The range covered is $n = 0.05(0.05)10(0.1)20(0.25)70$, $x = 0.0001(0.0001)$ $0.001(0.001)0.01(0.01)1(0.05)6(0.1)16(0.5)66(1)166(2)250$. Occasionally, tabular values are listed for a few additional values of x. On the other hand, tabular values that round to 0 or 1 to 10D have been omitted. The underlying calculations were performed on an IBM 7090 system under the direction of Wilhelm Rudert at the Technische Hochschule Institut für Praktische Mathematik, at Darmstadt.

As the author points out in the introduction to these tables, the tabulated function $P(n, x)$ coincides with the well-known χ^2 cumulative distribution function for $2n$ degrees of freedom whenever $2n$ is a positive integer, and it is related to the Poisson cumulative distribution when n is a positive integer.

Indeed, the calculation of these impressive tables was motivated by a desire to provide more adequate tables for these two statistical distributions. Thus, earlier tables such as those of K. Pearson [1], Hartley & E. S. Pearson [2], Molina [3], and Kitigawa [4] are now superseded by this more extensive tabulation.

The author includes all these tables in his list of 13 references.

The introduction is written in English as well as in German. This section of the book includes a description of the tables; a brief description of the procedure followed in their calculation; a discussion of some of their general uses; a discussion, with illustrative examples, of interpolation (direct and inverse) and extrapolation; and an auxiliary 10D table of $\Gamma(n)$ for $n = 1(0.025)2$.

Attractively bound and printed, these tables constitute a significant contribution to the mathematical and statistical tabular literature.

J. W. W.

1. K. Pearson, *Tables of the Incomplete* Γ*-Function*, H. M. Stationery Office, London, 1922; reissued by *Biometrika* Office, University College, London, 1934.
2. H. O. Hartley & E. S. Pearson, "Tables of the χ^2-integral and of the cumulative Poisson distribution," *Biometrika*, v. 37, 1950, pp. 313–325.
3. E. C. Molina, *Tables of Poisson's Exponential Limit*, Van Nostrand, New York, 1942.
4. T. Kitigawa, *Tables of Poisson Distributions*, Baifukan, Tokyo, 1951.

17 [7].—Joyce Weil, Tadepalli S. Murty & Desiraju B. Rao, *Zeros of* $J_n(\lambda)Y_n(\eta\lambda) - J_n(\eta\lambda)Y_n(\lambda)$ *and* $J_n'(\lambda)Y_n'(\eta\lambda) - J_n'(\eta\lambda)Y_n'(\lambda)$, ms. of 20 computer sheets deposited in UMT file, also in microfiche section of this issue.

The first ten positive zeros of the two functions specified in the title are tabulated to 5D for $n = 0(1)10$ and $\eta = 0(0.05)0.95$. Details of the underlying computational procedure have been published [1] by the authors. The zeros of the second function were found in the same manner as those of the first, after use was made of the relation $Z_n'(x) = nZ_n(x)/x - Z_{n+1}(x)$, where Z_n represents either J_n or Y_n.

J. W. W.

1. Joyce Weil, Tadepalli S. Murty & Desiraju B. Rao, "Zeros of $J_n(\lambda)Y_n(\eta\lambda) - J_n(\eta\lambda)Y_n(\lambda)$," *Math. Comp.*, v. 21, 1967, pp. 722–727.

18 [7].—Henry E. Fettis & James C. Caslin, *Elliptic Functions for Complex Arguments*, Report ARL 67-0001, Aerospace Research Laboratories, Office of Aerospace Research, United States Air Force, Wright-Patterson Air Force Base, Ohio, January 1967, iv + 404 pp., 28 cm. Copies obtainable from the Defense Documentation Center, Cameron Station, Alexandria, Va. 22314.

