corresponding to two-element partitions $[(N/2) + S, (N/2) - S]$ of $N$). These tabulated elements correspond to the elements $(pN)$, for $p = 1(1)N - 1$, of the transposition class of $S_N$, for $N = 2(1)9$. The dimension of such a representation is the quotient of $(2S + 1)(N!)$ by $[(N/2) + S + 1]![(N/2) - S]!$. When $N$ is as large as 9 this number can be quite large; for example, the dimension of the representation corresponding to $N = 9$, $S = \frac{3}{2}$ is 48, so that the corresponding matrices involve 2304 elements. Since the square of a transposition is the identity permutation, the matrices corresponding to a transposition are symmetric, and it seems uselessly lavish to ignore this fact in printing the tables.

The underlying calculations were performed on an IBM 1620 in the Statistical Laboratory and Computing Center at the University of Oregon and on an IBM 709 in the Pacific Northwest Research Computer Laboratory at the University of Washington.

Following an introductory description of the theory of molecular structure using representation matrices and a discussion of the construction of such matrices, the author appends a list of errata in the smaller tables of Yamanouchi [1], Inui & Yanagawa [2], and Hamermesh [3]. Also included is a list of 11 references.

A brief description of these tables has been published by the author [4].

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1. T. Yamanouchi, *Proc. Phys.-Math. Soc. Japan*, v. 18, 1936, p. 623.
2. T. Inui & S. Yanagawa, *Representation of Groups and Quantum Mechanics of Atoms and Molecules*, 2nd ed., Shohkabo, Tokyo, 1955.
3. M. Hamermesh, *Group Theory and its Application to Physical Problems*, Addison-Wesley, Reading, Mass., 1962.
4. S. Katsura, "Tables of representations of permutation groups for molecular integrals," *J. Chem. Phys.*, v. 38, 1963, p. 3033.

**24[I].**—D. S. Mitrinović & R. S. Mitrinović, *Tableaux d'une classe de nombres reliés aux nombres de Stirling*, VI., Belgrade, Mat. Inst., Posebna izdanja, Knjiga 6 (Editions spéciales, 6), 1966, 52pp., 24 cm.

The tables of ${}^{r}S_n^k$ for $n = 3(1)36$, reviewed in *Math. Comp.*, v. 19, 1965, pp. 151, 690, are here extended, in the same style, to the cases $n = 37$ and 38.

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**25[I, L].**—Henry E. Fettis & James C. Caslin, *Ten Place Tables of the Jacobian Elliptic Functions*, Report ARL 65–180 Part 1, Aerospace Research Laboratories, Office of Aerospace Research, United States Air Force, Wright-Patterson Air Force Base, Ohio, September 1965, iv + 562 pp., 28 cm. Copies obtainable upon request from the Defense Documentation Center, Cameron Station, Alexandria, Virginia.

This report contains 10D tables of the Jacobi elliptic functions $am(u, k)$, $sn(u, k)$, $cn(u, k)$, and $dn(u, k)$, as well as the elliptic integral $E(am(u), k)$ for $k^2 = 0(0.01)0.99$, $u = 0(0.01)K(k)$ and for $k^2 = 1$, $u = 0(0.01)3.69$. Here, as is conventional, $u$ represents $F(\phi, k)$, the incomplete elliptic integral of the first kind in Legendre's form, and $\phi$ is the amplitude function, $am(u, k)$.

The integral $E(am(u), k)$ as here tabulated is a by-product of a concurrent calculation of the Jacobi zeta function, defined by the relation

$$Z(u, k) = E(am(u), k) - \frac{E(k)}{K(k)} u,$$

where $K(k)$ and $E(k)$ are the complete elliptic integrals of the first and second kinds, respectively. The integral $K(k)$ and the ratio $E(k)/K(k)$ are also given to 10D for $k^2 = 0(0.01)0.99$.

These tables were calculated on an IBM 7094 computer system, using a subroutine based on the descending Landen transformation (also known as the Gauss transformation).

In addition to this information concerning the calculation of the tables, the authors include the definitions of the tabulated functions and a summary of their various properties.

This set of tables of the Jacobi elliptic functions is the most extensive compiled to date. A relatively inaccessible table prepared by the staff of the Project for Computation of Mathematical Tables [1] gave *sn u*, *cn u*, *dn u* to 15D for $k^2 = 0(0.01)1$, $u/K = 0.01, 0.1(0.1)1$. The well-known tables of Milne-Thomson [2] give only 5D values of these functions, over a much more restricted set of values of the arguments than the tables under review. It may also be noted here that the 12D tables of Spenceley & Spenceley [3], on the other hand, are arranged with the modular angle and the ratio $u/K$ as parameters.

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1. *Tables of Jacobi Elliptic Functions*, ms. prepared by the Project for Computation of Mathematical Tables, New York City; printed for limited distribution, Washington, D. C., 1942. (See *MTAC*, v. 1, 1943–1945, pp. 125–126, UMT **12**; *ibid.*, p. 425, RMT **207.**)
2. L. M. MILNE-THOMSON, *Jacobian Elliptic Function Tables*, Dover, New York, 1950. (See *MTAC*, v. 5, 1951, pp. 157–158, RMT **910.**)
3. G. W. SPENCELEY & R. M. SPENCELEY, *Smithsonian Elliptic Functions Tables* (*Smithsonian Miscellaneous Collections*, v. 109), Smithsonian Institution, Washington, D. C., 1947. (See *MTAC*, v. 3, 1948–1949, pp. 89–92, RMT **485.**)

**26[I, L].**—B. I. KOROBOCHKIN & YU. A. FILIPPOV, *Tablitsy modifitsirovannykh funktsiĭ Uittekera*, (*Tables of Modified Whittaker Functions*), Computing Center of the Academy of Sciences of the USSR, Moscow, 1965, xvi + 322 pp., 27 cm. Price 2.66 rubles.

These tables, in the well-known series under the general editorship of V. A. Ditkin, were produced by collaboration between the Computing Center of the Academy of Sciences of the USSR and the Computing Center of the Latvian State University. The functions tabulated are connected with solutions of the hypergeometric equation

$$zy'' + (\gamma - z)y' - \beta y = 0,$$

where we follow the authors in using $\beta$, rather than the more usual $\alpha$, for the first (or numerator) parameter. Much of the introductory text relates to the case in which $\gamma$ is any positive integer $k$, but the tables relate entirely to the case $\gamma = k = 2$, to which we shall confine ourselves.