The eight tables on pages 1–56 fall into two groups.

Tables 1 and 2 list for $x = -0.99(0.01) + 0.99$, to 7D, $\theta = \cos^{-1}x$ and coefficients for the calculation of $P_s(\cos\theta)$ and $P_s^1(\cos\theta)$ when $I_0(\tau\theta)$ and $I_1(\tau\theta)$ are known, while Tables 3 and 4 list for $x = 1.01(0.01)3(0.05)5(0.1)10(1)60$, to 7D, $\eta = \cosh^{-1}x$ and coefficients for the calculation of $P_s(\cosh\eta)$ and $P_s^1(\cosh\eta)$ when $J_0(\tau\eta)$ and $J_1(\tau\eta)$ are known.

Tables 5 to 8 do not require values of Bessel functions to be available. Tables 5 and 6 list for $x = -0.90(0.01) + 0.99$, to 7D, values of $\theta = \cos^{-1}x$ and the first eight coefficients in the expansions of $P_s(\cos\theta)$ and $(1 + 4\tau^2)^{-1}P_s^1(\cos\theta)$ in powers of τ^2. Tables 7 and 8 list for $x = 1.01(0.01)3(0.05)5(0.1)10(1)60$, to 7D, $\eta = \cosh^{-1}x$ and the first eight coefficients in the expansions of $P_s(\cosh\eta)$ and $(1 + 4\tau^2)^{-1}P_s^1(\cosh\eta)$ in powers of τ^2.

There are no differences. Roundings in $\cosh^{-1}x$ for $x \leqq 10$ are as in (a) above, while for $10 < x \leqq 60$ there are upward roundings at $x = 35$ and 59, and unfortunately a major error at $x = 11$, where final 689 should be 699.

Taking the three volumes as a whole, the authors have achieved a gratifying fullness of coverage.

A. F.

1. Harvard University, *Annals of the Computation Laboratory*, v. 20, *Tables of Inverse Hyperbolic Functions*, Harvard University Press, Cambridge, Massachusetts, 1949.

80[L, M].—K. Singh, J. F. Lumley & R. Betchov, *Modified Hankel Functions and their Integrals to Argument 10*, Engineering Research Bulletin B-87, The Pennsylvania State University, University Park, Pennsylvania, October 1963, v + 29 p., 28 cm. Price $1.00.

Let

$$h_1(z) = (12)^{1/6}e^{-i\pi/6}[Ai(-z) - iBi(-z)] = (\tfrac{2}{3}z^{3/2})^{1/3}H_{1/3}^{(1)}(\tfrac{2}{3}z^{3/2}),$$
$$h_2(z) = (12)^{1/6}e^{i\pi/6}[Ai(-z) + iBi(-z)] = (\tfrac{2}{3}z^{3/2})^{1/3}H_{1/3}^{(2)}(\tfrac{2}{3}z^{3/2})$$

where the usual notation for Airy functions and Hankel functions is used. Tables are presented for the real and imaginary parts of

$$h(z), \int_0^s h(iu)\,du, \int_0^s\int_0^v h(iu)\,du\,dv, z = is,$$

for $s = -10(0.1)10$, where h stands for h_1 or h_2. The number of significant figures varies from 8 to 4. Most of the tables are new, though there is some overlap with the tables of M. V. Cerrillo and W. H. Kautz (see *Math. Comp.*, v. 16, 1962, p. 390). The functions were computed using ascending series and asymptotic series representations. The latter are not given in the text. For these and other representations, see Y. L. Luke, *Integrals of Bessel Functions*, McGraw-Hill Book Co., 1963. I find it most irritating that this report containing work sponsored by the U. S. government should carry a price tag. This petty practice should be discontinued.

Y. L. L.