

quate for beginners. In Chapter III, integration is used on the basis of the student's knowledge of the calculus.

It thus appears that, although we have in recent years acquired excellent treatises on higher complex function theory, one must still refer students to the works of Osgood and of Tannery for thorough presentations of the elements of the subject.

Our comments on the earlier chapters of Professor Dienes' book are not to be interpreted as adverse criticism. We have sought merely to indicate what we consider the advantages of this treatise, which is the work of a distinguished authority and which will hold an important place in every mathematical library.

J. F. RITT

*Exercices de Calcul Différentiel et Intégral.* By E. Lainé. Paris, Vuibert, 1931. 143 pp.

This book contains the solutions of most of the problems given in the written examinations at Paris for candidates "du certificat de Calcul différentiel et intégral" from 1920 to 1930, inclusive. The examinations were held twice each year in June or July and in October and are presented here in chronological order. The solutions are quite complete in themselves and, for the benefit of the students, references for formulas and theory are made to the author's two volume text entitled *Précis d'Analyse Mathématique*.

The ground covered by the examinations and the relative emphasis on each field is indicated by the following distribution. Frequently a problem involves more than one field so that the total number of references is almost double the number of problems. I. Theory of functions of real variables, 25 problems. II. Theory of analytic functions, 9 problems. III. Ordinary differential equations, 19 problems. IV. Differential geometry, 22 problems. V. Partial differential equations, 30 problems.

Each of the sixty-one problems is a very substantial exercise, frequently involving several parts to the question. Professors in American universities will find in this collection some excellent material for use in connection with graduate courses in the fields mentioned above.

W. R. LONGLEY

*Exposé Électronique des Lois de l'Électricité.* By Marcel Boll. Paris, Hermann, 1932. 72 pp.

The idea of this little book is to give an exposition of the elementary facts of electromagnetism based on the electronic theory. Mathematically there is very little difference between such an account and the older Maxwellian theory with its electric densities, displacement currents, etc., the changes being largely in the symbolism and the physical interpretation. The book is evidently intended mainly for engineers and the mathematics involved is of an elementary character. Thus the equations of Maxwell-Lorentz are not given. There is an interesting chapter of some ten pages devoted to the conduction of electricity through metals.

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