

Bachmann, Paul Gustav Heinrich I

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(b. Berlin, Germany, 22 June 1837; d. Weimar, Germany, 31 March 1920)

mathematics.

Bachmann's father was pastor at the Jacobi Kirche, and from his home the young Paul inherited a pious Lutheran view of life, coupled with modesty and a great interest in music. During his early years in the Gymnasium he had some trouble with his mathematical studies, but his talent was discovered by the excellent teacher Karl Schellbach. After a stay in Switzerland for his health, presumably to recover from tuberculosis, Bachmann studied mathematics at the University of Berlin until he transferred to Göttingen in 1856 to attend Dirichlet's lectures. Here he became a close friend of Dedekind, who was a fellow student.

From 1856 on, Bachmann's interests were centered almost exclusively upon [number theory](#). He completed his studies in Berlin, where in 1862 he received his doctorate under the guidance of Ernst Kummer for a thesis on group theory. Two years later he completed his habilitation in Breslau with a paper on complex units, a subject inspired by Dirichlet. After some years as extraordinary professor in Breslau, Bachmann was appointed to a professorship in Münster.

Around 1890 Bachmann divorced his wife and resigned his professorship. With his second wife he settled in Weimar, where he combined his mathematical writing with composing, playing the piano, and serving as music critic for various newspapers. His main project, however, was a complete survey of the state of [number theory](#), *Zahlentheorie. Versuch einer Gesamtdarstellung dieser Wissenschaft in ihren Hauptteilen* (1892–1923). It includes not only a review of known results but also an evaluation of the various methods of proof and approach, labors for which his close association with Dirichlet, Kummer, Dedekind, and Hensel made him ideally suited.

BIBLIOGRAPHY

Bachmann's writings are *Vorlesungen über die Natur der Irrationalzahlen* (Leipzig, 1892); *Zahlentheorie. Versuch einer Gesamtdarstellung dieser Wissenschaft in ihren Hauptteilen*, 5 vols. (Leipzig, 1892–1923); *Niedere Zahlentheorie*, 2 vols. (Leipzig, 1902–1910); and *Das Fermat-Problem in seiner bisherigan Entwicklung* (Leipzig, 1919), which has stimulated much research in this field.

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