ied. It is well known that in the simplest case of Nevanlinna theory of meromorphic functions in the plane the choice of the exhaustion is decisive in such questions but there the limits are taken with respect to a particular linearly ordered exhaustion.

JAMES A. JENKINS

A Hilbert space problem book by Paul R. Halmos. The University Series in Higher Mathematics, Van Nostrand, Princeton, N. J., 1967. xvii+365 pp. $11.50.

This book consists of 199 problems with hints and solutions, comprising 20 chapters. The chapter headings are: Vectors and spaces, Weak topology, Analytic functions, Infinite matrices, Boundedness and invertibility, Multiplication operators, Operator matrices, Properties of spectra, Examples of spectra, Spectral radius, Norm topology, Strong and weak topologies, Partial isometries, Unilateral shift, Compact operators, Subnormal operators, Numerical range, Unitary dilations, Commutators of operators, Toeplitz operators.

The book is well suited for graduate students who have already had a course in Hilbert space theory. One is expected to know the spectral theorem and Fuglede's Theorem for instance, and there is a short discussion of both, but no proofs. The problems include the very simple as well as the contents of recent papers. The hints range from the pithy exhortation "Polarize" to a paragraph of detailed instructions. Accompanying the solutions are references to the literature which will easily enable one to follow up a topic of interest. (These references are by no means complete, and in several cases the author has been forced by demands of space to omit not only sharper and more technical theorems, but even the mention thereof.)

The book succeeds admirably in two respects. First, it presents a diverse collection of tools, techniques, and tricks which should prove valuable to the Hilbert space apprentice. Second, there is a reasonable survey of operator theory in the space allotted. Included, with proofs, are

(i) a characterization of the invariant subspaces of the unilateral shift,

(ii) the coisometric extension of a contraction T, where T^n converges strongly to 0,

(iii) the unitary dilation of a contraction,

(iv) von Neumann's Theorem that the unit disc is a spectral set for any contraction, and

(v) the F. and M. Riesz Theorem.