SMITH, M. G., *Laplace Transform Theory*. New University Mathematics Series (Van Nostrand, 1966), 116 pp., 35s. (cloth bound), 18s. (paperback).

This book contains a short rigorous account of Laplace transform theory and some of its applications. It is written in a lucid manner and should be easily accessible to undergraduate mathematics and science students who have had elementary courses in complex analysis and differential equations. There are ample exercises included to test the student's mastery of the subject matter.

The Laplace transform is treated as a special case of a complex Fourier transform. Both the uniqueness and inversion theorems are deduced from the Fourier integral theorem, the proof of which is included in an appendix. There are four chapters discussing the application of Laplace transforms to ordinary linear differential equations, partial differential equations, linear integral equations, and difference equations. The final chapter discusses briefly the asymptotic relations existing between a function and its Laplace transform. M. LOWENGRUB

POGORZELSKI, W., *Integral Equations and their Applications*, Volume I, translated from the Polish by J. J. Schorr-Con, A. Kacner and Z. Olesiak (Pergamon Press, 1966), xiii+714 pp., 120s.

This book is the first volume of a translation made from the original Polish edition published between 1953 and 1960. Part I is an account of the classical theory of Fredholm and Volterra equations. Most of the material is standard and is available in several other texts. The author's treatment is however detailed and full, and can be recommended for an undergraduate course on integral equations. Part II deals with systems of linear integral equations, non-linear integral equations and the applications of integral equations in the theory of elliptic, hyperbolic and parabolic partial differential equations. A short appendix on Schauder's Fixed Point Theorem by R. Sikorski is included. This part deals with much less readily accessible material than the other parts. Part III deals with singular integral equations and contains chapters on the properties of Cauchy type integrals, the Hilbert and Riemann boundary value problems, linear singular integral equations together with some applications, non-linear singular integral equations for contours and discontinuous boundary value problems in the theory of analytic functions. Much of the material is however available elsewhere notably in the books by Muskhelishvili and Gakhov.

The book is a useful addition to the literature on integral equations in that it gives in one volume a comprehensive account of linear and non-linear integral equations including singular ones and their applications. W. D. COLLINS

TUTTE, W. T., *Connectivity in Graphs* (Toronto University Press; London: Oxford University Press), 145 pp., 42s.

The author's preface states: " Graph theory is now too extensive a subject for adequate presentation in a book of this size. Faced with the alternatives of writing a shallow survey of the greater part of graph theory or of giving a reasonably deep account of a small part, I have chosen the latter. I have written indeed as though the present book were to be the first section of a three-volume work."

The only prerequisites for understanding this book are a knowledge of elementary set theory and possibly a certain minimum of mathematical maturity. Only finite undirected graphs are considered. Self-contained treatises on graph theory usually need a fair amount of introductory material to describe the basic concepts required: this is done mainly in Chapters 1-4 and 6. Chapter 5 deals with Euler paths. Chapter 7 discusses the automorphism group of a graph, and in particular certain matters concerning graphs which " look the same from every vertex ", i.e. in which any vertex can be mapped into any other by an automorphism of the graph. Chapter 8