lar foundation which enables us to publish a series of works of this nature at a nominal price, as is done in several European countries. No better field than this is today open in this country for establishing a relatively small foundation which should seek to satisfy a hunger for good reading. With the work of this British society in mind, one can readily excuse the lack of an index, and the poor paper which war conditions have imposed.

DAVID EUGENE SMITH.

The Theory of the Imaginary in Geometry together with the Trigonometry of the Imaginary. By J. L. S. HATTON, principal and professor of mathematics, East London College. Cambridge, England, University Press, 1920. 216 pp. and 96 figures.

THE word theory in the above title is to be understood in a very non-technical sense. Indeed, apart from the idea of the invariant elements of an elliptic involution on a straight line, no theory is found at all. The purpose of the book is rather to furnish a certain graphical representation of imaginaries under a number of conventions more or less well known. Three concepts run through the work: first, an incompletely defined idea of the nature of an imaginary; second, the analogy with the geometry of reals; third, the use of coordinate methods, assuming the algebra of imaginaries.

Given a real point O and a real constant k, an imaginary point P is defined by the equation $OP^2 = -k^2$. The two imaginary points P and P' are the double points of an involution having O for center, and ik for parameter. The algebra of imaginaries is now assumed, and a geometry of imaginary distances on a straight line is built upon it. The reader is repeatedly reminded that in themselves there is no difference between real and imaginary points; that differences exist solely in their relations to other points. In the extension to two dimensions both x and ix are plotted on a horizontal line, while y and iy are plotted on a vertical line. Imaginary lines are dotted, and points having one or both coordinates imaginary are enclosed by parentheses, but otherwise the same figures are used for proofs, either by the methods of elementary geometry, or by coordinate methods.

In the algebra of segments it is shown that an imaginary distance $O'D'$ can be expressed in the form iOD, wherein OD is a real segment, or at most by OD times some number. Now