§8.7 (which is defined to be the Abel limit) extremely disturbing, especially in the light of the well known fact that Abel and Cesaro summability coincide for bounded sequences.

R. CREIGHTON BUCK

Randwertprobleme und andere Anwendungsgebiete der höheren Analysis für Physiker, Mathematiker und Ingenieure. By F. Schwank. Leipzig, Teubner, 1951. 6+406 pp. $5.47.

The book is a compendium of those portions of mathematical analysis beyond advanced calculus which are of great interest to engineers and physicists. It is an excellent book for physicists and engineers in that it provides a lucid introduction to a good selection of mathematical techniques and theories, with references for further reading, examples, practical applications, and an almost encyclopedic bibliography of applications. From the point of view of the mathematical reader the principal merit of Schwank's book is the wide range and amazingly large number of practical applications described or quoted in the various chapters.

In a preface, G. Hamel explains that Schwank's book is neither a textbook, nor a work of reference. Although the presentation is consequential and covers the ground thoroughly, the book is not as systematic as a textbook, and not as complete as a book of reference. It is written for the physicist or engineer with only a modest mathematical knowledge, and a desire to learn more about some of the more advanced mathematical techniques. The author aims at precision wherever it can be attained. In view of the readers for whom the book was written, it is quite clear that precision and rigour could not be maintained throughout the book, and examples and descriptions are called in when general formulations and proofs would seem out of place.

The material is organized in six chapters and a mathematical appendix.

Chapter I is an introduction to boundary value problems. The vibrations of a string are discussed in detail, and boundary conditions, normal modes of vibration, characteristic values, characteristic functions, orthogonality, Fourier expansion, and other relevant notions are introduced. D'Alembert's solution of the one-dimensional wave equation is also given. The last two sections of this chapter are devoted to the re-formulation of the problem of the vibrating string in terms of integral equations and calculus of variations respectively.

Chapter II is devoted to complex variables. It starts from the