In Chapter IX, real Hilbert space is defined axiomatically, and after some discussion of subspaces and of bilinear functionals, the concept of a self-adjoint operator is introduced. The representation of a completely continuous self-adjoint operator in terms of its eigenvalues and eigenvectors is established, and, finally, the usefulness of this is illustrated by a brief consideration of integral equations with symmetric L_2 kernels.

It seems odd that there is no mention of complex Hilbert space (even though there is a reference, at the end of Chapter VIII, to quantum theory); but as with Volume 1, it is surprising to find so much material in so few pages, without undue compression. The authors have again achieved a nice blend of the abstract and the concrete. The Graylock translation benefits from the inclusion of a number of exercises, prepared by H. Kamel, which are distributed through the book and usefully amplify the text. An appendix, translated from the Russian edition of this volume, corrects some minor errors in Volume 1.

Here, in the Graylock translation, is a very good book: an excellent companion to the first volume, and also to Kolmogorov's well-known little book on probability (of which an up-to-date English edition would now be welcome).

J. D. WESTON

AHLFORS, L. V., AND OTHERS, *Analytic Functions* (Princeton University Press, 1960), vii+197 pp., 40s.

This book contains the principal addresses delivered at a Conference on Analytic Functions held at the Institute for Advanced Study, Princeton, in September, 1957. As one would expect, the papers are of a specialised character and they are as follows: *On differentiable mappings* by R. Nevanlinna; *Analysis in non-compact complex spaces* by H. Behnke and H. Grauert; *The complex analytic structure of the space of closed Riemann surfaces* by L. V. Ahlfors; *Some remarks on perturbation of structure* by D. C. Spencer; *Quasiconformal mappings and Teichmüller's theorem* by L. Bers; *On compact analytic surfaces* by K. Kodaira; *The conformal mapping of Riemann surfaces* by M. Heins and *On certain coefficients of univalent functions* by J. A. Jenkins.

The value placed by the reader on any particular article will naturally depend on his knowledge and predilections but, in the opinion of the reviewer, the book is well worth possessing if only for the article by Behnke and Grauert. This, when taken in conjunction with a lecture given by Behnke at the Amsterdam congress (*Funktionentheorie auf Komplexer Mannigfaltigkeiten*, Proceedings of the International Congress of Mathematicians 1954 (Amsterdam), 3 pp. 45-57) provides an excellent survey of the work done on complex manifolds by H. Cartan, Serre, Stein and Ahlfors since 1950. The value of this paper is enhanced, too, by four pages of references at the end.

The printing and layout of the book are first class.

D. MARTIN

AHLFORS, L. V., AND SARIO, L., *Riemann Surfaces* (Princeton University Press, 1960), xi+382 pp., 80s.

With the appearance of this book a comprehensive and modern treatment of the subject in English has become available for the first time. The first chapter gives a thorough and extensive treatment of the topology of surfaces. Particular attention is paid to bordered surfaces, open polyhedra (triangulated surfaces) and to compactification. The terminology is in a few instances non-standard. Thus an unlimited covering surface is called regular and a regular covering surface is called normal; the latter change of usage certainly seems preferable. Riemann surfaces appear first in the second chapter. The problem of constructing harmonic functions with given singularities on an open Riemann surface is solved in the third chapter by means of Sario's

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