some new examples, and a chapter on the application to primitive divisors of Lucas and Lehmer numbers.

Other topics of transcendence have not found such application outside the theory. There are several chapters on transcendence theory of elliptic and abelian functions, which can now prove, for example, that $\Gamma(\frac{1}{4})$ is a transcendental number. Then follows a section on independence results concerning meromorphic functions and polynomials in several variables. This includes an exposition of Čudnovskiĭ's new concept of the semi-resultant of two polynomials—an idea that could have wider application. Finally there are some new applications of a method due to Mahler for proving the transcendence, at algebraic points, of a function satisfying certain functional equations.

Often it is unclear why conferences should produce proceedings volumes; for their contents would be as appropriately published, and more widely circulated, if it appeared in research journals. In this instance the editors intended to mould the contributions into an advanced graduate text that would bring the reader to the frontiers of research in transcendence theory. They have achieved a praiseworthy degree of success.

D. A. BURGESS

HALMOS, P. R. and SUNDER, V. S., *Bounded Integral Operators on L^2 Spaces* (Ergebnisse der Mathematik und ihrer Grenzgebiete, Springer-Verlag, 1978), 132 pp., Cloth DM 33, U.S.$18.20.

This book is concerned with the common area of the classical theory of integral equations and the modern algebraic approach to bounded linear operators on Hilbert space. The three principal questions dealt with are: (a) which operators on L^2 of a prescribed measure space are integral operators; (b) which operators are unitarily equivalent to integral operators; (c) which operators are such that their unitary equivalence class consists only of integral operators. Many classical examples, associated with such names as Abel, Volterra, Hilbert, and several important classes of integral kernels (in particular Carleman kernels and "order-bounded" kernels) are discussed. The book gives a systematic presentation of current knowledge and the unsolved problems and suggests lines of further research. It is clearly and concisely written and should prove invaluable both to specialist and non-specialist alike.

H. R. DOWSON

SKORNJAKOV, L. A., *Elements of Lattice Theory* [Translated from original Russian edition (*Elementi Teorii Struktur*) by V. Kumar.] (Adam Hilger Ltd., Bristol 1978), vii + 148 pp., cloth, £15·00.

This compact introduction to Lattice Theory deals with the following topics (each is a chapter heading): partially ordered sets; ordinal numbers; complete lattices; lattices; free lattices; modular lattices; distributive lattices; boolean algebras. The author assumes only that his reader has a grasp of the fundamentals of elementary set theory. On the whole, this slim text is well-written, though there are places where the reader has to do some work to solidify the arguments, especially where translational difficulties arise. For example, the enunciation of Theorem 4 (p. 120) is quite wrong (and obviously so in view of the preceding result); and in Theorem 17 (p. 109) we have an expression $a = b_1 \dot{+} p_1 \dot{+} \dots \dot{+} p_m$ followed by the statement that "$m = 0$ is possible". These minor difficulties apart, this is an interesting text and covers a lot of basic material. The section on ordinal numbers covers the equivalence of the axiom of choice and those of Zorn, Zermelo, Hausdorff; and also the Cantor-Bernstein theorem. Complete lattices and closure mappings are dealt with (unusually) before lattices. In the section on lattices the author considers congruences and proves Dilworth's theorem (that any two congruences on a relatively complemented lattice commute) and relates congruence kernels to the standard ideals of Grätzer and Schmidt. There then follows a rather difficult chapter on free lattices. The rest of the text is less of an ordeal and deals, in a nicely compact way, with standard results in modular, distributive and boolean lattices. In particular, these include the Kurosh-Ore theorem (on irredundant $\wedge$-representations in modular lattices), Hashimoto's theorem (that a lattice is distributive if and only if every ideal is a congruence kernel) and the Glivenko-Stone theorem