Lectures on the theory of functions. By J. E. Littlewood. Oxford University Press, 1944. 8+244 pp. 17s 6d.

This book is neither a systematic treatise on the theory of functions nor a monograph on some definite branch of this theory, but rather it considers such parts of the theory of functions as are near to the center of the sphere of interest of the author. The book has a strong and unmistakable personal character and can give not only to those who know the author personally but also to those who read between the lines an impression of his power and penetration. Mathematical arguments are selected and arranged with exceptional regard for methodological points, an approach which is extremely instructive and valuable.

The book is divided into three parts: an extensive "Introduction" which occupies more than one-third of the book, Chapter I and Chapter II. According to the author's original plan, further chapters were to be incorporated in a second volume which has not yet been published. The various matters collected for reference in the Introduction provide a mathematical background for the understanding of the book, but much of the preparation is actually intended for the unpublished second volume.

The Introduction contains a systematic treatment of the inequalities of Hölder and Minkowski. A section on the theory of functions of a real variable provides the background needed in that field of the theory of functions of a complex variable which concerns "boundary values." Another section is devoted to the general theory of harmonic functions, and a section at the end sets out the behavior of certain special functions whose role is to provide counter examples.

Chapter I is composed of selected topics from classical theory of functions of a complex variable, and ends with a discussion of the theory of conformal mapping.

Chapter II is centered around the following general problem. Suppose that some restriction is placed on the set of values taken by a function $f(z)$ which is regular in the unit circle $|z|<1$. What is the influence of this restriction on the behavior of the function? In particular, how does it restrict the modulus of the function and its coefficients? For example, the point $w=f(z)$ may be restricted to move, for varying z, on some given Riemann surface (subordination). The chapter begins with a section on subharmonic functions (a topic not prima facie related to the main problem), and proceeds to a discussion of the principle of subordination (Lindelöf principle). Applications of this principle are made to functions subordinate to the elliptic modular functions, and also to functions subordinate to schlicht functions.