This reviewer has compared these data with the 18D and 21D values of I_0 and I_1 given by Aldis [1] and thereby detected several rounding errors in the present tables, none exceeding a unit in the least significant figure.

The authors compared their values of $e^{-x}I_n(x)$, $n = 0, 1$, with the corresponding 10D data in Table 9.8 in the *NBS Handbook* [2] and discovered a number of rounding errors in the latter, which they will enumerate separately in an appropriate errata notice.

Despite the presence of rounding errors, these manuscript tables constitute a valuable addition to the extensive tabular literature relating to modified Bessel functions [3].

J. W. W.

1. W. S. Aldis, "Tables for the solution of the equation $d^2y/dx^2 + 1/x \cdot dy/dx - (1 + n^2/x^2)y = 0$," *Proc. Roy. Soc. London*, v. 64, 1899, pp. 203–223.

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.

3. A. Fletcher, J. C. P. Miller, L. Rosenhead & L. J. Comrie, *An Index of Mathematical Tables*, second edition, Addison-Wesley Publishing Company, Reading, Massachusetts, 1962, v. I, pp. 417–418, 423.

92[L, X].—C. Chang & C. Yeh, *The Radial Prolate Spheroidal Functions*, USCEE Report 166, Department of Electrical Engineering, University of Southern California, Los Angeles, California, June 1966, iii + 25 + 990 pp., 28 cm.

The radial prolate spheroidal functions are the two independent solutions of the differential equation

$$\frac{d}{d\xi}\left[(\xi^2 - 1)\frac{d}{d\xi}R_{mn}(c, \xi)\right] - \left[\lambda_{mn} - c^2\xi^2 + \frac{m^2}{\xi^2 - 1}\right]R_{mn}(c, \xi) = 0$$

which occurs in the solution of the time-periodic scalar wave equation in prolate spheroidal coordinates by the method of separation of variables.

The authors have herein tabulated to 8S the functions $R_{mn}^{(1)}(c, \xi)$, $R_{mn}^{(2)}(c, \xi)$ and their first derivatives with respect to ξ for $m = 0(1)9$, $n = m(1)9$, $c = 0.1(0.1)1(0.2)6$, $\xi = \xi_0(0.001)1.01(0.01)1.1, 1.25(0.25)2, 5, 10$, where ξ_0 varies from 1.004 when $m = 0$ to 1.009 when $m = 9$. Functional values corresponding to $\xi = 1.044$ and 1.077 are also included; they were calculated to check the corresponding entries in the tables of Flammer [1]. For each of the listed values of m, n, and c the corresponding eigenvalue λ_{mn} is tabulated to 12S except for $m = 0, 1$, where only 8S are given.

All the underlying calculations were carried to 12S at the computing center at the University of Southern California, and the final results were compared with the tables of Flammer, Slepian [2], Slepian & Sonnenblick [3], and Hunter et al. [4]. The computed values were also checked by use of the appropriate Wronskian relation. The belief is expressed by the authors that the tabulated values are accurate to at least 7S.

The computer output was reduced photographically prior to printing in report form, so that the contents of two computer sheets now appear on a single page; however, the numbering of the original sheets has been retained.

In an effort to make this report self-contained, the authors have included a number of formulas and expansions for both the angular and prolate spheroidal functions, following the notation and normalization adopted by Flammer [1]. The various methods used in calculating these tables are also described.

This introductory explanatory text of 21 pages, which includes an enumeration of the diverse fields of application of spheroidal functions, is followed by a list of 15 references. Inadvertently omitted from the list (although referenced in the introduction) is the treatise of Morse & Feshbach [5].

Unfortunately, the photographic reproduction of these elaborate tables has left much to be desired; in fact, on approximately 75 pages of the review copy an appreciable number of the tabular entries are only partially legible. This serious defect in the reproduction of these important tables naturally impairs their usefulness.

J. W. W.

1. C. FLAMMER, *Spheroidal Wave Functions*, Stanford Univ. Press, Stanford, Calif., 1957. (See *MTAC*, v. 13, 1959, pp. 129–130, RMT **20**.)

2. D. SLEPIAN, "Asymptotic expansions of prolate spheroidal wave functions," *J. Math. and Phys.*, v. 44, 1965, pp. 99–140.

3. D. SLEPIAN & E. SONNENBLICK, "Eigenvalues associated with prolate spheroidal wave functions of zero order," *Bell System Tech. J.*, v. 44, 1965, pp. 1745–1759.

4. H. E. HUNTER, D. B. KIRK, T. B. A. SENIOR & H. R. WITTENBERG, *Tables of Spheroidal Functions for* $m = 0$, Vols. I & II, Radiation Laboratory, University of Michigan, Ann Arbor, Michigan, 1965.

5. P. M. MORSE & H. FESHBACH, *Methods of Theoretical Physics*, Parts I & II, McGraw-Hill Book Co., New York, 1953. (See *MTAC*, v. 12, 1958, pp. 221–225, RMT **87**.)

93[M, X].—CARL H. LOVE, *Abscissas and Weights for Gaussian Quadrature for* $N = 2$ *to* 100, *and* $N = 125, 150, 175, 200$, NBS Monograph 98, U. S. Department of Commerce, 1966, iii + 88 pp., 26 cm. Price $.55. Paperbound.

The abscissas X_k and weights H_k are given to 24D and 23D, respectively, for the Gaussian formula:

$$\int_{-1}^{1} F(X)dx \approx \sum_{k=1}^{n} H_k F(X_k)$$

for $n = 2(1)100(25)200$.

There is, therefore, much overlap here with Table 1 of [1], which gives these numbers to 30S for $n = 2(1)64(4)96(8)168, 256, 384, 512$. Clearly, however, that table and this each give some n not given by the other.

The present monograph has an introduction and six references. The recent treatise [1]—see our review RMT **14**, *Math. Comp.*, v. 21, 1967, pp. 125–126—is not mentioned, as such. The introduction here does make the misleading statement: "A. H. Stroud is working on tables for $N = 2, 64, 96, 168, 256, 384$, and 512 but he has not published them at the present time." The omission of the argument differences: (1), (4), etc. changes the meaning entirely.

The nominal cost of the present tables is less than the fractional part of that of [1]—which costs $14.95—but, of course, they really can't be compared.

D. S.

1. A. H. STROUD & DON SECREST, *Gaussian Quadrature Formulas*, Prentice-Hall, Englewood Cliffs, N. J., 1966.