

# Vitali, Giuseppe | Encyclopedia.com

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(*b.* Ravenna, Italy, 26 August 1875; *d.* Bologna Italy, 29 February 1932), *mathematics*.

Vitali was unusual, in that for most of his life he worked in relative isolation, although he lived in Genoa and thus was not cut off from intellectual life. Nevertheless, he achieved such valuable results in the theory of functions of a real variable that he is considered one of the greatest predecessors of Lebesgue.

Vitali graduated from the Scuola Normale Superiore at Pisa in 1899 and immediately became assistant to Ulisse Dini, then one of the most authoritative Italian mathematicians, whose recommendation and approval could assure a promising career to a young mathematician. Vitali left this coveted post after two years, however, possibly because of financial need, and taught at various secondary schools, ending at the Liceo C. Colombo in Genoa (1904-1923). He also became involved in politics there, as a Socialist town councillor and municipal magistrate. In 1922, after the rise to power of fascism and the dissolution of the Socialist party, Vitali returned to his studies and made such progress that at the end of 1923 he won the competition for the professorship of infinitesimal analysis at the University of Modena. The following year he moved to Padua and, in 1930, to Bologna.

In 1926 Vitali was struck by a serious circulatory disorder. Weakened in body but not in mind, he returned to research and teaching; about half his published works (of which there are not many) were composed after this illness, even though he could not write.

Vitali was essentially self-taught and accustomed to working alone. This isolation sometimes led him inadvertently to duplicate someone else's discoveries, but he also avoided well-trodden paths. He holds undisputed priority in a number of discoveries: a theorem on set-covering, the notion of an absolutely continuous function, a theorem on the analyticity of the limit of certain successions of equilimited analytical functions, and criteria for closure of systems of orthogonal functions.

In his last years Vitali confined himself to problems of less general interest, such as his new absolute differential calculus and, in collaboration with his friend and colleague A. Tònolo (1885-1962), his "geometry" of Hilbert spaces—neither of which has aroused particular interest.

After Vitali's death Giovanni Sansone published, as coauthors, Vitali's useful *Moderna teoria delle funzioni di variabile reale* (Bologna, 1935; 3rd ed., 1952), the first part of which was written mainly by Vitali.

Vitali was a corresponding fellow of the Academy of Sciences of Turin (1928), of the Accademia dei Lincei (1930), and of the Academy of Bologna (1931).

## BIBLIOGRAPHY

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F. G. Tricomi