the column states "ST+1", while if CN is a strong pseudoprime to the base p but $(*)$ does not hold, the column states "ST−1".

Col. 13 lists the number (3 through 7) of prime factors in CN, and Col. 14 gives the factorization of CN. The reviewer easily checked that the three Carmichaels $< 25 \cdot 10^9$ that are "acceptable Perrin composites" [1] are in the table as CN #1353, #1375 and #2142. But the fourth Carmichael that is an acceptable Perrin composite is beyond this table, since it equals $43234580143 = 223 \cdot 5107 \cdot 37963$. See the next review.

D. S.

1. G. C. Kurtz, Daniel Shanks, and H. C. Williams, *Fast primality tests for numbers less than* $50 \cdot 10^9$, Math. Comp. **46** (1986), 691–701.
2. Carl Pomerance, J. L. Selfridge and Samuel S. Wagstaff, Jr., *The pseudoprimes to* $25 \cdot 10^9$, Math. Comp. **35** (1980), 1003–1026.
3. Daniel Shanks, *Solved and unsolved problems in number theory*, 3rd ed., Chelsea, New York, 1985.

22[11A15, 11Y55].—Gerhard Jaeschke, *Table of all Carmichael numbers* $< 10^{12}$, 21 computer output sheets deposited in the UMT file.

This table of the 8238 Carmichael numbers (CN) $< 10^{12}$ was placed in the UMT file in connection with the paper [1]. They are listed 395 per page in five columns and 79 rows. No other information is given; compare the elaborate detail in the previous review. Thus, even to determine that 43234580143, which is mentioned in the previous review, is CN #2652, requires a moderate effort. The present table, therefore, supersedes Wagstaff's table only in part.

Three points about [1] may be mentioned here. A CN may be defined as a number that satisfies

$$a^{\mathrm{CN}} \equiv a \pmod{\mathrm{CN}}$$

for *all* integers a. This is both simpler and more general than the definition given in [1]. Even a casual glance at the table shows that most (?) of the CN end in the decimal digit 1. This has long been known. In [1], the CN are analyzed (mod 12) but not (mod 10). Swift's earlier UMT table of the 646 CN $< 10^9$ has an "Author's summary" [2] wherein CN that are products of three primes are also analyzed.

As submitted, each page of the present table had a two-inch solid black band at the top of the page. After determining that there was no information here, the reviewer boldly sliced off this top with a paper trimmer. This (a) reduced the space requirement of the table in the UMT file and (b) enabled the reviewer to appropriately celebrate the 200th anniversary of the French Revolution.

D. S.

1. Gerhard Jaeschke, *The Carmichael numbers to* 10^{12}, Math. Comp. **55** (1990), 361–367.
2. J. D. Swift, *Table of Carmichael numbers to* 10^9, Review **13**, Math. Comp. **29** (1975), 338–339.