free from obvious misprints. It should prove valuable to all workers in the field.

A. Sharma, University of Alberta

A second course in complex analysis, by William A. Veech. W.A. Benjamin, Inc. 1967. ix + 246 pages. U.S. $8.75.

This is, as the title indicates, a text designed for students who have had at least a semester of elementary complex function theory; in addition, the author presupposes in the reader a fair knowledge of point set topology. The book begins with a treatment of the logarithmic function and analytic continuation is studied in some detail. Chapter two deals with geometric principles, including linear fractional transformations, Schwarz's Lemma and symmetry. Chapter three concerns conformal mapping, presenting among other things, the Riemann Mapping Theorem without using normal families and the theorem of Fejér on radial limits of analytic functions on the unit disc. In Chapter four a brief treatment of the modular function leads to the Lindelöf approach to the Picard Theorems; Koebe's Distortion Theorem and the existence of Bloch's constant also result. The last two chapters are largely independent of the foregoing ones, the one dealing with representation of entire functions as products and the final one with the Wiener-Ikehara proof of the Prime Number Theorem.

The emphasis during the first four chapters is topological, leaning heavily on the notions of covering map and covering space. As a result there is little hard-core analysis except in the last two chapters. The treatment is always thoughtful and thorough; occasionally one feels that there is too much painstaking detail. In general, however, this is the book's only limitation aside from the restricted choice of subject matter, which is, of course, unavoidable in a text of this nature.

W.J. Harvey, Columbia University

Theory of functions of a complex variable, Vol. III, by A.I. Markushevich. Translated from the Russian by R.A. Silverman. Prentice-Hall, London, 1967. xi + 360 pages. 5.4 s.

This is the final volume of a series of books by Professor Markushevich based on courses given at Moscow University. The first two volumes provide a careful grounding in the elementary theory of analytic and meromorphic functions in the plane; the present one extends into the orthodox advanced fields of complex analysis.

The approach is thorough and modern. The Riemann Mapping Theorem for plane domains is proved using Koebe's method. A study of prime ends introduces the section on boundary behavior of conformal mappings of Jordan domains, which leads into the theory of approximation by the methods of Runge and others. Elliptic functions are treated in some detail with both the Weierstrass and the Jacobi approach included. An abstract definition of Riemann surface is then given, and the concept of interior mapping is used to introduce the concrete Riemann surfaces of meromorphic functions from Stöilow's topological viewpoint. An examination of analytic continuation facilitates the construction of the Riemann surface of an algebraic function, done here in rare detail. Finally, the Schwartz reflection principle is used to construct the modular function, thus leading to the two Picard Theorems.

The style of writing is easy to read, and the printing and presentation of the material are excellent. A major feature of the book is the wealth of good problems illustrating and expanding the subject matter. Two possible criticisms appear, however. The frequency with which the author quotes results from the previous volumes without giving details makes it a practical necessity to possess them too. Finally, a large number of footnotes permeate the book, causing irritating breaks in the continuity sometimes. The points made are often of great relevance and should, one feels, be incorporated into the main text. All in all, these are minor points hardly marring a book which is definitely to be recommended.

W. J. Harvey, Columbia University

Les fonctions de plusieurs variables complexes et leur application à la théorie quantique des champs, by V.S. Vladimirov. Translated from Russian by N. Lagowski. Dunod, Paris, 1967. xvii + 356 pages. 88 F.

This book should meet the long-felt need for a comprehensive text on the theory of several complex variables intended for the applied mathematician and the theoretical physicist interested in quantum theory. Material of this kind could be found until now only in lecture-notes form, e.g., A.S. Wightman, Analytic Functions of Several Complex Variables (in Relations de dispersion et particules élementaires, edited by C. de Witt and R. Omnes, Hermann, Paris).

The book by V.S. Vladimirov has many of the desirable features, common to Russian texts: it is well-organized, quite self-contained without being bulky, and written in a lucid manner, intended to attract rather than discourage the non-expert in the field. Its informal style, in which definitions, theorems and proofs of the theorems are an integral part of the text rather than separated under appropriate headings, is probably a good compromise for a text which is intended for the mathematician as well as the scientist.

The exposition starts with a survey of the basic concepts and results of the theory of integration, theory of distributions and the theory of analytic functions in several complex variables. In the following three chapters the author deals with the theory of subharmonic functions, pseudo-convex domains, holomorphy domains and envelopes, and various integral representations of analytic functions. The last chapter, which constitutes one-third of the book, deals with applications of the introduced mathematics to quantum field theory and dispersion relations in physics. Distributions are treated as limits of analytic functions. The frequently quoted "edge-of-the-wedge" Theorem and the Jost-Lehmann-Dyson integral representation are given special attention. The mathematically rigorous treatment of these subjects will be very welcome by quantum theoreticians who desire a good understanding of their subject.

E. Prugovecki, University of Toronto

Introduction à l'étude topologique des singularités de Landau, by F. Pham. Paris, Gauthier-Villars Editeur, 1967. 142 pages. 30 F.

The aim of this book is twofold: 1) to show how a certain problem occurring in Elementary Particle Physics can be put into a more general mathematical framework; 2) to introduce the reader to the necessary theory. The problem referred to is to study the singularities of analytic functions of several complex variables defined by integrals of certain differential forms. The forms are supposed to have singularities of polar type and are possibly "ramified" as are therefore the integrals of these forms. The study of these problems seems to have been started in Elementary Particle Physics by the well-known physicist L.D. Landau in 1959.