Weisbach, Julius Ludwig | Encyclopedia.com

(*b*. Mittelschmiedeberg, near Annaberg, Germany, 10 August 1806; *d*. Freiberg, Germany, 24 February 1871), *hydraulics*.

The eight of nine children born to Christian Gottlieb Weisbach, a mine foreman, and Christina Rebekka Stephan, Weisbach received his early education at the Iyceum in Annaberg and the Bergschule in Freiberg. In 1822 borrowed funds enabled him to enter the Bergakademie, where Mohs advised him to go on to Göttingen. After two years at the latter university, he followed Mohs in 1829 to the Technical University and University of Vienna, where he studied mathematics, physics, and meachanics. Weisbach spent six months of the following year traveling on foot through Hungary, the Tirol, Bavaria, and bohemia. From 1831 to 1835 he gradually assumed responsibility for all instruction in mathematics at the Freiberg Gymnasium and, from 1832, that at the bergakademie as well, despite a low salary and little recognition. In 1832 he married Marie Winkler; their son, Albin, later became professor of mineralogy at the Bergakademie.

The first of Weisbach's numerous publications, *Bergmaschinenmechanik*, appeared in 1835, and the following year he was promoted to full professor of mathematics, mine machinery, and surveying. A trip to the Paris Industrial Exposition in 1839 increased Weisbach's interest in hydrulics and led to his first papers in this field. At the same time he contributed greatly to the development of mine surveying methos, introducing the theodolite in place of compass and protractor. Apparently an indefatigable worker, he assumed responsibility for courses in descriptive geometry, crystallography, and optics, as well as general mechanics.

In 1854 Weisbach was offered a position at the Zurich Polytechnikum (to open in 1855); he chose to remain at Freiberg and the following year assumed the further task of teaching machine design. Also in 1855 he attended the Paris World Exposition, receiving and correcting proof for a new edition of his *Mechanik* en route. During his professional career Weisbach published fourteen books and fifty-nine papers on mathematics, mechanics, and surveying, but primarily on hydraulics. An able experimenter, he presented most of his results in *Experimental-Hydraulik* (Freiberg, 1855); they are also summarized in the hydraulics section of his *Lehrbuch der Ingenieur- und Maschinenmechanik* (Brunswick). The two- (and eventually three-) volume work went through five editions between 1845 and 1901 and was translated into English and other languages. Some of his hydraulic data and formulas are stil in use.

From 1850 Weisbach received a series of professional honors, including an honorary doctorate from the University of Leipzig in 1859 and the first honorary membership granted by the verein Deutscher Ingenieure in 1860. He was a corresponding member of the St. Petersburg Academy of Sciences, the Royal Swedish Academy of Sciences, and the Accademia dei Lincei.

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Hunter Rouse