

STEFAN BANACH
1892-1945

News came recently that Stefan Banach died in Europe shortly after the end of the war. The great interest aroused in this country by his work is well known. In fact, in one of Banach's main fields of work, the theory of linear spaces of infinitely many dimensions, the American school has developed and continues to contribute very important results. It was a rather amazing coincidence of scientific intuition which focused the work of many mathematicians, Polish and American, on this same field, a field which grew so richly in the period between the two world wars. Actually, it was E. H. Moore who was the precursor of the doctrine of applying abstract algebraic methods to many concrete problems of analysis. It is not necessary to describe the achievements of Banach and his students which center around his monograph on the theory of linear operations.

Banach's work brought out for the first time in the *general* case the success of the methods of geometrical and algebraic approach to problems in linear analysis—far beyond the more formal discoveries of Volterra, Hadamard, and their successors. His results embraced more general spaces than the work of such mathematicians as Hilbert, Schmidt, Riesz, von Neumann, Stone, and others.¹ Many mathematicians, especially the younger ones in the United States, took up this idea of geometrical and algebraic study of linear function spaces, and the work is still going on vigorously and producing rather important results. Also, it is not necessary to stress the possibilities of the application of similar methods of approach to problems of nonlinear analysis, at present so numerous and important for immediate applications. Banach had a number of results (unfortunately unpublished) on the theory of polynomials and analytical operators in a class of suitably defined infinitely-dimensional spaces.

He had in preparation a sequel to his volume on linear operators dealing with spaces on which one could study nonlinear transformations. Various approaches to the study of "nonlinear analysis" have of course been made before by mathematicians. In the opinion of the writer the proper definition of a natural class of spaces on which these more general operators should be studied has not yet been found. Very

¹ The initial general formulation was published, almost simultaneously with that of Banach, by Norbert Wiener who, however, changed his field of interest very shortly afterward.