

## TABLE ERRATA

515.—ARTHUR CAYLEY, *An Elementary Treatise on Elliptic Functions*, second edition, Dover Publications, New York, 1961.

On p. 48, line 3, the formula should read

$$\frac{dF}{dk} = \frac{1}{kk'^2} (E - k'^2 F) - \frac{k \sin \phi \cos \phi}{k'^2 \Delta}.$$

The factor  $\Delta$  in the last denominator was inadvertently omitted.

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516.—A. ERDÉLYI, W. MAGNUS, F. OBERHETTINGER & F. G. TRICOMI, *Higher Transcendental Functions*, Volume II, McGraw-Hill Book Co., New York, 1953.

On p. 307, in formula (22) of Section 13.5, for  $1 - k^2 \sin^2 \phi$ , read  $(1 - k^2 \sin^2 \phi)^{1/2}$ .

On p. 317, in formula (12) of Section 13.7, for  $\sin \phi \cos \phi$ , read  $k \sin \phi \cos \phi$ .

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EDITORIAL NOTE: For previous notices of errata in this work see *Math. Comp.*, v. 24, 1970, p. 239, MTE 450; *ibid.*, p. 999, MTE 468, and editorial footnotes thereto.

517.—K. HAYASHI, *Tafeln für die Differenzenrechnung sowie für die Hyperbel-, Besselschen, elliptischen und anderen Funktionen*, Springer, Berlin, 1933.

Recalculation to 15D on an IBM 360/165 of the 10D values of the complete elliptic integral of the second kind,  $E(m)$ , in Table IV (pp. 61–65) has revealed errors in 49 of the entries. Nine of these errors have been previously identified and corrected by Fletcher [1]; those remaining all occur in the final decimal place.

Specifically, the final tabulated decimal figure of  $E(m)$  should be increased by a unit for  $m = 0.018, 0.178, 0.214, 0.404, 0.406, 0.582, 0.642, 0.650, 0.697, 0.786, 0.833, 0.882, 0.902, 0.903, 0.904, 0.905, 0.909, 0.921, 0.939, 0.962, 0.965, \text{ and } 0.966$ ; it should be decreased by a unit for  $m = 0.092, 0.094, 0.095, 0.096, 0.114, 0.446, 0.491, 0.533, 0.649, 0.662, 0.707, 0.719, 0.731, 0.745, 0.757, 0.790, 0.936, 0.982, \text{ and } 0.989$ . The final figure in the tabular entry corresponding to  $m = 0.975$  should be increased by 2 units.

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1. A. FLETCHER, "Guide to tables of elliptic functions," *MTAC*, v. 3, 1948, pp. 229–281; see esp. pp. 265–266.

518.—K. HAYASHI, *Tafeln der Besselschen Theta-, Kugel- und anderer Funktionen*, Springer, Berlin, 1930.

A recalculation to 15D on an IBM 360/165 system of all the entries in Table IV (pp. 61–69) and Table V (pp. 71–82) has revealed a large number of new corrections needed therein.

Thus, a total of 109 corrections are required in the 8–10D values of  $K(m)$  in Table IV; of these a total of 91 involve only unit changes in the final figure. The remaining corrections are as follows:

<i>m</i>	<i>for</i>	<i>read</i>	<i>m</i>	<i>for</i>	<i>read</i>
.00023	8	3	.99930	82	98
.00033	384	416	.99936	89	91
.00055	97	81	.99970	4	2
.99889	81	79	.99977	5	8
.99893	2	6	.99988	81	79
.99904	5	2	.999906	3	0
.99907	5	7	.999987	2	4
.99924	8	4	.999998	898	900
.99926	416313	146313	.999999	38	40

Also in Table IV, a total of 98 corrections were found to be necessary in the 8D values of  $K'/K$ . Of these, 68 result from rounding errors, and seven of the remaining corrections have been reproduced in the FMRC *Index* [1] from Hayashi's *Berichtigungen* sheet, dated 1932. The remaining significant corrections are:

<i>m</i>	<i>for</i>	<i>read</i>	<i>m</i>	<i>for</i>	<i>read</i>
.0000064	1	7	.00107	38	41
.0000068	38	49	.00115	1483	7848
.0000090	19	26	.00137	1984	2366
.0000094	7	5	.00151	09	15
.00023	6	8	.00181	05	11
.00033	85	94	.00183	70521	69798
.00034	79	86	.00212	26	33
.00049	45	52	.00240	31433	29650
.00070	82	92	.00243	44	50
.00076	9	6	.00260	15	22
.00093	08	10	.00267	49464	31851
.00096	42	39			

Furthermore, in the *Berichtigungen*, corresponding to  $m = .00064$ , *for* 89, *read* 91.

The 8D values of  $\log q$  in Table IV are infected with 115 errors, of which 84 are minor (rounding) errors. The remainder require the following corrections:

<i>m</i>	<i>for</i>	<i>read</i>	<i>m</i>	<i>for</i>	<i>read</i>
.0000064	47	38	.00111	2	4
.0000068	56	41	.00115	91453	82769
.0000090	57	48	.00137	90345	89824
.0000094	89	91	.00151	14	06
.00023	3	0	.00157	0081	2081
.00033	75	63	.00181	201	192
.00034	86	77	.00183	1891	2878
.00042	822052	922053	.00212	71	63

<i>m</i>	<i>for</i>	<i>read</i>	<i>m</i>	<i>for</i>	<i>read</i>
.00049	61	52	.00240	58860	61292
.00054	7106	9106	.00243	57	48
.00064	2	0	.00260	63	55
.00070	24	10	.00267	73138	97169
.00076	5	9	.99861	23	53
.00093	501	499	.99923	23	63
.00096	6	9	.99983	752180	572180
.00107	8	4			

The 8D values of the arithmo-geometric mean  $M(1, k')$  in Table IV contain only eight errors, all of a unit in the last place.

In Table V, the 10–12D values of  $K(m)$  contain a total of 32 errors. Eight of these have been noted by Fletcher [2]; the remainder are all unit errors in the final digit.

A total of 28 errors were detected in the 10D values of  $K'/K$  in Table V. Of these, 19 are rounding errors, and seven of the remaining are listed in [1]. The other two corrections are: when  $m = .073$ , *for* 256, *read* 526; when  $m = .761$ , *for* 4489, *read* 7489.

The 10D values of  $\log q$  in Table V require 39 corrections, of which 36 are attributable to rounding errors. Eight of these corrections have appeared in [2].

Just six errors were discovered in the 12D table of  $M(1, k')$ . Five of those have been noted in [1], and the sixth (at  $m = 0.877$ ) is due to failure to round up the last place.

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1. A. FLETCHER, J. C. P. MILLER, L. ROSENHEAD & L. J. COMRIE, *An Index of Mathematical Tables*, 2nd ed., Addison-Wesley, Reading, Mass., 1962, vol. II, p. 851.

2. ALAN FLETCHER, "Guide to tables of elliptic functions," *MTAC*, v. 3, 1948, pp. 229–281 (esp. pp. 263–264).

519.—W. MAGNUS, F. OBERHETTINGER & R. P. SONI, *Formulas and Theorems for the Special Functions of Mathematical Physics*, Springer-Verlag, New York, 1966.

On p. 370, in the formula for  $\partial F/\partial k$ , a factor  $k$  should be inserted before  $\sin \phi \cos \phi$  in the right member.

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EDITORIAL NOTE: For notices of additional errors in this and earlier editions, see *Math. Comp.*, v. 24, 1970, p. 505, MTE 464; v. 25, 1971, p. 201, MTE 477, and the editorial footnotes thereto.