

The *Cours d'analyse infinitésimale* of Charles de La Vallée Poussin and the 'ghost volume two' of its third edition

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Abstract

The well-known *Cours d'analyse infinitésimale* of the Belgian mathematician Charles de La Vallée Poussin (1866-1962) has seen twelve editions of its volume 1 between 1903 and 1959, and nine editions of its volume 2 between 1906 and 1957. It has been translated in Russian and reproduced by Dover. Mathematically, the most interesting editions are the second and the third ones, being the only ones where the Lebesgue integral is developed.

Unfortunately, the third edition of the second volume, planned for the Fall of 1914, was never published, having been destroyed in the printing house joining the main Library of the Université Catholique de Louvain, when this library was intentionally burned down by the German army during the First World War.

It was discovered recently that the galley proofs of a substantial part of the destroyed volume had been offered to a great-grandson of de La Vallée Poussin, together with pages of the second edition annotated by him in view of the third edition. This has allowed a reconstruction of this 'ghost volume', which constitutes an essential link in the development of the ideas of de La Vallée Poussin about the Lebesgue integral and related questions.

We discuss the evolution of the *Cours d'analyse infinitésimale*, with special attention to the 'ghost volume'.