NOTES

1. *Who Was Who 1929–1940, a Companion to Who's Who*, London, 1941, contains sketches of two notable table makers, JOHN ROBINSON AIREY (1868–1937) and ERNEST WILLIAM BROWN (1866–1938). Mr. Airey was principal of the West Ham Technical Institute, 1912–18, and principal of the City of Leeds Training College, 1918–33. He became a member of the Mathematical Tables Committee of the Br. Ass. Adv. Sci. in 1911, and was its secretary 1916–29. He was a coeditor of the *Philosophical Magazine*. Here, in *Proceedings* of the London Physical So., and in *Reports* of the Br. Ass. Adv. Sci., he published many of his tables. His brother Sir Edwin Airey is head of a large firm of building contractors and engineers. See *Times*, London, 17 Sept. 1937; see RMT **81.**

Professor Brown was a sixth wrangler at Cambridge in 1887, and came to the United States in 1891, as an instructor in mathematics at Haverford College. His connection with Yale University began in 1907 as professor of mathematics. Shortly after the publication of his great *Tables of the Motion of the Moon*, 1919, he became Sterling professor of mathematics, 1921–31; then first Josiah Willard Gibbs professor, 1931–32; and professor emeritus, 1932–38. He was naturalized as a citizen of the United States in 1922. His outstanding position as mathematician and mathematical astronomer, and the long list of honors conferred on him, are set forth, with a complete bibliography of his writings, and a portrait, in R. C. Archibald, *A Semicentennial History of the American Mathematical Society 1888–1938*, New York, 1938. See also C. G. Darwin, *Obituary Notices of Fellows of The Royal Society*, 1940, p. 19–22+portrait plate; W. J. Eckert, *Pop. Astr.*, v. 47, 1939, p. 63–66, portrait; and F. Schlesinger, *Astrophysical Jn.*, v. 89, 1938, p. 152–155 and portrait.

2. In London Math. So., *Jn.*, v. 16, 1941, p. 139–144 is an obituary notice by E. T. Whittaker of another notable table maker EDWARD LINDSAY INCE (1891–1941). He was a professor of pure mathematics at the Egyptian University, Cairo, 1926–31; a lecturer at Imperial College, South Kensington, 1932–35; and head of the department of Technical Mathematics, University of Edinburgh, 1935–41. After eight years devoted to the task he published (1932) tables of the characteristic numbers of Mathieu's functions, with their zeros and turning points. Volume 4, of the *Mathematical Tables* of the Br. Ass. Adv. Sci., was Ince's *Cycles of Reduced Ideals in Quadratic Fields*, 1934. See RMT **22, 41.**

3. In *Science*, n.s., v. 96, p. 294–296, 25 Sept. 1942, there is an account by R. C. Archibald of the set-up and remarkable achievements of "THE NEW YORK MATHEMATICAL TABLES PROJECT" which has been in existence for just five years, as a part of the Government's Works Projects Administration Program. Lyman J. Briggs, director of the U. S. Bureau of Standards, has been determining the Project's policies and activities, and overseeing the distribution of its publications; and Arnold N. Lowan has been the Project's capable technical supervisor. A year ago 350 computers were working, in two shifts, in order fully to utilize 150 computing machines. By August the number of computers had been reduced to 250. Since the WPA is to be liquidated on 1 February 1943 the New York Mathematical Tables Project is also to be terminated by that date. Had all the computers in the Project been dispersed, the loss to scientific research would have been irreparable. We learn, however, that 47 members of the group have been taken over by the U. S. Bureau of Standards and by the Hydrographic Office.

Unless a much more adequate nucleus of the present Project is preserved, with calculating machines, a large number of mathematical tables now in process may never come to publication.

R. C. A.

QUERIES

1. Tables to Many Places of Decimals.—Various tables, computed to from 15 to 60 or more places of decimals, have been published in the distant past, and continue to appear in recent times; several tables of this kind are referred to in this issue of *MTAC*. In what specific problems of research do their solutions make such tables highly desirable? There are doubtless many problems of this kind which might be formulated by the specialists in different fields. An appeal for contributions of such formulations is herewith made. Professor Lehmer, a specialist in the theory of numbers, makes an interesting start in this direction in QR **1**, extracted from a personal letter dated 7 November 1942.

R. C. A.

QUERIES—REPLIES

1. Tables to Many Places of Decimals.—As to the sort of problems in which great accuracy in logarithms is helpful, you cannot draw the line between 20 figure problems and over 100 digit problems. I could not pretend to describe all such problems but those with which I have had something to do are of the following type: There is defined some numerical function whose value is an integer for each integer value of the variable. Quite often the function is defined by words (such as the number of ways that such and such a thing can be done). It often happens that when the argument of the function is only fairly large the value of the function is extravagantly large. Even so, this value is an integer and it is either even or odd (or perhaps we should like to know if it is divisible by 23 to check up on a conjecture). Perhaps there is no workable formula with which to calculate an isolated value of the function. Perhaps even a recursion formula for calculating a complete table of the function is not feasible. Then we may turn to an approximate formula, a series consisting of infinitely many terms which are values of an analytic function [often a Bessel function]. If enough terms of this series are taken so that the sum of the remainder terms is less than 1/2 in absolute value then the integer we are looking for is the nearest integer to the value we get from the series. Since these terms must add up to an extravagantly large amount some terms must be calculated with extreme accuracy. We do not have tables of Bessel functions to say 100