

An Epigenetic Perspective on the Midwife Toad Experiments of Paul Kammerer (1880?1926)

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© 2016 Wiley Periodicals, Inc. Paul Kammerer was the most outstanding neo-Lamarckian experimentalist of the early 20th century. He reported spectacular results in the midwife toad, including crosses of environmentally modified toads with normal toads, where acquired traits were inherited in Mendelian fashion. Accusations of fraud generated a great scandal, ending with Kammerer's suicide. Controversy reignited in the 1970s, when journalist Arthur Koestler argued against these accusations. Since then, others have argued that Kammerer's results, even if real, were not groundbreaking and could be explained by somatic plasticity, inadvertent selection, or conventional genetics. More recently, epigenetics has uncovered mechanisms by which inheritance can respond directly to environmental change, inviting a reanalysis of Kammerer's descriptions. Previous arguments for mere somatic plasticity have ignored the description of experiments showing heritable germ line modification. Alleged inadvert