35[7].—HENRY E. FETTIS & JAMES C. CASLIN, *A* 20-D *Table of Jacobi's Nome and its Inverse*, Report ARL 69-0050, Aerospace Research Laboratories, Office of Aerospace Research, United States Air Force, Wright-Patterson Air Force Base, Ohio, March 1969, iv + 30 pp., 28 cm. [Copies obtainable from the Clearinghouse, U. S. Department of Commerce, Springfield, Va. 22151. Price $3.00.]

Jacobi's nome q is defined by the equation $q = \exp(-\pi K'/K)$, where K and K' are the quarter-periods of the Jacobian elliptic functions. The importance of this function derives from the fact that the Jacobian elliptic functions and theta functions possess well-known rapidly convergent expansions in terms of it.

This report consists of four tables: Table 1 gives q to 20D for $k^2 = 0.001(0.001)0.999$; Table 2 gives q to 20D for $\alpha = 0(0.1°)89°(0.01°)89.99°(0.0002°)90°$, where $\alpha = \sin^{-1} k$ is the so-called modular angle; Table 3 consists of 20D values of k and k' for $q = 0(0.001)0.5$; and Table 4 gives 20D values of q, $\bar{q}$, and $\bar{q}/q$ for $k' = 0.0001(0.0001)0.2$, as well as the second central differences of this tabulated ratio. The quantity $\bar{q}$ is defined as $\exp\{-\pi^2/[2 \ln(4/k')]\}$; it approximates q with an error of the order of $(k')^2$, as the authors note in their explanatory remarks.

The tables were computed on an IBM 1620 system by means of modular reduction using Gauss's transformation, all arithmetical operations being carried to 23D prior to rounding the final results to 20D.

The user of these tables will probably be disconcerted by a series of derangements of tabular entries in Table 1 (p. 8), due to a corresponding disorder in the output cards used in the automatic printing.

Moreover, two of the five listed references contain errors. For example, the title of the important table of Curtis [1] is misquoted and the relevant paper of Salzer [2] is located erroneously in the *Journal*, instead of the *Communications*, of the *ACM*. The authors have informed this reviewer that they are planning to issue an appropriate errata sheet listing these corrections.

Despite such regrettable typographical imperfections, these tables constitute a significant improvement both in range and size of tabular interval over earlier tables of the Jacobi nome.

J. W. W.

1. A. R. CURTIS, *Tables of Jacobian Elliptic Functions whose Arguments are Rational Fractions of the Quarter Period*, National Physical Laboratory, *Mathematical Tables*, Vol. 7, Her Majesty's Stationery Office, London, 1964. (See *Math. Comp.*, v. 19, 1965, pp. 154–155, RMT **10.**)

2. H. E. SALZER, "Quick calculation of Jacobian elliptic functions," *Comm. ACM*, v. 5, 1962, p. 399.

36[7].—HENRY E. FETTIS & JAMES C. CASLIN, *Tables of Toroidal Harmonics*, I: *Orders* 0–5, *All Significant Degrees*, Report ARL 69-0025, Aerospace Research Laboratories, Office of Aerospace Research, United States Air Force, Wright-Patterson Air Force Base, Ohio, February 1969, iv + 209 pp., 28 cm. [Copies obtainable from the Clearinghouse, U. S. Department of Commerce, Springfield, Va. 22151. Price $3.00.]

This report contains tables of both 11S and 16S values (all in floating-point form) of the toroidal harmonics, which are identifiable with the Legendre function of the