forms by A. Erdélyi, W. Magnus, F. Oberhettinger, and F. G. Tricomi, Vol. 1, McGraw-Hill Book Co., New York, 1954 (see *MTAC*, Vol. 10, 1956, pp. 252–254) is marked in that the arrangement of the one-dimensional material under review is much akin to that of the work just mentioned. The current work contains more transforms than the Erdélyi et al. volume. For example, there are transforms of numerous sectionally rational functions and Mathieu functions. Aside from this, there appear to be few if any transforms which can not be readily deduced from those in the latter volume.

The list of transforms in Chapters 3 and 4 are the most extensive I have ever seen. True, these results can be built up from the pertinent material in Chapters 1 and 2. Nonetheless, applied workers should appreciate the short cuts provided by the present tables.

We have spot checked various portions of the tables against other lists. The only error found is formula 1.1.4. There in the $f(t)$ column for $(at - b)$ read $f(at - b)$. Regretfully, the printing of the tables is incredibly poor. We have not seen the original Russian edition and so do not know if the present tables were reset or are a photocopy of the original.

Y. L. L.

5[7].—Vincent P. Gutschick & Oliver G. Ludwig, *Table of Exact Integrals of Products of Two Associated Legendre Functions*, Department of Chemistry, California Institute of Technology and Department of Chemistry, Villanova University. Ms. of 40 computer sheets deposited in the UMT file.

Let

$$I(l_1, m_1, l_2, m_2) = \int_{-1}^{1} P_{l_1}^{m_1}(x) P_{l_2}^{m_2}(x) dx .$$

This manuscript table presents exact (rational) values of all nonvanishing and non-redundant integrals I, where the l's and m's individually assume all integer values from 0 to 12, inclusive.

An introduction of three pages explains the method of computation and gives other pertinent information.

For a technique to compute a generalization of this integral, see a paper by J. Miller [1]. Another related paper is one by S. Katsura and his coworkers [2].

Y. L. L.

1. James Miller, "Formulas for integrals of products of associated Legendre or Laguerre functions," *Math. Comp.*, v. 17, 1963, pp. 84–87.
2. S. Katsura, Y. Inoue, S. Hamashita & J. E. Kilpatrick, *Tables of Integrals of Threefold and Fourfold Products of Associated Legendre Functions*, The Technology Reports of the Tôhoku University, v. 30, 1965, pp. 93–164. [See *Math. Comp.*, v. 20, 1966, pp. 625–626, RMT **98**.]

6[7].—T͡s. D. Lomkat͡si, *Tablit͡sy Elliptic͡heskoĭ Funkt͡sii Veĭers͡htrassa* (*Tables of Weierstrassian Elliptic Functions*), Computation Center of the Academy of Science of the U.S.S.R., Moscow, 1967, xxxii + 88 pp., 27 cm. Price 1.06 roubles (paperbound).

An elaborate mathematical introduction to these tables was prepared by V. M.

Beliākov and K. A. Karpov. Starting with the standard definition of the Weierstrass elliptic function $z = \wp(u; g_2, g_3)$ as the inverse of the function

$$u = \int_z^\infty \frac{dz}{(4z^3 - g_2 z - g_3)^{1/2}},$$

it gives a detailed discussion of the properties of that function, as well as formulas for the evaluation thereof corresponding to complex values of u. A section is devoted to a discussion of the numerical evaluation of $\wp(u; g_2, g_3)$ for large values of g_2 when $g_3 = \pm 1$. This is supplemented by a discussion of the evaluation of the Jacobi elliptic function $\mathrm{sn}(u, m)$, together with an auxiliary table of $K(m)$ to 8D for $m = 0.4980(0.0001)0.5020$, with first differences. The relevant computational methods are illustrated by the detailed evaluation of $\wp(0.2; 100, 1)$ and $\wp(0.3; 100, -1)$ to 7S.

The two main tables, which were calculated and checked by differencing on the Strela computer, consist of 7S values (in floating-point form) of $\wp(u; g_2, g_3)$ for $g_2 = 3(0.5)100$, $g_3 = 1$, and $g_2 = 3.5(0.5)100$, $g_3 = -1$, respectively, where in both tables $u = 0.01(0.01)\omega_1$. Here ω_1 represents the real half-period of the elliptic function. It should be noted that for the stated range of the invariants g_2 and g_3, the discriminant $g_2^3 - 27g_3^2$ is nonnegative, so that the zeros e_1, e_2, e_3 of $4z^3 - g_2 z - g_3$ are all real.

A description of the contents and use of the tables, including details of interpolation (with illustrative examples) is also given in the introduction.

Appended to the introduction is a listing of the various notations used for this elliptic function and a useful bibliography of 19 items.

An examination of the related tabular literature reveals that these tables are unique; indeed, Fletcher [1] in his definitive guide to tables of elliptic functions mentions no tables of $\wp(u; g_2, g_3)$ when g_2 and g_3 are real and the discriminant is positive.

J. W. W.

1. Alan Fletcher, "Guide to tables of elliptic functions," *MTAC*, v. 3, 1948, pp. 229–281.

7[7].—Robert Spira, *Tables of Zeros of Sections of the Zeta Function*, ms. of 30 sheets deposited in the UMT file.

This manuscript table consists of rounded 6D values of zeros, $\sigma + it$, of $\sum_{n=1}^{M} n^{-s}$ for $M = 3(1)12$, $0 < t < 100$; $M = 10^k$, $k = 2(1)5$, $-1 < \sigma$, $0 < t < 100$; $M = 10^{10}$, $0.75 < \sigma < 1$, $0 < t < 100$. No zero with $\sigma > 1$ was found. A detailed discussion by the author appears in [1] and [2].

J. W. W.

1. R. Spira, "Zeros of sections of the zeta function. I," *Math. Comp.*, v. 20, 1966, pp. 542–550.
2. R. Spira, "Zeros of sections of the zeta function. II", *ibid.*, v. 22, 1968, pp. 163–173.

8[7, 8].—W. Russell & M. Lal, *Table of Chi-Square Probability Function*, Department of Mathematics, Memorial University of Newfoundland, St. John's, Newfoundland, Canada, September 1967, 77 pp., 28 cm. One copy deposited in the UMT file.

Herein are tabulated to 5D the values of the chi-square distribution function