16[A].—Rudolph Ondrejka, *The First 100 Exact Double Factorials*, ms. of 12 handwritten sheets (undated) deposited in the UMT file.

These unpublished tables consist of two parts: the first consists of the exact values of $(2n - 1)!! = 1 \cdot 3 \cdot 5 \cdots (2n - 1)$ for $n = 1(1)100$; the second consists of the exact values of $(2n)!! = 2 \cdot 4 \cdot 6 \cdots 2n$ for the same range of n. These data were computed by the author on a desk calculator "many years ago" and were subsequently misplaced. Each tabular entry after the first was calculated from its predecessor, and an overall check consisted of forming the product of the last entry in each table and comparing that result with $200!$.

The only tables of this kind of comparable size appear to be unpublished ones [1] calculated by J. C. P. Miller on the EDSAC in 1955. His tables cover the same range for the even double factorial and a larger range for the odd double factorial; however, the increment in the argument n is 10 to $n = 100$, and it is 50 beyond that to $n = 250$.

The most extensive published tables of exact values of such numbers are those of Potin [2] and Hayashi [3], which extend to only $n = 25$.

Consequently, the present manuscript tables supply valuable numerical information that has been hitherto unavailable.

J.W.W.

1. A. Fletcher, J. C. P. Miller, L. Rosenhead & L. J. Comrie, *An Index of Mathematical Tables*, Vol. I, 2nd ed., Addison-Wesley, Reading, Mass., 1962, p. 53.
2. L. Potin, *Formules et Tables Numériques*, Gauthier-Villars, Paris, 1925.
3. K. Hayashi, *Fünfstellige Funktionentafeln*, Springer, Berlin, 1930.

17[A, F].—M. Lal, *Expansion of* $\sqrt{2}$ *to* 19600 *Decimals*, Memorial University of Newfoundland, St. John's, Newfoundland, Canada, ms. of 4 typewritten pp. + 2 tables deposited in the UMT file.

The main table here has an attractively printed value of $\sqrt{2}$ correct to 19600 decimals. This is somewhat more accurate than the recent computation to 14000 decimals [1]. As in [1], we also have here a table of the distribution of the decimal digits and a chi-square analysis of their presumed, and apparent, equidistribution.

This computation required 14.2 hours on an IBM 1620, and the check $(\sqrt{2})^2 = 2$ required 4 hours. Since this computer is a small decimal machine, the author elected to compute $\sqrt{2}$ *one digit at a time*. We may indicate his method as follows:

Let $A_k = [10^k\sqrt{2}]$ and $A_{k+1} = 10A_k + a_{k+1}$, so that a_k is the kth digit. Let $B_0 = 1$ and

$$B_{k+1} = 100B_k - \sum_{n=1}^{a_{k+1}} (20A_k + 2n - 1)$$

where a_{k+1} is the largest value of n which leaves the difference positive. If there is no such n, then $a_{k+1} = 0$. Thus we have

$$A_0 = 1 \qquad B_0 = 1$$
$$A_1 = 14 \qquad B_1 = 4$$
$$A_2 = 141 \qquad B_2 = 119, \quad \text{etc.}$$