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(*b*. Graz, Austria, 13 September 1885; *d*. Hamburg, Germany, 17 March 1962)

mathematics.

Blaschke's father, Josef Blaschke (1852–1917), was professor of descriptive geometry at the Landes-Oberrealschule at Graz. Wilhelm inherited his father's predilection for the geometry of Jakob Steiner and his love of concrete problems. Josef also imparted to the boy a feeling for history and an open-mindedness toward foreign cultures that remained with him throughout his life.

Blaschke began his studies at the Technische Hochschule of Graz and earned his doctorate from the University of Vienna in 1908. For more than a decade afterward he traveled through Europe, Seeking contact with many of the leading geometers of his day. He spent some months in Pisa with Luigi Bianchi and a semester in Göttingen, drawn there by Felix Klein, David Hilbert, and Carl Runge. He worked at Bonn with Eduard Study, whose main fields of research were geometry, kinematics, and the theory of invariants. Blaschke became *Privatdozent* at Bonn in 1910, but in the following year he went to the University of Greifswald to join Friedrich Engel, with whom he shared an admiration for the great Norwegian mathematician Sophus Lie.

In 1913 Blaschke accepted an extraordinary professorship at the Deutsche Technische Hochschule in Prague, and in 1915 he moved to Leipzig, where he became a close friend of Gustav Herglotz. Two years later he was made full professor at the University of Königsberg. After a short stay at Tübingen, Blaschke was called in 1919 to the full professorship of mathematics at the University of Hamburg, a position he retained until his retirement in 1953. He also held visiting professorships at Johns Hopkins University, at the University of Chicago, at the University of Istanbul, and at the Humboldt University in Berlin, and lectured at universities all over the world. He was married to Augusta Meta Röttger and had two children.

AT Hamburg, Blaschke succeeded within a few years in gaining worldwide recognition for the department of mathematics of the newly founded university, for he was able to attract to Hamburg such wellknown mathematicians as Erich Hecke, Emil Artin, and Helmut Hasse. Very soon Hamburg became a center of great mathematical activity and productivity, testimony to which is given by the *Abhandlungen aus dem mathematischen Seminar der Universität Hamburg and the Hamburger mathematische Einzelschriften*, both founded by Blaschke.

One of the leading geometers of his time, Blaschke centered most of his research on differential and integral geometry and kinematics. He combined an unusual power of geometrical imagination with a consistent and suggestive use of analytical tools; this gave his publications great conciseness and clarity and, with his charming personality, won him many students and collaborators.

Blaschke made "kinematic mapping" (discovered independently in 1911 by Josef Grünwald), which established a mapping between the group of isometries (motions) in the plane and the three dimensional point space, a central tool in kinematics; and in an abstract turn given to it by Kurt Reidemeister, it proved very useful in the axiomatic foundation of several geometries. In *Kreies und Kugel* (1916), Blaschke investigated the isoperimetric properties of convex bodies, characterizing circles and spheres as figures of minimal properties. In this he was following methods suggested by Steiner, who had been crticized by Dirichlet for omitting an existence proof. This was first remedied by Weierstrass by means of the calculus of variation, but Blaschke supplied the necessary existence proofs in a fashion closer to the spirit of Steiner.

Blaschke's books on differential geometry soon gained worldwide recognition. The three-volume *Vorlesungen* (1921–1929) put into practice Felix Klein's "Erkabgeb Program" for differential geometry: Volume 1 was devoted to classical geometry, Volume II to affine differential geometry (a subject developed by Blaschke his pupils), and Volume III to the differential geometry of circles and spheres, controlled by the transformation groups of Moebius, Laguerre, and Sophus Lie. (The treatment of projective differential geometry, however, was left to Blaschke's pupil Gerrit Bol.) Furthyermore, Blaschke originated topological differential geometry, which studies differentiable mappings; he collected the results in his books *Geometrie der Gewebe* (1938) and *Einführung in die Geometrie der Waben* (1955). In 1950 Blaschke gave a new, concise exposition of differential geometry based on ideas of E. Cartan.

Inspired by Gustav Herglotz and by some classical problems of geometrical probability (Buffon's needle problem, Crofton's formulas), Blaschke began, about 1935, a series of papers on integral geometry. Because of its relations to convex bodies and kinematics, this field of research was especially to his liking; and many of his students continued his work in this area-Hadwiger, Wu, Chern, and Santaló.

Blaschke received honorary doctorates from the universities of Sofia, Padua, and Greifswald, and the Karlsruhe Technische Hochschule. He was elected corresponding or honorary member of about a dozen European scientific academies.

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II. Secondary Literature. The following obituary notices describe Blaschke's life and work in greater detail: Werner Burau, "Wilhelm Blaschkes Leben und Werk," *in Mitteilungen der Mathematischen Gesellschaft in Hamburg***9** , no.2 (1963), 24–40; Otto Haupt, "Nachruf auf Wilhelm Blaschke," *in Jahrbuch 1962 der Akademie der Wissenschaften und der Literature zu Mainz* (MainzWiesbaden, 1962), pp. 44–51; Erwin Kruppa, "Wilhelm Blaschke," in *Almanach der Österreichischen Akademie der Wissenschaften*, **112** (for 1962) (vienna, 1963), 419–429; Hans Reichardt, "Wilhelm Blaschke †," in *Jahresbericht der Deutschen Mathematiker-Vereinigung*, **69** (1966), 1–8; and Emanuel Sperner, "Zum Gedenken an Wilhelm Blaschke," in *Abhandlungen aus dem Mathematischen Seminar der Universität Hamburg*, **26** (1963), 111–128 (with a bibliography by W. Baurau, to which Reichardt gives an addition).

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