57[V].—CAIUS JACOB, *Introduction Mathématique à la Méchanique des Fluides*, Gauthier-Villars, Paris, 1959, 1286 p., 23 cm. Price Lei 66,50.

This work is a translation of a book originally published in Romanian in 1952.

For the present French edition, the author has added additional material and references to bring it up to date. The book is very large and covers many topics quite extensively. Some idea of this may be gained from looking at a listing of the Table of Contents:

PART 1—On Some Boundary Problems.
> Chapter I—Two-dimensional problems of Dirichlet and Neumann for the circle and for the annulus.
> Chapter II—Properties of harmonic functions of two variables. Green's functions and conformal representation in simply connected domains.
> Chapter III—Solution of the Dirichlet and Neumann problems by the theory of integral equations.

PART 2—Equations of Motion.
> Chapter IV—Generalities on perfect fluids. Equations of motion. Viscous fluids.
> Chapter V—Calculation of hydrodynamic resistance.
> Chapter VI—Determination of velocity as a function of vorticity.
> Chapter VII—Plane flow of incompressible fluids.

PART 3—Theories of Hydrodynamic Resistance for Incompressible Fluids.
> Chapter VIII—Helmholtz theory of wakes.
> Chapter IX—On some extensions of the Helmholtz problem.
> Chapter X—The airfoil of infinite span.
> Chapter XI—The airfoil of finite span.

PART 4—Compressible Fluids.
> Chapter XII—On the propagation of sound and discontinuities in an ideal fluid.
> Chapter XIII—Generalities on partial differential equations of second order.
> Chapter XIV—Continuous flow of compressible fluids.
> Chapter XV—Applications to the hodograph method of S. A. Chaplygin.
> Chapter XVI—Supersonic flow.

PART 5—Methods of Approximation in the Dynamics of Compressible Fluids.
> Chapter XVII—Approximate methods for subsonic flow.
> Chapter XVIII—Approximate methods for supersonic flow.
> Chapter XIX—Approximate methods for transonic flow.

The main emphasis of the book is on mathematical methods. The author states that he has chosen the topics for the book on the basis of their mathematical interest and importance and no attempt has been made at complete coverage of the field of fluid mechanics. The coverage of classical fluid dynamics of perfect fluids is quite extensive and reasonably complete. Viscous fluids are less thoroughly covered, and there is no discussion of such important problems as boundary-layer theory. The book should serve as an excellent reference volume, since there are extensive references to the literature as well as a clearly written and understandable text.

The principal criticism of this book is that there is no index either of authors cited or of subject matter covered. The table of contents, although extensive does not fulfill this need. Nevertheless, this book should prove to be a very valuable reference work.

RICHARD C. ROBERTS

U. S. Naval Ordnance Laboratory
White Oak, Silver Spring, Maryland