

dates are generally stated as if they were known with certainty, as that Euclid was born in 330 B.C., and Fibonacci in 1175 A.D., while in reality many of these statements are very doubtful and are liable to be put to unfortunate use by the novice. Among the probable errors of statement are the assertion that Heron was a contemporary of Hipparchus, and that Jordanus Nemorarius was the Jordanus who was general of the Dominicans. Among the certain errors are the assertions that Alcuin was abbot of Canterbury, and that Omar Khayyám was of Arab rather than Persian stock; and among the typographical errors are the printing of Gunther for Günther (page 26), Muller for Müller (page 30), Harriott for the preferred form of Harriot (page 34), and Plucker for Plücker in the index (with a wrong reference). But in spite of these little blemishes the book will serve a good purpose, particularly among the students of the secondary schools of the French-speaking countries.

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*Solid Geometry.* By SOPHIA FOSTER RICHARDSON. Boston, Ginn and Company, 1914. iv + 209 pp.

As the author states in the preface, she gives in this book the "usual course in solid geometry more complete in logical structure than that of the text-books commonly used." Definitions and axioms are quite numerous and prominent and it is by carefully stating these that many difficulties are avoided. For instance there is no difficulty nor incompleteness in the proofs of the theorems about the intersection of a cylinder or cone with a plane through an element and another point of the surface because the theorems are explicitly limited to convex surfaces. We find here also the practice, too rare in American texts, of establishing the existence of a geometric object before defining it. Thus the theorem that a straight line perpendicular to each of two intersecting straight lines at their point of intersection is perpendicular to every straight line in their plane passing through their point of intersection, is given before the definition of a perpendicular to a plane. Similarly the theorem "Any tangent line to a convex cylindrical surface and the element through its point of contact determine a plane which contains no other point of the surface" leads to the definition of a tangent plane to a convex cylindrical surface. As in most texts, geometric locus is defined and the two parts of a locus problem are pointed out,