Other papers, by A. H. Taub, S. O. Rice, A. F. Stevenson, R. Truell E. G. Ramberg, M. Kac, N. Wiener, Y. W. Lee, H. Wallman, E. Feenberg, are short abstracts of articles published in different scientific reviews.

L. BRILLOUIN

The real projective plane. By H. S. M. Coxeter, New York, McGraw-Hill, 1949. 10+196 pp. $3.00.

This book is an admirable introduction to the subject for students who know a fair amount of ordinary plane geometry, including at least something about conics, but have no idea at all of projective geometry. It begins by the introduction of points and the line at infinity by means of the "vanishing line" or horizon of a central projection from one plane onto another, and goes on to illustrate the distinction between affine and projective geometry by proving Desargues' theorem by projection, from the properties of similar and similarly situated triangles. In the second chapter a set of five axioms of incidence (one of which is Desargues' theorem) is given, the principle of duality explained, and the quadrilateral and quadrangle and the harmonic relation studied in an elementary manner. The perspective relation between two lines is defined, likewise its dual (also called perspective). Chapter III introduces the idea of order, defined in terms of the separation relations of two pairs of points, and its properties deduced from six simple axioms, of which one states that order is invariant under perspective correspondence. The familiar separation properties of the harmonic relation are very simply deduced. Then as a temporary expedient Enriques' theorem to the effect that an ordered correspondence which relates an interval to an interior interval has a first invariant point in the interval is introduced as an axiom of continuity.

Chapter IV is on one-dimensional projectivities, defined as correspondences that preserve the harmonic relation. The fundamental theorem is proved from the axiom of continuity; Pappus' theorem and the axis of projectivity follow simply. Projectivities are classified into direct and opposite according to their effect on sense and into elliptic, parabolic, and hyperbolic, according to the number of their invariant points. Involutions are studied, and the involutory property of the quadrangular set proved.

Chapter V is a similar treatment of two-dimensional projectivities, both collineations and correlations, a collineation being defined as any point-to-point correspondence that preserves collinearity. It is shown from the fundamental theorem that there