These unique tables consist of 5D values of the Jacobian elliptic functions $\mathrm{sn}(w, k)$, $\mathrm{cn}(w, k)$, and $\mathrm{dn}(w, k)$, where $w = u + iv$, as functions of Jacobi's nome q, which equals $\exp(-\pi K'/K)$, where K and K' are the quarter-periods (the complete elliptic integrals of the first kind of modulus k and of complementary modulus k', respectively).

The range of parameters in the table is: $q = 0.005(0.005)0.480$, $u/K = 0(0.1)1$, and $v/K' = 0(0.1)1$. For larger values of q the authors give in the introduction approximations to the elliptic functions by circular and hyperbolic functions.

These tables were computed on an IBM 7094 system by the method of modulus reduction based on Gauss's transformation. Essentially the same subroutine was used here as in the calculation of an earlier table [1] of Jacobian elliptic functions by the same authors.

Reference should also be made to a manuscript table [2] of elliptic functions for complex arguments by these authors, which, however, has $\sin^{-1} k$ for an argument in place of q.

J. W. W.

1. Henry E. Fettis & James C. Caslin, *Ten Place Tables of the Jacobian Elliptic Functions*, Report ARL 65–180, Part 1, Aerospace Research Laboratories, Wright-Patterson Air Force Base, Ohio, September 1965. (See *Math. Comp.*, v. 21, 1967, pp. 264–265, RMT **25**.)

2. Henry E. Fettis & James C. Caslin, *Jacobian Elliptic Functions for Complex Arguments*, ms. deposited in UMT file. (See *Math. Comp.*, v. 21, 1967, p. 508, RMT **65**.)

19 [7].—V. M. Beli͡akov, R. I. Kravt͡sova & M. G. Rappaport, *Tablit͡sy ellipticheskikh integralov*, Tom II (*Tables of Elliptic Integrals*, Vol. II), Izdatel'stvo Akademii Nauk SSSR, Moscow, 1963, xii + 783 pp., 27 cm. Price 6 rubles, 18 kopecks.

This set of tables is a continuation of the systematic tabulation (without differences) of the elliptic integral of the third kind $\prod(n, k^2, \phi)$ to 7S which was carried out for negative values of the parameter n in the first volume [1]. In this second volume, n assumes nonnegative values; specifically, $n = 0(0.1)1$, 1.2, $1.5(0.5)5(1)10$, 12, $15(5)40(10)100$, while the ranges of k and ϕ are the same as in the first volume; namely, $k^2 = 0(0.01)1$ and $\phi = 0°(1°)90°$.

To this main table of 728 pages there are appended six supplementary tables. The first four of these are of $T_n^{\epsilon}(k^2, \phi) = \int_\epsilon^\phi \sin^{-2n} \alpha(1 - k^2 \sin^2 \alpha)^{-1/2} d\alpha$ for $k^2 = 0(0.01)1$, $35° \leqq \phi \leqq 90°$, $\epsilon = 35°$, and $n = 1, 2, 3, 4$, respectively. The precision of these four tables is 7S, 5S, 3S and 2S, respectively. They are provided to facilitate the evaluation of

$$\prod\nolimits_\epsilon (n, k^2, \phi) = \int_\epsilon^\phi (1 + n \sin^2 \alpha)^{-1}(1 - k^2 \sin^2 \alpha)^{-1/2}$$

$$= \sum_{m=1}^{\infty} (-1)^{m+1} T_m^{\epsilon}(k^2, \phi) n^{-m},$$

where $\epsilon = 35°$ and $n > 100$.

The calculation of $\prod(n, k^2, \phi)$ when $0° < \phi \leqq 35°$ and $n > 100$ can be effected by two series (according as $k^2 \leqq 0.7$ or $k^2 \geqq 0.7$) that involve, respectively, $A_m(\phi) = \int_0^\infty \sin^{2m} \alpha d\alpha$ and $R_m(\phi) = \int_0^\phi \tan^{2m} \alpha \sec \alpha d\alpha$. These functions are tabulated to 8D or 8S in the first volume for $m = 1(1)10$ and $m = 0(1)8$, respectively.