

*The Logic of Modern Physics.* By P. W. Bridgman. New York, Macmillan, 1927. 14+228 pp.

The author begins by calling attention to the fact that the accepted classical concepts in physics were found inadequate to explain the experimental facts obtained in testing Einstein's deductions from his relativity theory. He points out the necessity of studying our concepts to prevent a similar failure in the future. By concept he means a set of operations. A lengthy study of the operations involved in measuring distances follows and the concept of an astronomical and an atomic distance is arrived at in terms not only of actual operations but also in terms of hypotheses involved. Following this mode of thought, concepts of space, time, identity, velocity, force, mass, energy, electricity, etc. are discussed in detail. In connection with light, the author concludes that "from the point of view of operations, it is meaningless or trivial to ascribe physical reality to light in intermediate space, and light as a thing travelling must be recognized to be a pure invention." It must follow that finite velocity of light does not exist and likewise Einstein's definition of simultaneity. This necessarily results from a conception that a reality can be only when a phenomenon exists. Difficulties arise which appear as great as those which phenomenalism tries to remove. Finally, the last chapter is devoted to a study of Special Views of Nature in which he is led to accept the postulate that physical laws are formally simple.

The book is an earnest attempt at formulation of concepts in physics based on operations with due regard for the hypotheses that may be involved. It should be found welcome to mathematicians and philosophers as well as experimental physicists.

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*Quellenhefte zur Elementarmathematik:* Band I, *Elementargeometrie*, Heft 1: *Der Stoff bis zur Untersekunda.* By Kuno Fladt. Leipzig and Berlin, B. G. Teubner, 1928. vi+73 pp.

This is a source book on the history of geometry in which are reproduced selections from such parts of historic sources as have retained their place in elementary instruction down to the present time. No obsolete material is included. The booklet is a companion to another publication by the same author, written as a geometric text for pupils about fourteen years of age, in the Untersekunda. After a brief historical introduction there are given, in the source book, extracts, in German translation and in modern symbols, of such authors as Euclid, Archimedes, Proclus, Heron and some more modern writers, all accompanied with suitable historic notes. An attractive feature among the illustrations is the part of Raphael's School of Athens which shows the geometrical and astronomical group, and also the reproduction of a recently described mosaic, said to have been taken from the ruins of Herculaneum, and showing the death of Archimedes. The booklet represents an effort to utilize in elementary instruction the interest attached to the history of mathematics.

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