As in Part I Professor Titchmarsh uses the methods of classical analysis, constructing $\Phi(x, \lambda ;f)$ such that $\Delta\Phi +$ $(\lambda - q)\Phi = f$ and integrating Φ around a large contour in the λ- plane to obtain the expansion theorem. This is first done for a rectangular region and then the limit is taken as the rectangle expands to the whole plane. There is a chapter discussing the variation of the eigenvalues as q or the region changes, and these results are used to solve the problem of a bounded region with a boundary satisfying a piecewise Lipschitz condition. Chapters on separable equations, convergence and summability theorems, perturbation theory (2 chapters, one for the case where the perturbed problem has continuous spectrum), and the case where q is periodic complete the body of the book. There is a final chapter on miscellaneous theorems of analysis which are used.

The exposition is clear and precise, and the reader is left with the feeling of having completed a very careful and thorough study of the subject. However much I would like to have seen such a book include more of the linear operator approach to the subject this would have been impossible without lengthening the book considerably. While the latter methods do enable one to obtain expansion theorems for more general equations they do not seem to yield the detailed results of the later chapters. Also, one might hope that the methods used here may generalize to certain non-self-adjoint problems, as they do for ordinary differential equations.

Thus I feel that this book should serve as a very valuable reference work for those interested in the field. It should also be valuable to mathematical physicists as the discussion centres on the equations which seem to arise most frequently in that field.

R. R. D. Kemp, Queen's University

Functions of Real Variables and Functions of a Complex Variable, by W.F. Osgood. Chelsea Publishing Company, New York, xii + 407 and viii + 262 pages. Bound in one volume. $4.95.

This is a reprint of two books which Osgood has published in China (University Press, National University of Peking, 1936). The first, "Functions of Real Variables", gives an introduction into higher analysis on a moderately rigorous but acceptable basis, for a reader of a not clearly defined status who, however, must have had some experience in calculus. After introductory chapters on Convergence, the Number System, and Point Sets, there follow the basic notions of calculus, uniform convergence, elementary functions, the algebra of infinite series, Fourier series, integrals with parameters, line integrals, Green's theorem, Gamma function, Fourier's integral, differential equations. The style is rather conversational in places, to say the least (e.g. 242-3) and sometimes too short (cf. the use of the word "infinitesimal" on p. 301 after its definition in a short clause on p. 76). But in return a number of conventional errors and misunderstandings of "older books" are pointed out. Some of the peculiar features in the book are explained by the author himself in the preface (p.iv):"... that the only way in which the student can hope to attain mastery of the subject, is to write his own book. He should take each theorem by itself, state it in his own language, and prove it as the author ought to have proved it for that student's need. The clearer the presentation in a text-book is, the worse for the student who would rely on reading." It is clear that only a master like Osgood could produce a useful book based on this principle. For details inproofs and otherwise, reference is often made to the author's well known books on Calculus and on Advanced Calculus, as well as to the Real Analysis part of his classic "Funktionentheorie" Vol.I; for some generalization concerning several variables he even refers to "Funktionentheorie" Vol.II, 1. "Functions of a Complex Variable" is essentially a reproduction in English of the central part of the Author's "Funktionentheorie I", to which he frequently refers for details. There is an introduction of the complex numbers and an exposition of the main theorems of the Cauchy-Riemann-Weierstrass theory. The book ends with a proof of the Riemann mapping theorem for a closed region bounded by analytic arcs, not tangent to each other, based on the construction of Green's function (prepared in the preceding chapter on the logarithmic potential) followed by sketchy notes on special cases of conformal mapping (polygon mapping etc.). In view of the great variety of good introductions to real as well as complex analysis which are available now the reviewer feels that the main reason for the new edition of these books was to make the essence of Osgood's German classic "Funktionentheorie I" available to the English reader.

H. Schwerdtfeger, McGill University

Introduction à l'algèbre supérieur et au calcul numérique algébrique, by L. Derwidué. Masson et Cie. Editeurs, Paris 1957. 432 pages. Price bound 6,600 fr.

In his preface the author states that algebra is the branch of mathematics most frequently used not only in the development of many parts of pure mathematics, but also in the sciences and in engineering. His aim was to write a book in which all sections of algebra, most likely to occur in this way, are taken care of from the theoretical as well as from the practical point of view. In fact none of the existing books on numerical methods