

GEORG FRIEDRICH BERNHARD RIEMANN (1826-1866)- Chronology

1826- born September 17, into the family of the pastor of Breselenz, kingdom of Hanover. There were four sisters, one brother. The family moved to nearby Quickborn when Riemann was an infant.

1840-1846- Gymnasium studies in Hanover (2 years) and Lüneburg- only six of the required ten years; home-schooled by his father before 1840. Schmalzfuss, the Gymnasium director, recognized his talent and lent him books- Archimedes, Apollonius, Newton, Legendre's *Number Theory* (returned with the comment 'wonderful book, I know it by heart now.')

1846-1851- University studies. 1846/47: Göttingen; by that time, Gauss taught only linear algebra, with emphasis on least squares. 1847/49: Berlin- took Dirichlet's courses on number theory, integration and partial differential equations, Jacobi's courses in analytical mechanics and algebra, Eisenstein's on elliptic functions. 1849/51- doctoral work at Göttingen.

1851- Doctoral thesis, *Foundations of a General Theory of Functions of One Complex Variable*, nominally under Gauss.

1854-Habilitation thesis, *On the Representation of a Function by a Trigonometric Series*. Habilitation lecture, *On the Hypotheses that Lie at the Foundation of Geometry*. Appointed lecturer (*Privatdozent*) at Göttingen.

1855- beginning of friendship with *Richard Dedekind* (1831-1916), another Göttingen instructor. Dedekind had earned his doctorate in 1852 and habilitation in 1854, both also under Gauss. Riemann's father died in 1855, and the sisters left Quickborn to join the older brother (a post office clerk) in Bremen. Dirichlet appointed Gauss's successor at Göttingen.

1857-Paper *Theory of Abelian Functions*- the first to make Riemann internationally known. Promoted to associate professor. His brother dies the same year, the youngest sister a year later; the three surviving sisters join him in Göttingen. Paper on *hypergeometric series*.

1858- Dedekind appointed professor at the Zurich Polytechnic, beating Riemann for the position (the Swiss interviewer liked Dedekind's lecturing style better); Dedekind would move to the Technical Institute in his hometown of Braunschweig in 1862. Also in the fall of 1858, Dirichlet suffers a heart attack; he would die in May of 1859 at age 54.

1859- Appointed full professor at Göttingen (Dirichlet's successor), and corresponding member of the Berlin Academy. Paper *On the Number of Prime Numbers Less Than a Given Quantity* published by the Berlin Academy.

1861/62. Paper on the motion of fluid ellipsoid; submission of a paper on the theory of the heat equation to a competition of the Paris Academy (did not get the prize due to 'incomplete calculations', according to his friend and biographer Dedekind).

1862- Marriage to Elise Koch, a friend of his sisters' (June). In July, comes down with pleurisy and apparently recovers, but from then on his health took a steep decline. After November 1862, spends most of his time in Italy, for health reasons.

1863-64- contact with Italian mathematicians, mainly in Pisa: Betti, Ricci, Levi-Civita. Offered the chair of geodesy in Pisa (declines.) 1863 (December 22)- birth in Pisa of a daughter (Ida.)

1865- Paper on the vanishing of theta-functions.

1866- 15 June: last trip to Italy (Lago Maggiore); dies on June 28, in the presence only of his wife. Buried in Biganzolo, parish of Selasca (Italy.)

