

coverage of the classical theory of Riemann surfaces, the last chapter turns to the subject of open Riemann surfaces. Since this is an extremely active subject at the present time, it is impossible to give any sort of definitive survey. However Nevanlinna does manage to introduce the reader to the principal problems in the field and to give an idea of some of the methods available.

This book arose out of the author's lectures at the University of Helsinki and is admirably suited for anyone who wishes to learn about Riemann surfaces. The author always has the present work in open Riemann surfaces in mind, so that the reader will find that he is prepared for the literature in this field.

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*Lezioni sulle equazioni a derivate parziali.* By F. G. Tricomi. Editrice Gheroni Torino, 1954. 4+484 pp.

This book furnishes an excellent introduction to the rapidly expanding theory of partial differential equations, written in the author's usual lucid and interesting style.

The work is divided into five parts. The first part, consisting of one hundred and four pages, presents a rapid but thorough summary of classical analytic tools required in the remainder of the book. The theory of integral equations, the gamma function, the hypergeometric function, the Legendre and Bessel functions are all treated. This part is well worth reading on its own.

The second part, consisting of seventy-five pages, is devoted to a discussion of the theory of characteristics for equations of the first and second order. It includes a section devoted to the Hamilton-Jacobi theory and its connection with the calculus of variations.

The third part, one hundred pages, is devoted to equations of hyperbolic type. Various classical approaches, such as those of Laplace and Riemann, are presented, and there is large section on the movement of a compressible fluid.

The fourth part, ninety-five pages, treats the equations of elliptic type. The classical techniques are given, together with a discussion of more modern methods based upon difference equations, and numerical methods such as the "relaxation" method of Southwell. A section on incompressible fluids is included.

The fifth and concluding part is devoted to equations of parabolic type and equations of mixed type. The greater part of this section is concerned with equations of mixed type, a topic investigated in great detail by Tricomi in 1923, and which in recent years has become of