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*Transcendental number theory*, by Alan Baker, Cambridge Univ. Press, New York, 1975, x + 147 pp., $13.95.

*Lectures on transcendental numbers*, by Kurt Mahler, Edited and completed by B. Diviš and W. J. LeVeque, Lecture Notes in Math., no. 546, Springer-Verlag, Berlin, Heidelberg, New York, 1976, xxi + 254 pp., $10.20.

*Nombres transcendants*, by Michel Waldschmidt, Lecture Notes in Math., no. 402, Springer-Verlag, Berlin and New York, 1974, viii + 277 pp., $10.30.

The last dozen years have been a golden age for transcendental number theory. It has scored successes on its own ground, while its methods have triumphed over problems in classical number theory involving exponential sums, class numbers, and Diophantine equations. Few topics in mathematics have such general appeal within the discipline as transcendency. Many of us learned of the circle squaring problem before college, and became acquainted with Cantor's existence proof, Liouville's construction, and even Hermite's proof of the transcendence of $e$ well before the close of our undergraduate life. How can we learn more?

Sophisticated readers may profitably consult the excellent survey articles of N. I. Feldman and A. B. Shidlovskiĭ [9], S. Lang [12], and W. M. Schmidt [17]. I will begin by addressing the beginner who has a solid understanding of complex variables, basic modern algebra, and the bare rudiments of algebraic number theory (the little book of H. Diamond and H. Pollard [8] is more than enough). My first advice is to read the short book of I. Niven [14] for a relaxed overview of the subject. If the reader is impatient, he may take Chapter 1 of Baker for an introduction. Either way he will learn short proofs of the Lindemann-Weierstrass theorem, that if the algebraic numbers $\alpha_1, \ldots, \alpha_n$ are distinct, then

$$\beta_1 e^{\alpha_1} + \cdots + \beta_n e^{\alpha_n} \neq 0$$

for any nonzero algebraic numbers $\beta_1, \ldots, \beta_n$. As special cases of this $e$ and $\pi$ are transcendental. These proofs are unmotivated; Baker mentions that they stem from the problem of approximating $e^x$ by rational functions of $x$, and refers the reader to Hermite's original papers. At this point the reader may also find it most enjoyable and enlightening to turn to the appendix of Mahler's book where a thorough discussion of most of the classical proofs for