

Neumann, Carl Gottfried | Encyclopedia.com

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(*b.* Königsberg, Prussia [now Kaliningrad, R.S.F.S.R.], 7 May 1832; *d.* Leipzig, Germany, 27 March 1925)

mathematics, theoretical physics.

Neumann's father, Franz Ernst Neumann, was professor of physics and mineralogy at Königsberg; his mother, Luise Florentine Hagen, was a sister-in-law of the astronomer F. W. Bessel. Neumann received his primary and secondary education in Königsberg, attended the university, and formed particularly close friendships with the analyst F. J. Richelot and the geometer L. O. Hesse. After passing the examination for [secondary school](#) teaching he obtained his doctorate in 1855; in 1858 he qualified for lecturing in mathematics at Halle, where he became *Privatdozent* and, in 1863, assistant professor. In the latter year he was called to Basel, and in 1865 to Tübingen. From the autumn of 1868 until his retirement in 1911 he was at the University of Leipzig. In 1864 he married Hermine Mathilde Elise Kloss; she died in 1875.

Neumann, who led a quiet life, was a successful university teacher and a productive researcher. More than two generations of future Gymnasium teachers received their basic mathematical education from him. As a researcher he was especially prominent in the field of potential theory. His investigations into boundary value problems resulted in pioneering achievements; in 1870 he began to develop the method of the arithmetical mean for their solution. He also coined the term "logarithmic potential." The second boundary value problem of potential theory still bears his name; a generalization of it was later provided by H. Poincaré.

Neumann was a member of the Berlin Academy, and the Societies of Göttingen, Munich, and Leipzig. He performed a valuable service in founding and editing the important German mathematics periodical *Mathematische Annalen*.

BIBLIOGRAPHY

I. Original Works. Neumann's writings include *Vorlesungen über Riemanns Theorie der Abelschen Integrale* (Leipzig, 1865); *Untersuchungen über das logarithmische und Newtonsche Potential* (Leipzig, 1877); and *Über die nach Kreis-, Kugel- und Zylinderfunktionen fortschreitenden Entwicklungen* (Leipzig, 1881).

II. Secondary Literature. See H. Liebmann, "Zur Erinnerung an Carl Neumann," in *Jahresberichte der Deutschen Mathematikervereinigung*, **36** (1927), 175–178; and H. Salić, "Carl Neumann" in *Bedeutende Gelehrte in Leipzig*, II, G. Harig, ed. (Leipzig, 1965), 13–23.

H. Wussing