

Hermann, Jakob | Encyclopedia.com

Complete Dictionary of Scientific Biography COPYRIGHT 2008 Charles Scribner's Sons
5-6 minutes

(*b.* Basel, Switzerland, 16 July 1678; *d.* Basel, 11 July 1733)

mathematics.

Hermann, the son of Germanus Hermann, a headmaster, devoted much of his time to mathematics while studying theology at Basel (bachelor's degree, 1695; master's degree, 1696; theological examination, 1701). In the last quarter of the seventeenth century mathematics, which he took up under the guidance of [Jakob I Bernoulli](#), was characterized by the creation of the calculus and the stormy development of infinitesimal calculus. Through his exceptional ability and his zeal Hermann was able at a young age to join the small group of the most important mathematicians. In 1696 he defended Bernoulli's third dissertation on the theory of series and in 1701, through the intervention of Leibniz, became a member of the Berlin Academy with a work directed against Bernhard Nieuwentyt, a relentless critic of Leibniz's differential concept and methods. In 1707, again assisted by Leibniz, he was appointed professor of mathematics at Padua—to the same chair that Nikolaus I Bernoulli later held. The following year Hermann was accepted into the Academy at Bologna. Yet, as a Protestant in Italy, he seems not to have been completely happy; and in 1713 he gladly accepted a call—once more arranged by Leibniz—to Frankfurt-an-der-Oder.

While in Italy, Hermann composed the final version of his principal scientific work, the *Phoronomia*, which appeared at Amsterdam in 1716. This textbook—a critical analysis of which is still lacking—concerned advanced mechanics in the modern sense and was considered an important work, very favorably reviewed by Leibniz himself in the *Acta eruditorum*.

From 1724 to 1731 Hermann was connected with the flourishing Academy in [St. Petersburg](#), where he was the predecessor of [Leonhard Euler](#), to whom he was distantly related (he was a second cousin of Euler's mother). In addition to various papers on trajectory problems, algebraically squarable curves, and attraction. Hermann wrote volumes I and III (mathematics and fortification) of the textbook *Abrégé des mathématiques* ([St. Petersburg](#), 1728–1730). He also gave instruction in mathematics to the grandson of Peter the Great, the future Peter II. and to Isaac Bruckner.

Homesick, Hermann repeatedly sought to obtain any reasonably suitable position in Basel (see, for instance, Johann I Bernoulli's letter of 11 November 1724 to J. J. Scheuchzer). In 1722 he received, by lottery, the professorship of ethics and [natural law](#) at Basel, but he had a substitute carry out the duties of the office until he finally returned home in 1731. No professorship of mathematics became vacant in his native city before his death—the chair was brilliantly filled by Johann I Bernoulli. Shortly before his death the Paris Academy elected him a member.

Hermann possessed a serious, calm disposition; and through his sympathetic character, objectivity, and learning he won not only the friendship of Leibniz and of [Jakob I Bernoulli](#) but also the respect of all the leading mathematicians.

Hermann's scientific importance fully justifies the decision to incorporate his works into the complete edition of Bernoulliana which is now in progress. of the approximately 600 standard-size pages of his correspondence, about a third has been published by C. J. Gerhardt in Leibniz's *Mathematische Schriften*.

BIBLIOGRAPHY

I. Original Works. Hermann's works include *Responsio ad Clar. Viri Bernh. Nieuwentijt considerationes secundas circa calculi differentialis principia editatas* (Basel, 1700); *Phronomia, sive de viribus et motibus corporum solidorum et fluidorum libri duo* (Amsterdam, 1716); and *Abrégé des mathématiques*, vols. I and III (St. Petersburg, 1728–1730). For his articles, see Poggendorff, I. cols. 1077–1078.

Some of Hermann's letters may be found in C. J. Gerhardt, ed., *G. W. Leibniz' mathematische Schriften*, IV (Halle, 1859), 253–413. Extracts of his correspondence are in *Mitteilungen der Naturforschenden Gesellschaft in Bern* (1850), pp. 118–120. A complete bibliography may be found in the Bernoulli Archives in the university library at Basel].

II. Secondary Literature. On Hermann and his work, see (listed in chronological order) *Mercure Suisse* (Oct. 1733), pp. 77–85 and (Feb. 1734) for a eulogy and list of his writings; R. Wolf, "Euler," in *Biographien zur Kulturgeschichte der Schweiz*, IV (Zurich, 1862), pp. 90 ff.; O. Spiess, ed., *Der Briefwechsel von Johann Bernoulli*, I (Basel, 1955), *passim*; J. E. Hofmann, *Ueber Jakob Bernoullis Beiträge zur Infinitesimalmathematik* (Geneva, 1956); and V. I. Lysenko, "Die geometrischen

Arbeiten von Jakob Hermann,” in *Istoriko-matematicheskie issledovaniya*, **17** (1966), 299–307. On Hermann and mathematics in Russia see the notice by R. Wolf in *Verhandlungen der naturforschenden Gesellschaft in Zürich*, **35** (1890), 98–09; and M. Cantor, *Vorlesunen über Gesehie der Mathemalik*, III (Leipzig, 1901), *passim*.

E. A. Fellmann