

*Cours de Mécanique Rationnelle.* By J. Chazy. Volume II. *Dynamique des Systèmes Matériels.* Paris, Gauthier-Villars, 1933. 6+461 pp.

The first volume of this treatise considers the dynamics of a particle and was reviewed in this Bulletin, volume 39, page 491.

Following an introductory chapter about general theorems on the motion of a system of particles, the second volume treats the following topics: the law of universal gravitation, motion of a solid body about a fixed axis and about a fixed point, the principle of virtual work and the principle of d'Alembert, the equations of Lagrange, the theorem of Dirichlet and the small motion of a material system in the neighborhood of a position of equilibrium, the theory of impulse and collisions, the equilibrium of a cord, a brief introduction to hydrostatics and hydro-dynamics, and the theory of newtonian attraction and potential.

In this treatise Professor Chazy has added another to the rather long list of lucid expositions by French authors of the fundamentals of classical mechanics.

W. R. LONGLEY

*Das Problem der Gleichzeitigkeit.* By K. Vogtherr. München, Ernst Reinhardt, 1933. 193 pp.

This book examines in a painstaking manner the fundamental concepts of space, time, simultaneity, etc., and arrives at conclusions directly contrary to the views of Einstein and the supporters of the theory of relativity. There are not many mathematical symbols in the book and it will doubtless be more read by students of philosophy than by mathematicians. An idea (we hope not unfair) of the author's style of argument may be conveyed by the following excerpt (p. 26) from a paragraph devoted to the discussion of the foundations of geometry: "es ist schlechterdings unvorstellbar, wie eine stets in derselben identischen Richtung fortlaufende Linie zu ihrem Ausgangspunkt soll zurückkehren können." He follows this with the statement that the concept of spherical or elliptic space is as impossible as that of a number greater than any other. His "proof" of the parallel postulate of Euclid contains a naive "so ist klar"; it involves the assumption that directions at remote points may be compared, which ignores the whole idea of space curvature.

It will be gathered from the preceding remarks that the reviewer was not able to read this work with any feeling of conviction. It would be incorrect, however, to infer that he thinks the book worthless and to be classed with the swarm of polemics "against relativity" which appeared some ten or more years ago and which are now forgotten. Although the mathematical questions concerned with relativity theory are now pretty well understood and in the textbook stage, their "physical realization" appears to many as through a glass darkly. The reading of a book such as the one under review is very thought provoking; just because one either cannot follow, or can even see the fallacy in, an argument, is no reason for ignoring it. It is a trite observation in mathematics and physics that many of the great advances have followed from incorrect speculations and theories.

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