QUERIES

4. LOG LOG TABLES.—In calculations of some physical phenomena the logarithms of logarithms are employed. Are there any tables to facilitate such calculations?

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EDITORIAL NOTE.—In E. CHAPPELL, *Five-Figure Mathematical Tables*, London, 1915, there is a log log table p. 171–207, and an anti log log table p. 209–219. There is also a log log table of numbers, with varying intervals, from 0.0010 to 1000, in S. P. GLAZENAP, *Matematicheskie i Astronomicheskie Tablitsy*, Leningrad, Acad. Sci., 1932, p. 49–69; but it is obvious that this table is a reproduction of the corresponding table of Chappell, except for the omission of his tables of proportional parts. Chappell's term "Logs" heads each page. In P. F. VERHULST, *Traité Élémentaire des Fonctions Elliptiques*, Brussels, 1841, there is a table of log log q^{-1}, to 12–14D, p. 305–309. There are other tables of this type, as well as similar tables, with different argument, for example, by H. NAGAOKA and S. SAKURAI, in Inst. Phys. Chem. Research, Tokyo, *Sci. Papers*, v. 2, 1922, p. 7–16. Where are other log log tables?

5. TABLES OF $N^{3/2}$.—We have had a request for three-halves powers of numbers to more than three places. The three-place table, on p. 23 of M. MERRIMAN, *Mathematical Tables for Classroom Use*, New York, 1915, is in our Library. We should appreciate receiving references to any table such as has been requested.

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EDITORIAL NOTE.—The three-place table referred to above is given also in *American Civil Engineer's Handbook*, ed. by T. MERRIMAN and T. H. WIGGIN, fifth ed., New York, 1930, p. 25. This is a table for $N = [0.00(0.01)4.49; 3D]$. It is an abridgement of tables in R. E. HORTON, *Weir Experiments, Coefficients, and Formulas*, U. S. Geological Survey, *Water-Supply and Irrigation Paper*, no. 200, 1907, p. 171–176, $N = [0.000(0.001)1.490$; mostly 5D], and $N = [0.00(0.01)12; 4D]$. Table 41 in U. S. Dept. of Interior, Bureau of Reclamation, *Hydraulic and Excavation Tables*, eighth ed., 1940, p. 126–132, gives $N^{3/2}$, for $N = [0.000(0.001)1.499; 4D]$ and $N = [1.50(0.01)19.99; 4S]$. By making use of Barlow's *Tables of Squares, Cubes, Square Roots, . . . of all Integer Numbers up to* 12,500, edited by L. J. Comrie, fourth ed., London, 1941, 23^3 is found to be 12167; the square root is given as 110.304125. Hence this volume readily yields the three-halves power of integers, and other numbers, up to 23, to more than 3D. H. T. DAVIS, of Northwestern University, has manuscript tables of $N^{\pm 3/2}$ for $N = [1(1)100$, and $100(10)1000; 10D]$, with first differences. What other tables of $N^{3/2}$ are there, to more than 3D?

6. AN ENGEL TABLE.—In 1928 the State Statistical Bureau of the Czechoslovakian Republic published *Handweiser zur harmonischen Analyse*, by LEO WENZEL POLLAK, then professor in the German University of Prague, but now residing in Ireland. This appeared as part II of *Prager Geophysikalische Studien*, or of *Čechoslovakische Statistik*, v. 54, or s. 12, part 10. 23.3 × 31.6 cm. It is a work of 72*, 98 p. most of it filled with important mathematical tables. On p. 28* is a reference to *Zehnstellige Tafeln der Sinus, Cosinus und Tangenten für die dezimale Teilung des Nonagesimalgrades*, calculated by "Hofrat E. Engel." This was published in 1920 by the "General Direktion des Grundsteuerkatasters (Österr.-Triangulierungs- und Kalkulbureau)." My attention was first directed to this table by J. C. P. Miller in a footnote of his review in *Math. Gazette*, 1942, p. 228. In what public or private library may this Engel table be consulted? It is not in the larger libraries of America, or in the library of the U. S. Geological Survey.

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