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(*b*. Sainte-Marieaux-Mines, near Colmar, France, 13 March 1871; *d*. Cavalaire, Var, France, 8 March 1941)

mathematics.

Drach was born a few months before the Treaty of Frankfurt, by which Alsace ceased to be French. His father, Joseph Louis Drach, and mother, the former Marie-Josèphe Balthazard, modest farmers from the Vosges, took refuge with their three sons at Saint-Dié. From his youth Drach had to work for an architect in order to help his family. He was, however, able to attend elementary school and, at the urging of his teachers, who obtained a scholarship for him, went on to the *collège* in Saint-Dié and then to the lycée in Nancy. Drach was admitted at the age of eighteen to the École Normale Supérieure. Without attempting to make up his failure of the *agrégation*, and encouraged by Jules Tannery, he devoted himself to research and obtained the *doctorat-ès-sciences* in 1898. He taught at the universities of Clermont-Ferrand, Lille, Poitiers (where he married Mathilde Guitton), Toulouse, and Paris (1913), where his courses in analytical mechanics and higher analysis were well received. Drach was elected to the Académie des Sciences in 1929 and was a member of many scientific commissions. His poor health obliged him to reside in Provence for most of the year. His son Pierre entered the École Normale Supérieure in 1926 and had a brilliant career as a biologist.

After retiring to his estate at Cavalaire, Drach pursued his mathematical researches and indulged his love of reading, being interested in the plastic arts as well as in the sciences. Marked by the ordeals of his youth, he always remained close to the poor and was actively involved in the improvement of land held by the peasants.

Drach's mathematical researches display great unity. Galois's algebraic theory, with its extension to linear differential equations just made by Émile Picard (1887), seemed to him to be a model of perfection. He proposed to elucidate the fundamental reason for such a success in order to be able to extend it to the study of differential equations in the most general cases, asserting that the theory of groups is inseparable from the study of the transcendental quantities of integral calculus.

To what he termed the "geometric" point of view, in which one introduces supposedly given functions whose nature is not specified, Drach opposed the "logical" problem of integration, which consists of classifying the transcendental quantities satisfying the rational system verified by the solutions. For this process he introduced the notion of the "rationality group," whose reducibility and primitiveness he investigated. This bold conception, of an absolute character, foreshadowed the axiomatic constructions that were subsequently developed. In discovering regular methods permitting one to foresee the reductions in the difficulties of integration, Drach gave an account of the results obtained before him by Sophus Lie, Émile Picard, and Ernest Vessiot. He completed these and thus extended the special studies concerning, for example, the ballistic equations and those determining families of curves in the geometry of surfaces, such as the "wave surface."

Besides numerous articles in various journals and notes published in the *Comptes rendus... de l'Académie des sciences* over some forty years, Drach, with his colleague and friend Émile Borel, prepared for publication a course given at the Faculté des Sciences in Paris by Henri Poincaré—*Leçons sur la théorie de l'élasticité* (Paris, 1892)—and one given by Jules Tannery at the École Normale Supérieure, *Introduction à l'étude de la théorie des nombres et de l'algèbre supérieure* (Paris, 1895). Moreover, he played a large role in preparing for publication, under the auspices of the Académie des Sciences, the works of Henri Poincaré (11 vols., 1916–1956).

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