

a set of 165 concrete problems of a grade which insures the arrival at definite results. The selection of the problems is based on the correct pedagogic principles that doing things promotes and sustains the students' interest, and that all work in mathematics should be consecutive.

That the text is written from the view-point of the instructor whose students are preparing for technical courses may readily be seen from the selection of the topics discussed. The following form a list representative of the contents of the ten chapters: Measurements, both direct and indirect, of lengths and areas; with special reference to the degree of accuracy possible in the computations based on the given data. Areas of rectilinear plane figures by the method of coordinates, with applications to problems in surveying. The prismoidal formula, with special reference to the computation of earthwork. Vectors, with applications to resultant forces and latitudes and departures in surveying. A chapter on the nature and applications of logarithms, which might have been strengthened by a more complete discussion of the slide rule and by the introduction of problems based on the system of natural logarithms. Approximations to the lengths of curved lines as problems in limits. Graphic algebra, including work in the solution of simultaneous equations and inequalities. Approximate areas, leading to the trapezoidal, Simpson's, and Weddle's formulas. Approximate volumes, with applications to the contents of vessels. A discussion of the results obtained by the use of the prismoidal formula when the volumes are those of revolution.

Throughout it is apparent that the author believes in the pedagogic value of accuracy, the proper arrangement of computations, and the intelligent interpretation of processes and results. It seems to the reviewer that, since the nature of the subjects considered holds the student continually responsible for concrete results, the answers to the problems should have been included in the text.

ERNEST W. PONZER.

*Anfangsgründe der darstellenden Geometrie für Gymnasien.*

Von FRITZ SCHÜTTE, Oberlehrer am Gymnasium zu Düren. Leipzig, Teubner, 1905. 42 pp.

SINCE instruction in descriptive and constructive geometry was introduced into the German gymnasia in 1901, a number

of elementary texts have appeared, designed to meet the needs of the new class of pupils in this subject. The present book begins with a detailed concrete explanation of the elements of descriptive geometry. All definitions are put in bold-faced type. Solid bodies are depicted on the ground, vertical, and profile planes, and various objects are drawn to show that all three elevations are generally necessary. The straight line, plane, prism, pyramid, and regular bodies are treated in succession, a number of unsolved exercises being appended to each case. Then follow the circle, cylinder, cone, and sphere. After these ideas are mastered, the pupil is prepared to take up parallel perspective, wherein the same figures are treated again, but rather more concisely. Finally, a few pages are devoted to central perspective; methods are given for constructing a perspective picture of an object when its ground plan and profile are given. The author explains in the preface that the arrangement of subject matter is new, that heretofore too much emphasis has been laid on perspective drawing. One is tempted to feel that he has possibly gone to the other extreme, but at any rate the intelligent reader has not been bored by a multitude of details, and will finish the book thirsty for more. The typographical work is excellent; the figures are crude, but easily understood. The usefulness of this little book should not be confined to the German gymnasias.

VIRGIL SNYDER.

*Petrus Peregrinus de Maricourt and his Epistola de Magnete.* By SILVANUS P. THOMPSON, D.Sc., F.R.S. From the *Proceedings of the British Academy*, Volume II. London, published for the British Academy by Henry Frowde, Oxford University Press. 32 pp.

FOR thirty years Professor S. Thompson has made a study of the early history of magnetism, whenever opportunity presented itself for the examination of original sources. A result of this study is this article on Petrus Peregrinus and his famous Epistle on magnetism that was "done in camp at the siege of Lucera, Anno Domini 1269, the eighth day of August." No student of the history of science in the time of Peter Peregrinus and Roger Bacon can afford to overlook this article of Professor Thompson. He gives a list of the twenty-eight different ancient manuscript copies of the Epistle, tells where each is found and compares them. Two of these are in his own posses-