Mayer, Christian Gustav Adolph | Encyclopedia.com

(*b*. Leipzig, Germany, 15 February 1839; *d*. Gries bei Bozen, Austria now Bolzano, Italy], 11 April 1908)

mathematics.

The son of a wealthy Leipzig merchant family, Mayer studied mathematics and physics from 1857 to 1865 at Leipzig, Göttingen, Heidelberg, and chiefly at Königsberg under F. Neumann. In 1861 he received his doctorate from Heidelberg and qualified to lecture there in 1866. He became assistant professor in 1871 and full professor in 1890. In 1872 Mayer married Margerete Weigel. Poor health caused him to suspend his teaching activities early in 1908.

As a professor, Mayer enjoyed great respect from his colleagues and students. His activity as a researcher, which earned him membership in numerous learned societies, dealt essentially with the theory of differential equations, the calculus of variations, and theoretical mechanics. In his work, Following Lagrange and Jacobi, he was capable of bringing out the inner relationship of these fields through emphasis on the principle of least action. Mayer achieved important individual results concerning the theory of integration of partial differential equations and the criteria for maxima and minima in variation problems. This work quickly brought him into close contact with the investigations on partial differential equations that Lie had under way at about the same time, Through subsequent works of Mayer. Lie's achievements became famous relatively quickly. Despite a great variety of methods and an outstanding mastery of calculation, Mayer was unable to develop the rigor necessary for the existence theorems of the calculus of variations; such rigor was displayed in exemplary fashion at approximately the same time by Weierstrass.

BIBLIOGRAPHY

Among Mayer's works are *Beiträge zur Theorie der Maxima und Minima einfacher Integrale* (Leipzig, 1866); *Geschichte des Prinzips der kleinsten Aktion* (Leipzig, 1877); and "Unbesehränkt integrable Systeme von linearen totalen Dilferentialgleichungen und die simultane Integration linearer partieller Differentialgleichungen," in *Mathematische Annalen*, **5** (1872), 448–470.

Also see the obituary notice by O. Holder, in *Berichte über die Verhandlungen der sächsischen Akademie der Wissenschaften zu Leipzig*, Math.-phys. Kl., **60** (1908), 353–373.

H. Wussing