Pythagoras and the school founded by him. Following this is an illuminating account of the cosmology of Plato (pages 28–101) and certain developments of it among his followers (pages 102–129).

The most interesting part of the book is that (pages 130–241) in which the "physics" of Aristotle is treated.

The remaining four (of the eight) chapters deal in order with the following topics: the theories of time, space, and the void after Aristotle (pages 242–350); the dynamics of the Greeks after Aristotle (pages 351–398); the heliocentric astronomies (pages 399–426); the astronomy of excentrics and epicycles (pages 427–496).

Throughout the book the work of the author seems to have been done with care. The exposition is good. The matter brought together is of the highest interest to every student of the history of science. There is, however, but little of it which makes a special appeal to the mathematician as such; and that little consists of such beginnings of mathematical sciences as Aristotle's argument (see pages 213–214) to prove the sphericity of the surface of still water, this being the first instance (according to our author) in which mathematical reasoning has been used to establish a law of equilibrium for heavy liquids.

R. D. CARMICHAEL.

Cours de Mécanique. Vol. I. By LÉON LECORNU. Paris, Gauthier-Villars, 1914. vii+536 pp.

IN preparing the course in mechanics given at l'Ecole Polytechnique Professor Lecornu has apparently met difficulties similar to those encountered by the teachers in the technical schools of America. In the first place the time alloted to the subject is only 37 lessons for each of two years. This has made it necessary to put a portion of the kinematics of a point into the entrance requirements, and to transfer kinematics of machines to the course in geometry and the theory of the potential to the course in analysis. All of these topics are, however, discussed at length in the present volume.

In the second place the author has had to resist a demand for the teaching of practical applications with the necessary omission of much of the pure theory. He is firm in his belief that the course in l'Ecole Polytechnique should be purely theoretical. His position is stated in the preface and, among

some quotations in support of it, the following from General Langlois is particularly interesting. "The officers who leave the school at the end of one year are, in general, inferior to their comrades in the matter of studying logically and deeply a scientific question of tactics or organization. The method of work indispensable to every man of action demands imperiously the study of a science to its foundations, a study which makes the intellect supple and develops a habit of logical deduction necessary to one who commands."

The first part of this volume consists of a chapter on vectors and one on displacements of a rigid body. In the second part the subject of the kinematics of a point and a solid body is presented in the usual manner. The application of kinematics to the theory of machines is quite extensive. Following a classification attributed to Willis, elementary machines are arranged in three classes according as the ratio of transmission is (*a*) constant in magnitude and sign, (*b*) variable in magnitude but constant in sign, or (*c*) variable in both magnitude and sign. Each class is subdivided into three kinds according as the transmission is by (*a*) direct contact, (*b*) a rigid intermediary, or (*c*) a flexible intermediary. The author then gives many examples and develops the theory involved in each subdivision. Statics and dynamics of a point form the subject of the third part, which includes the general principles of mechanics, the theory of the newtonian potential, the motion of a free particle in constant and central fields of force, a short section on ballistics, and the motion of a particle on a curve and on a surface. The last part is devoted to the statics of systems of bodies.

Much of the material in the first volume is taught in courses other than the one for which this text has been prepared and is included here for review or reference. Announcement has been made that the second volume is in press and the third in preparation.

The book contains no problems for solution by the student.

W. R. LONGLEY.

Problèmes de Mécanique et Cours de Cinématique. By C. GUICHARD. Paris, A. Hermann et Fils, 1913. 156 pp.

THIS little book has been edited by MM. Dautry and Deschamps and published by l'Association générale des étudiants