

ELEMENTARY MATHEMATICS.

- (1) *Elementary Solid Geometry, including the Mensuration of the Simpler Solids.* By W. H. Jackson. Pp. xii+159. (London: Edward Arnold, 1907.) Price 2s. 6d.
- (2) *Euclid Simplified in Accordance with the New University Regulations, with Additional Propositions and Numerous Examples.* Fourth edition. By Saradaranjan Ray. Pp. xvi+271. (Calcutta: The City Book Society.) Price 1.8 rupees.
- (3) *A Preliminary Geometry.* By Noel S. Lydon. Pp. iv+108. (London: Methuen and Co., n.d.) Price 1s.
- (4) *Examples in Elementary Mechanics, Practical, Graphical, and Theoretical.* By W. J. Dobbs. Pp. xii+344. (London: Methuen and Co., n.d.) Price 5s.

(1) THE study of three-dimensional geometry is generally more or less neglected in our schools; this excellent text-book should materially help to correct this fault; its effect on the reader is to enhance his sense of the importance and attractive nature of the subject. In part i. the properties of the line and plane and of the simpler curved surfaces are demonstrated with Euclidean rigour, but with a delightful freshness which recent reforms have done so much to encourage. Moreover, the numerous and well-chosen exercises, and the admirable figures and diagrams, are quite a feature of the book. Part ii. deals with the mensuration of solids. It is as effective as before; in style and treatment and in the diagrams and exercises the same high standard is maintained. Prof. Horace Lamb has written an appreciative preface, and there is no book on this branch of mathematics more worthy of adoption in our schools and colleges.

(2) In this geometry, in order to preserve continuity and for convenience of reference, the sequence and indeed the numbering of Euclid's propositions are maintained, while the arrangement is designed to meet the requirements of the new syllabus of geometry for the matriculation examination of the Calcutta University, which will be found very similar to the schedules now prevailing in this country. In remodelling Euclid according to this scheme, propositions of minor importance are relegated to the exercises, and new propositions are added. The enunciations and proofs are revised and often rewritten. Many exercises are provided. The book will appeal to those who wish to follow the new methods with as little departure from the old as possible, and who are not prepared to accept the reform in its entirety.

(3) This useful little book gives a simple and orderly course of practical geometry for beginners, intended as a preliminary to a formal and deductive study of the subject. The pupil becomes acquainted with the terminology and with the properties of the simpler plane figures, and to some extent is trained to use his reasoning faculties. The author is very successful in carrying out his scheme.

(4) The distinction between theoretical and applied

mechanics is gradually losing its significance, and it is now generally recognised that the subject of mechanics cannot be satisfactorily taught without some amount of experimental and practical work done by the student himself. The present book is written from this point of view; the graduated series of examples, arranged in chapters, are experimental, numerical and graphical, and are accompanied by just sufficient explanation and discussion of principles as, with the guidance of a teacher, will enable the student to dispense with an ordinary text-book. The apparatus used, while effective for its purpose, is of the simplest character, and is for the most part made by the student himself. Statics is fully discussed before dynamics is taken up, a sequence which, we think, is the right one. The conception is good and well worked out, and the book will commend itself to many teachers.

TWO SPECULATIVE CONTRIBUTIONS TO GEOLOGY.

Die Entstehung der Kontinente, der Vulkane und Gebirge. By P. O. Köhler. Pp. vi+58; 2 figures. (Leipzig: W. Engelmann, 1908.) Price 1.60 marks.

Die geologischen Grundlagen der Abstammungslehre. By G. Steinmann. Pp. ix+284; 172 figures. (Leipzig: W. Engelmann, 1908.) Price 7 marks.

THESE two books have little in common except that they are both German speculative discussions of geological principles. Herr P. O. Köhler's pamphlet on the origin of continents, volcanoes, and mountains is a contribution to dynamical geology, in which he rejects some of the most generally accepted facts in geological morphology, and opposes especially some of the main conclusions of Prof. Suess. The author denies the existence of "Senkungsfelder," or foundered blocks of the earth's crust, and he declares that raised earth blocks—the Schollen of Suess—are statically impossible. Herr Köhler regards plutonic and volcanic intrusions as closely allied, and attaches great weight to the extent of plutonic activity; he describes the views of those whom he calls the "passive plutonists" as erroneous in all important respects, and he traces their errors to two chief fallacies—the secular cooling of the earth and its higher internal temperature.

Prof. Steinmann's book is a bold attempt to reclassify the animal and vegetable kingdoms. He advocates principles which, if not altogether new, have long been out of fashion and lead to startling and incredible results. Twenty years ago Prof. Steinmann was driven to study the bases of the current theory of phylogeny, as it would not fit the facts; and in this volume he gives a most interesting sketch of the history of the subject, followed by a statement of the principles and results obtained by his own long studies. Most palæontologists share Prof. Steinmann's faith in the importance of the historic evidence. The positive records of geology as to the succession of life on the world afford the ultimate test by which all theories of evolution must be judged. A sufficient volume of evidence may not be collected