of the tetrachoric functions

$$\tau_s(x) = \frac{(-1)^{s-1}}{\sqrt{s!}} \frac{d^{s-1}}{dx^{s-1}} \left(\frac{1}{\sqrt{2\pi}} e^{-(1/2)x^2} \right) = \frac{H_{s-1}(x)}{\sqrt{s!}} \frac{e^{-(1/2)x^2}}{\sqrt{2\pi}}$$

for $s = 2(1)21$, $x = 0(0.002)4$. The entries in this table were calculated from the recurrence relation

$$\tau_s(x) = xp_s\tau_{s-1}(x) - q_s\tau_{s-2}(x)$$

where $\tau_0(x) = \frac{1}{2} - \Phi_0(x)$ and $\tau_1(x) = \Phi_0'(x)$. The corresponding values of the coefficients p_s and q_s are given to 10D in Table V. The recurrence formula for the Hermite polynomials, $H_m(x)$, enables one to deduce that $p_s = 1/\sqrt{s}$ and $q_s = (s-2)/\sqrt{(s(s-1))}$. The reviewer has thereby discovered three minor errors in this table; namely, the terminal digits in the tabulated values of p_{20}, q_5, and q_{19} should each be decreased by a unit.

Table VI gives, in floating-point form, 10S values of the normalizing factor $\lambda_s = \sqrt{(s!)}$, for $s = 1(1)25$. Here, again, we find terminal-digit errors; namely, the tabulated values of λ_s corresponding to $s = 4, 7, 9, 14, 20, 22$ should be increased by a unit in the least significant figure, while those corresponding to $s = 18, 21, 24$ should be decreased by a like amount.

A critical table of coefficients to 3D for Bessel quadratic interpolation is appended for use with Table II. On the other hand, it is shown in the Introduction that linear interpolation suffices throughout Table I.

Acknowledgment is made of the use of the corresponding 15D NBS tables [1] as the basis for Table I. Furthermore, it is stated that Tables II and III were taken from statistical tables of Pearson and Hartley [2].

A significant contribution to tabular literature is to be found in Table IV. This represents the most extensive tabulation of the tetrachoric functions published to date. The various applications of these functions, particularly in mathematical statistics, are discussed and illustrated in the informative Introduction.

J. W. W.

1. NEW YORK W. P. A. MATHEMATICAL TABLES PROJECT, *Tables of the Probability Functions*, Volume II, New York, 1942. Reissued with corrections as *Tables of Normal Probability Functions*, NBS Applied Mathematics Series, No. 23, U. S. Government Printing Office, Washington, D. C., 1953.

2. E. S. PEARSON & H. O. HARTLEY, *Biometrika Tables for Statisticians*, Volume I, Cambridge University Press, Cambridge, 1954.

130[L, V].—OTTO EMERSLEBEN, *Die Strömungsbereiche bei zentrischer Überlagerung zweier Grundfunktionen doppeltperiodischer Parallelströmungen*, Anwendungen der Mathematik Nr. 11, Institut für Angewandte Mathematik der Universität Greifswald, Greifswald, 1964, 21 pp., 30 cm.

For a viscous flow in the z-direction, the velocity $v(x, y)$ satisfies the conditions:

(1) $$\Delta(x, y) = -C, \qquad v(x, y) = 0 \quad \text{on boundaries.}$$