H. BATEMAN, *Partial Differential Equations of Mathematical Physics*. Cambridge University Press, 1932, p. 457, and by EDWIN P. ADAMS, *Smithsonian Mathematical Formulae and Tables of Elliptic Functions*. Washington, 1922 and 1939, p. 186. In the American edition of Bateman's work, New York, 1944, p. 457, he gave a corrected result, except that his arbitrary constant for the terminating series should not equal the constant for the logarithmic term.

R. GRAN OLSSON, "Tabellen der konfluenten hypergeometrischen Funktion erster und zweiter Art," *Ingenieur-Archiv*, vol. 8, 1937, p. 99–103, also p. 376–377, used the incorrect results of WEBB & AIREY to compute tables of the second solution for $\gamma = 2, 3$.

The corrected series for the Whittaker function was first given by R. STONELEY, "The transmission of Rayleigh waves in a heterogeneous medium," R.A.S., *Mo. Not., Geophys. Suppl.*, v. 3, 1934, p. 227, which he obtained by comparing the terms of the series for $W_{k,m}(z)$, when $2m$ is an integer, which was given by S. GOLDSTEIN, "Operational representation of Whittaker's confluent hypergeometric function and Weber's parabolic cylinder function," London Math. Soc., *Proc.*, s. 2, v. 34, 1932, p. 103–125, with the corrected Webb & Airey formula.

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UNPUBLISHED MATHEMATICAL TABLES

60[F].—JOHN THOMSON, *Table of Twelve-Figure Logarithms*, mss. in the possession of the Royal Astronomical Society. Compare UMT **30**, v. 1, p. 368.

This MS table is described at length by J. W. L. GLAISHER in R.A.S., *Mo. Not.*, v. 34, 1874, p. 447–475. Glaisher lists many errors found in other tables with the aid of this manuscript.

The first 8 figures of the 10,000 12-figure logarithms from 100,000 to 110,000 (all in Volume A_4) were recently compared with the proofs of a table appearing in a new set of tables now in press for Messrs Chambers. The following errors were recorded. Each logarithm in Thomson is written in full, in four triads, and with the characteristic or index.

Number	Triad	*For*	*Read*
100934	1	104	004
101051	2	440	540
101068	2	513	613
101171	Index	4	5
102553	2	958	948
102707	2	599	600
104317	2	455	355
104819	3	112	012
105148	1	121	021
105471	1	123	023
106525	3	342	542
106947	2	178	168
107021	2	468	469
109477	3	287	887

It may not be without interest to record that when the present writer tried in 1926 to see these tables at the library of the Royal Astronomical Society, he was informed that they were out on loan. After persistent efforts by the Secretary, they were received two years later from Dr. Glaisher, who had had them for 47 years! But for this intervention, they might have gone to a bookseller when his library was disposed of after his death in 1928. Now after three quarters of a century, they have once more been useful as an independent check on a published table.

L. J. C.

61[F].—ALBERT GLODEN, *Tables of the Decimal Endings of Cubes, Fourth Powers, and Eighth Powers together with the Linear Forms of the Corresponding Roots.* 6 + 7 + 3 leaves, 21 × 29.7 cm. Typed manuscripts in the possession of the author (rue Jean Jaurès 11, Luxembourg), and of the Brown University Library.

These tables give 1-, 2- and 3-digit endings of cubes, fourth and eighth powers (for the decimal system), arranged in order of magnitude, as well as 4-digit endings of fourth powers. With each such ending are listed all numbers whose corresponding power ends in this way. Thus with the fourth power ending ···3041 the author gives the entry

3041   77,361

This means that all numbers whose fourth power ends in 3041 are given by

$$1250\,n \pm 77, \qquad 1250\,n \pm 361 \qquad (n = 0, \pm 1, \pm 2, \cdots).$$

These tables are extensions to higher powers of corresponding tables, such as those of CUNNINGHAM,[1] concerning squares. The lists of power endings are useful in showing at a glance that a given number is not a power of degree 3, 4, or 8. The rest of the information is useful in setting up exclusion procedures in dealing with diophantine equations of these degrees.

D. H. L.

[1] A. J. C. CUNNINGHAM, *Quadratic and Linear Tables.* London, 1927, p. 89–92.

62[F].—LUIGI POLETTI, *Atlante di centomila numeri primi di ordine quadratico entro cinque miliardi.* Manuscript in possession of the author, Via Cairoli 1, Pontremoli, Italy.

For many years Poletti has been investigating the distribution of primes of the form $ax^2 + bx + c$ for as many as 366 different values of (a, b, c), and now has a list of 116683 primes $> 10^7$ and $\leqslant 5101683361$. The principal forms considered are those for which $(a, b, c) = (1, 1, 1), (1, 1, -1), (2, 2, 1), (2, 2, -1), (1, 1, 17), (6, 6, 31), (3, 3, 1), (3, 3, -1), (1, 21, 1)$ and

$$x^2 + x + 41 \qquad x^2 + x + 72491$$
$$x^2 + x + 19421 \qquad x^2 + x + 146452961.$$
$$x^2 + x + 27941$$

These last five were chosen for study on account of their apparently high density of primes among the numbers they represent. The first of these is due to EULER and admits of no prime factor < 41. The second was suggested by D. H. L. and admits of no factor < 47. The third and fourth are due to N. G. W. H. BEEGER and also admit of no factor < 47. The last is due to D. H. L. and admits of no factor < 109. (See *Sphinx* v. 6, 1936, p. 212–214; v. 7. 1937, p. 40; v. 9, 1939, p. 83–85.) These 5 series have been pushed to high limits x, in fact to $x = 55102, 32147, 16356, 16345$ and 70400 respectively. The corresponding numbers of primes found are 18667, 11473, 6897, 7016 and 27858. The percentages of primes in these five cases are thus .3388, .3569, .4216, .4292 and .3957. It is interesting to note that it has never been proved that any one of these quadratic progressions contains infinitely many primes.

D. H. L.

AUTOMATIC COMPUTING MACHINERY

This new Section will deal with matters pertaining to large-scale automatically-sequenced computing machinery. The wartime need for ultra high-speed calculations has caused a development of the field which may well have a profound effect upon methods of classification and compilation of data and of numerical computation. As a result of this activity, there