MATHEMATICAL TABLES—ERRATA

References have been made to Errata in RMT **609** (Zimmerman), **610** (Buckingham), **612** (Kerawala & Hanafi), **618** (Goldman), **620** (U. S. Navy), **624** (Hay & Gamble), **625** (Herget); N **99** (Bertrand, Davis & Kirkham, Gray & Mathews, Meissel).

149.—E. P. Adams, *Smithsonian Mathematical Formulae* . . ., First reprint, Washington, D. C., 1939. See also *MTAC*, v. 1, p. 191; v. 2, p. **46**, 353; v. 3, p. 314.

P. 260, at $r = 45$, *for* 78689 . . ., *read* 0.78689 . . . .
p. 260, last line, *for* 90°*r*, *read* $90° - r$.

Frank Harrison

Univ. of Tennessee
Division of Anatomy

150.—S. P. Glazenap, *Matematicheskie i Astronomicheskie Tablitsy*. Leningrad 1932, p. 214–215.

Glazenap states that in K(86°48′) *for* 4.2744, *read* 4.2746. This is erroneous; 4.2744 is correct. The result is given correctly to 5D by H. B. Dwight in *Electrical Engineering*, v. 54, 1935, p. 711: 4.27444. By two methods I deduced the approximation K(86°48′) = 4.27444 35354 98331 19349 41.

This error of Glazenap has been twice reprinted in *MTAC*, namely: v. 1, p. 198, and v. 3, p. 268, and the reference on the latter page to corresponding errors in the first three editions of Jahnke & Emde is therefore incorrect; and further there is now an error at this point in the 1945 edition of Jahnke & Emde, as noted in *MTAC*, v. 3, p. 267.

John W. Wrench, Jr.

4711 Davenport St. N.W.
Washington 16, D. C.

151.—E. Jahnke & F. Emde, *Tables of Functions*. New York 1945. Supplement. See *MTAC*, v. 3, p. 41.

P. 5, l. 68^{13}, *for* 8392, *read* 8492;
l. 68^{14}, *for* 14067, *read* 14267;
p. 56, l. 7, *for* *d* Ar Ctg, *read* *d* Ar Ctg *x*.

Frank Harrison

Editorial Note: In the 1933 and 1938 editions, the corresponding corrections of p. 5 have been already noted, *MTAC*, v. 1, p. 397.

152.—T. L. Kelley, *The Kelley Statistical Tables*, 1948; see *MTAC*, v. **3**, p. 301.

I call attention to three errors in my *Tables*, namely:

p. 6, l. 21, *for* $-2t_{-2}$, *read* $+2t_{-2}$;
p. 7, l. 14, *for* $+u$, *read* $-u$;
p. 123, l. 3, $p = .9251$, the corresponding *x*, *for* 02 3827, *read* 1.4402 3827.

Truman L. Kelley

153.—H. W. Richmond, "Notes on a problem of the 'Waring' type," London Math. Soc., *Jn.*, v. 19, 1944, p. 38–41.

On p. 41, 1919 is erroneously listed among integers that are not the sum of four tetrahedral numbers, $n(n + 1)(n + 2)/6$, $n > 0$. The error is evident from the relation $1919 = 816 + 816 + 286 + 1$. The only integers between 1000 and 2000 which are not the sum of four tetrahedral numbers are 1007, 1117, 1118, 1153, 1227, 1233, 1243, 1314, 1382, 1402, 1468, 1478, 1513, 1523, 1578, 1612, 1622, 1658, 1678, 1693, 1731, 1738, 1742, 1758, 1767, 1803, 1858, 1907, 1923, and 1933. Those less than 1000 have been given in the writer's "On numbers expressible as the sum of four tetrahedral numbers," London Math. Soc., *Jn.*, v. 20, 1945, p. 3.

H. E. SALZER

154.—BAASMTC, *Mathematical Tables*, v. 1, second ed., 1946; first ed., 1931. See *MTAC*, v. 2, p. 122–123.

The 12D or 10D tables of polygamma functions appearing here, p. 42–59, were compared with corresponding tables in H. T. DAVIS, *Tables of the Higher Mathematical Functions*, v. 1, 1933, p. 291–349, and v. 2, 1935, p. 27–130. This comparison failed to reveal any discrepancies in the tables of the trigamma and tetragamma functions, but it did show four discordant entries in the tables of the digamma (or psi) function and eight discrepancies in the tabulated values of the pentagamma function.

