Essai sur le Développement de la Théorie des Fonctions de Variables Complexes. By Gaston Julia. Paris, Gauthier-Villars, 1933. viii+53 pp.

This pamphlet contains the lecture delivered by the author at the International Mathematical Congress at Zurich (1932). It covers a wide field, no less than that of the evolution of the subject from the time of Cauchy to the present, including the most recent work on quasi-analytic functions. The author, from the beginning, sets himself the task not only of outlining the main directions of progress in the theory of functions proper, but also of tracing the relations of its development to that of other mathematical disciplines.

A chapter is devoted to each of three periods. The first extends from the beginning of Cauchy's work to 1879, the year of Picard's theorem. The next goes on to 1900, when the theory of point sets and of functions of real variables began to exercise a strong influence. This second period is marked by the dominance of the French school, including such names as those of Picard, Poincaré, Painlevé, Hadamard. The third period, from 1900 to the present, is sketched rapidly, but the author succeeds in giving some idea of the many modern lines of development. To indicate the amount of ground covered, the reviewer counted the names of seventy-four mathematicians whose work was cited in this last section. Twenty-eight of these were German, seventeen French, eleven Scandinavian, nine from eastern Europe, five Italian, and but two English and two native American. Does this represent a true appraisal of the importance of the various modern schools? The author would probably be the first to deny any such significance for his list of references; in fact he does so in his preface. But one looks in vain for any reference to the applications of this theory in the work of Birkhoff, for example. Perhaps it is too much to expect that a lecture of this length be encyclopedic.

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Les Espaces de Finsler. By E. Cartan. (Actualités Scientifiques et Industrielles, No. 79.) Paris, Hermann, 1934. 40 pp.

In this pamphlet the author presents the recent developments in the geometry of Finsler spaces. He proposes five postulates for measurements in the space and by means of them obtains his tensor calculus. As he points out, his affine connection is essentially different from that of Berwald and it is more nearly analogous to that of a Riemann space; its main advantage is in the fact that lengths are preserved in parallel displacement. Of course here, as is usual, only spaces leading to a regular problem in the calculus of variations are considered. Of the scalar differential forms the author considers only the most important one—the angular metric of Landsberg, and he shows that it has curvature +1. There are three sections on the geometry of curves and surfaces in a three-dimensional Finsler space which show to what extent or with what modifications classical differential geometry can be carried over to apply to Finsler spaces.

The author also considers some special n-dimensional spaces characterized by the vanishing of some tensor invariant; of particular interest is the one for which the determinant of the fundamental tensor is a point-function ($A_{ik}{}^{k}=0$). Another interesting problem considered is the representation of the geometry