quickly succeeded by the American Mathematical Society, whose publications made a privately supported journal less necessary. This consoled Professor Stone in giving up the publication of the Annals.

American students in mathematics owe Professor Stone a real debt of gratitude for his earnest effort in helping to create an interest in their subject.

<div align="right">J. J. Luck</div>

HILBERT'S INTUITIONAL GEOMETRY

Anschauliche Geometrie. By D. Hilbert and S. Cohn-Vossen. Berlin, Julius Springer, 1932. vii+310 pp.+330 figures. R.M. 25.80.

The foundation of this extremely interesting book is a course of lectures delivered by Hilbert at the University of Göttingen in the winter of 1920–21. The notes were taken by W. Rosemann and supplemented and edited by S. Cohn-Vossen.

In the preface Hilbert points out that in mathematics as in all other scientific research we meet two sorts of tendencies: one towards abstraction, the other towards intuition. The first seeks to work out the logical points of view from the extensive material and to connect it systematically; the second strives for an intuitional conception and an understanding of relations of content.

The first has led to the magnificent systematic theories embodied in algebraic geometry, Riemannian geometry, and topology. Nevertheless, Hilbert maintains the position that intuitional geometry is still of great importance as a superior force of research and for the appreciation of the results of research.

The reviewer may be permitted to illuminate this by a personal experience. It is well known that the sextic of genus four, as the intersection of two generically located cubic and quadric surfaces, admits of 120 tritangent-planes. Just as in the case of the 28 double tangents of a general plane quartic, which may all be real, the question arises whether all 120 tritangent-planes may be real. I know of no place where this question has been answered nor of any method by which this problem could be solved. But I constructed a model of this sextic which shows the possibility of 120 real tritangent-planes. This, of course, is no mathematical proof.

Thus, in this, as in many other instances of mathematical research, it is obvious that intuitional aid by the way of construction of graphs and models and intuitional interpretation is in many cases very desirable and helpful.

Throughout the book the reader is struck by the loftiness of the standpoint from which the problems are viewed. One would of course expect this from a superior mathematical mind like Hilbert's.

The first chapter deals with the simplest curves and surfaces, conics and quadrics with their most striking characteristic properties.

In the second chapter are considered regular point systems in the plane and in space. The study of lattice-works has in recent years become of great importance not only for the proper comprehension of crystallographic systems but also for certain branches of number theory as appears from the memorable investigations of Minkowski. This is shown by such examples as the Leibniz