# ORMOND STONE—1847–1933

Professor Ormond Stone, founder and first editor of the Annals of Mathematics, was instantly killed by an automobile on January 17, 1933, while he was walking along the road near his home not far from Fairfax, Virginia.

Professor Stone, who was eighty-six years old, was retired on the Carnegie Foundation in 1912, after serving twenty years as Professor of Astronomy and Director of the Leander McCormick Observatory at the University of Virginia. Before coming to the University of Virginia he had been an assistant at the U. S. Naval Observatory and afterwards Director of the Cincinnati Observatory. He observed the total eclipse of the sun in Iowa in 1869; was in charge of the Naval Observatory eclipse expedition to Colorado in 1878, and of the McCormick Observatory expedition to South Carolina in 1900. While he was at the Cincinnati Observatory he played an important part in bringing about the adoption of the standard time belts.

A number of Professor Stone's former students and assistants at the Leander McCormick Observatory now hold prominent executive and scientific positions in the United States. Among them are: Edgar O. Lovett, President of Rice Institute, Houston, Texas; Heber D. Curtis, Director of the University of Michigan Observatory; Charles P. Olivier, Director of the Flower Observatory, University of Pennsylvania; Herbert R. Morgan, U. S. Naval Observatory; Ralph E. Wilson, Dudley Observatory, Albany, N. Y.; G. F. Paddock, Lick Observatory; and T. McN. Simpson, Randolph-Macon College, Ashland, Va.

While at the University of Virginia Professor Stone was actively interested in the development of secondary education in the state, and was a member of the first Board of Visitors of the State Normal School at Harrisonburg.

Undoubtedly his major contribution to mathematics was the founding of the Annals of Mathematics. Soon after coming to the University of Virginia Professor Stone fulfilled a long-cherished desire to establish a journal of mathematics. He felt that the American Journal of Mathematics, newly founded at Johns Hopkins University by Sylvester, while admirably supplying a needed opportunity for publishing advanced work, did not furnish a vehicle for the publication of papers of intermediate difficulty and more popular character, and that there was a real need for such a publication. In 1884 he founded the Annals of Mathematics, supporting its publication financially from his private income for about twelve years. He succeeded in sustaining this journal in a creditable and dignified manner. He was assisted in the editorial work by a number of mathematical friends, among whom latterly was Professor Maxime Bôcher, of Harvard University. He was profoundly and unselfishly interested in his journal and it was with much distress that he was finally forced to withdraw his financial support.

The University of Virginia then undertook to support it financially for two years; but, that aid being withdrawn, the Annals was given to Harvard. After meeting there the same fate as at Virginia, it finally found a permanent home at Princeton. It was at this time of his relinquishing control of the Annals that the New York Mathematical Society, and its Bulletin, were established, to be 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.

J. J. LUCK

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## 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