The data in Tables 1, 2, 3, and 5 are accurately rounded; however, Table 4 contains errors attributable to the discrete approximation in the maximizing process. For $p > 0.8$ the tabulated values of p_i are accurate to 2D; for $0.7 < p \leqq 0.8$, p_i is accurate to 3D; and for smaller values of p, the maximum error in p_i is 5×10^{-4}.

The coefficients $B(i)$ are exact in the sense that they give the minimum-variance unbiased linear combination of the order statistics which are chosen according to the table.

The underlying theory, the algorithms used in the tabulation, and a list of previous publications may be found in a paper by Sibuya [1].

AUTHORS' SUMMARY

1. M. SIBUYA, "Maximization with respect to partition of an interval and its application to the best systematic estimators of the exponential distribution," *Ann. Math. Statist.* (To appear.)

94[L].—V. A. DITKIN, Editor, *Tablitsy Logarifmicheskoĭ Proizvadnoĭ Gamma-funktsii i ee Proizvodnykh v Kompleksnoĭ Oblasti*, Akad. Nauk SSSR, Moscow, 1965, xiv + 363 pp., 27 cm. Price 3.15 roubles.

This volume contains two tables: the first, occupying 320 pages, consists of 7S decimal approximations to the real and imaginary parts of $\psi(x + iy)$, the logarithmic derivative of the gamma function, for $x = 1(0.01)2$ and $y = 0(0.01)4$; the second, occupying 40 pages, consists of 7S values (in floating-point form for positive exponent) of the real and imaginary parts of the derivatives $\psi^{(n)}(x + iy)$ for $n = 1(1)10$, $x = 1(0.1)2$, and $y = 0(0.1)4$. No tabular differences are provided; however, interpolation with second differences is explained and illustrated in the introduction with the aid of a nomogram.

The real and imaginary parts for any argument appear on facing pages, with six tabular columns of 51 lines each on a page, the last column being repeated as the first column on the following page. This format was adopted from that in the tables of Abramov [1] for $\ln \Gamma(x + iy)$, to which the present tables are related, as noted in the preface.

The numerical evaluation of the tabulated functions outside the range of the tabular arguments is discussed, and a number of relevant formulas and series are included.

This reviewer has compared the tabular values herein for $\psi(x + iy)$ when $x = 1(0.01)2$, $y = 0$ with the corresponding entries in the 10D tables of Davis [2], to which reference is made in the bibliographic list of 10 titles at the end of the introduction. It was thereby discovered that, with very few exceptions, there exists a consistent lack of conventional rounding-up of the final digit in the main table under review. On the other hand, this source of error was not observed in the values of the derivatives of $\psi(z)$ for real argument, which occupy the first line throughout the second table.

As a further check, this reviewer also compared the tabulated values of the real part of $\psi(1 + iy)$ for $y = 0(0.01)4$ with the corresponding 10D values in Table II of the NBS tables of Coulomb wave functions [3], and the same general lack of conventional rounding was again observed in the Russian table.

We are informed in the preface that these tables were computed on the electronic computer Strela. Presumably the observed rounding errors are attributable to a deficiency in the computer program. It is interesting to note that no other tabular discrepancies were observed.

The present attractively printed tables are by far the most extensive of their kind, and accordingly constitute an important accession to the growing store of mathematical tables. It is to be hoped that an emended edition eventually will be forthcoming.

J. W. W.

1. A. A. Abramov, *Tablitsy* ln $\Gamma(z)$ *v kompleksnoĭ oblasti*, Izdat. Akad. Nauk SSSR, Moscow, 1953. (See *MTAC*, v. 12, 1958, pp. 150–151, RMT **70**.)
2. H. T. Davis, *Tables of the Higher Mathematical Functions*, Vols. 1, 2, Principia Press, Bloomington, Indiana, 1933 and 1935. Revised edition, entitled *Tables of the Mathematical Functions*, published by The Principia Press of Trinity University, San Antonio, Texas, 1963. (See *Math. Comp.*, v. 19, 1965, pp. 696–698, RMT **131**.)
3. NBS Applied Mathematics Series, No. 17: *Tables of Coulomb Wave Functions*, U. S. Government Printing Office, Washington, D. C., 1952. (See *MTAC*, v. 7, 1953, pp. 101–102, RMT **1091**.)

95[L].—Roddam Narasimha, *On the Incomplete Gamma-function with One Negative Argument*, Report AE 123A, Department of Aeronautical Engineering, Indian Institute of Science, Bangalore, India, 16 pp. + 2 figs., 29 cm. Copy deposited in UMT file.

Let $g(\alpha, x) = \alpha e^{-x} \int_0^1 t^{\alpha-1} e^{xt}\, dt$ and $G(\alpha, x) = -\alpha e^{x} \int_1^\infty t^{\alpha-1} e^{-xt}\, dt$; then this report presents 5D tables of $g(\alpha, x)$ and $G(\alpha, x)$, the first for $\alpha = 0(0.2)2(0.5)5$, $x = 0(0.1)2(0.25)3(0.5)5(1)10$, and the second for $-\alpha = 0(0.2)2(0.5)5$ and for x as above.

In an introduction the author discusses the properties of these functions and the procedures followed in the calculation of these tables on an IBM 7090 system. Methods for extending the range of the tables are also described.

The author alludes to the application of the incomplete gamma function to the solution of problems in statistics, radiative transfer, and the kinetic theory of gases. A list of nine references is appended to the introduction.

Additional information concerning these functions, including related tabular data, is presented in a treatise [1] by this reviewer and in the NBS *Handbook* [2].

Y. L. L.

1. Y. L. Luke, *Integrals of Bessel Functions*, McGraw-Hill Book Co., New York, 1962. (See *Math. Comp.*, v. 17, 1963, pp. 318–320, RMT **51**.)
2. M. Abramowitz & I. A. Stegun, Editors, *Handbook of Mathematical Functions with Formulas, Graphs, and Mathematical Tables*, National Bureau of Standards, Applied Mathematics Series, No. 55, U. S. Government Printing Office, Washington, D. C., 1964. (See *Math. Comp.*, v. 19, 1965, pp. 147–149, RMT **1**.)

96[L].—E. Wai-Kwok Ng, *Lommel Functions of Two Imaginary Arguments*, Department of Astronomy, Columbia University, New York, undated ms. of 13 pp., deposited in UMT file.

This manuscript contains tables to 6S in floating-point form of

$$Y_n(w, z) = \sum_{m=0}^{\infty} (w/z)^{n+2m} I_{n+2m}(z)$$