These questionable data were recalculated to at least 22D, and the resulting approximations are as follows:

x	$d \ln (x!)/dx$
13.2	2.61761 76236 89490 85323 44
15.0	2.74101 33283 27460 36838 67
15.3	2.76017 67302 88333 27815 12
16.0	2.80351 33283 27460 36838 67

x	$d^4 \ln (x!)/dx^4$
0.40	1.82025 90339 47094 48138 65
24.4	0.00012 94440 44696 40467 30
26.4	0.00010 26770 36526 88073 24
29.4	0.00007 47779 76500 04736 67
39.4	0.00003 14756 68589 92571 28
42.4	0.00002 53244 58663 16147 29
48.4	0.00001 71006 50514 13644 04
50.4	0.00001 51632 69520 59975 27

From these more accurate data it may be concluded that the BAASMTC table of the digamma function contains a rounding error at $x = 13.2$, whereas at least three last-figure errors exist in Table 9, v. 1 of Davis's work. The three erroneous values correspond to $x = 16.00, 16.30$, and 17.00 in the notation of Davis, who tabulates $\Psi(x)$, which is equivalent to $d \ln (x - 1)!/dx$ in the notation adopted by BAASMTC and retained in this note. It should be noted that in Table 10, v. 1, p. 348 Davis gives correct 16D values of $\Psi(16.0)$ and $\Psi(17.0)$. The discrepancies in the tables of the pentagamma function are all attributable to last-figure errors, each less than a unit, in the BAASMTC table.

The "error" of 0.500047 unit in the twelfth decimal place of $d^4 \ln (x!)/dx^4$ at $x = 29.4$ recalls the remarks of J. W. L. GLAISHER as quoted by L. J. COMRIE in N **72**, *MTAC*, v. 2, p. 284–285.

JOHN W. WRENCH, JR.

4711 Davenport St., N.W.
Washington 16, D. C.

155.—U. S. COAST AND GEODETIC SURVEY, *Natural Sines and Cosines to Eight Decimal Places*, 1942; see *MTAC*, v. 1, p. 11, 56, 64–65, 87. Now sold by the Superintendent of Documents, Washington at $3.00 (instead of $1.75 in 1942).

A. The Coast and Geodetic Survey has issued the following list of errors in this edition, which, with the errata we have previously published, are all corrected in copies (still dated

1942) now offered for sale:

Page	Function	Angle	Correct Value
44	sin	3°30′45″	2663*0*
45	sin	3°39′24″	*77756*
108	cos	diff. at top of column	*75*
154	cos	12°44′44″	*35944*
190	sin	15°43′47″	*09*981
172, bottom of page, right side			
	345° sin + should be		345° cos +

B. Mr. E. G. H. Comfort, Illinois Institute of Technology, who drew the above matter to our attention, notes that the 8th decimal of the value for sin 72°21′52″ is one unit too small.

UNPUBLISHED MATHEMATICAL TABLES

76[C].—Clovis Faucher, *Table de Logarithmes à 10 Décimales.* MS. in possession of the author, 33 rue de Bel-Airs, Poitiers, France, xx, 574 p., beautifully written and neatly bound. 20.5 × 31 cm.

In this manuscript, loaned in 1948 for our inspection, Mr. Faucher tells us that he was "Géomètre en chef honoraire; ancien chef des services topographiques de la Côte d'Ivoire, de la Haute Volta et du Soudan français."

The main part of the table is arranged in three columns: (i) Numbers (N) in black; (ii) first five figures of Log N in red; (iii) Logarithmes complémentaires (L.c.) in blue. The argument column is the red column, where the range of values may be said to be 0(.00001).99999, if decimal points are inserted. Corresponding to each of these values the antilogarithm is given in the first column, to 11 digits (rounded off from 13 digit calculation) up to .69999, and to 10 digits (rounded from 12 digits) corresponding to .7(.00001).99999.

In the blue column are the remaining five decimals to be added to the right of the corresponding red-column entry. There are some indications about differences and throughout are attached signs to refine last digits: +(equivalent to .25), −(equivalent to .50), ×(equivalent to .75).

Suppose that it were required to find the logarithm of $\pi \approx 3.141592653$. Then

$N = 31415\ 92653\times$

$n = \mathit{31415\ 21237}-$ (next below N in table) $\log n = 49714$

$N - n = 00000\ 71416+$

next below *00000 71415*

corresp. Δ 1

Then $\log(N - n) = \bar{5}.85379-$ and L.c. $= \log(N - n) - \log n = \bar{5}.35665-$, corresponding to which in the log column is 98727 whence the required result

$$\log \pi \approx .49714\ 98727.$$

Thus the table is a combination of antilogarithms and of a species of subtraction logarithms.

R. C. A.

77[D].—Ernest Clare Bower (1890–), *Natural Circular Functions for decimals of a circle.* MSS. in possession of author, Douglas Aircraft Company, 3000 Ocean Park Boulevard, Santa Monica, Cal. Listed and punched card copies are available at nominal cost from NBSINA, Univ. California, 405 Hilgard Ave., Los Angeles, Cal., and The Rand Corporation, 1500 Fourth Street, Santa Monica, California.

In F. Callet, *Tables Portatives de Logarithmes*, Paris, 1795, tirage 1819 there is a 15D table of $\sin x$ and $\cos x$ for $x = 0(0^q.001)0^q.5 = 0(0^g.1)50^g = 0(0^c.00025)0^c.125$. This was