RECENT GENERAL TRENDS IN MATHEMATICS

By Professor ARISTOTLE D. MICHAL
CALIFORNIA INSTITUTE OF TECHNOLOGY

Excepting some comparatively isolated researches in elementary geometry and algebra, mathematical research in the first decade of the twentieth century was largely concerned with subjects whose roots were in the theory of functions of real or complex variables and in a large number of special functional transformations of such functions. It is true that in both America and Europe, the mathematical world was then dimly aware that there was such a thing as a theory of functions of abstract (or general) variables, but outside of a few distinguished workers, notably E. H. Moore in America and M. Fréchet in Europe, no one seemed to have done anything about it. This trend towards general function theories made itself felt during the next two succeeding decades in certain branches of functional analysis, topology and algebra. It was not, however, until the last ten years that general analysis and general algebra permeated, or at least influenced, practically every nook and corner of mathematics and symbolic logic. The American and Polish schools of abstract thought have played a leading role in this development. It is gratifying to see that a large number of young men in American centers of learning are making important contributions to general analysis and general algebra. In the interest of clarity it should be remarked in this connection that excellent progress has been made during the last decade in the theory of functions of real and complex variables and their application to various topics in functional equations, to the calculus of variations and to classical differential geometry. The point we wish to emphasize here, however, is that much of this progress was directly or indirectly inspired by ideas current in general analysis.

One of the reasons why general analysis and general algebra are so far-reaching and very concrete indeed when understood is that one can, by special interpretation of a few general variables and operations, obtain old as well as numerous new results by methods that brush aside the unessential and historically acci-

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1 An address delivered by invitation at the University of Illinois, April 30, 1940.
Editor's Summary

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