Disputed Inheritance: The Battle over Mendel and the Future of Biology. By Gregory Radick. Chicago: University of Chicago Press. $112.50 (hardcover); $37.50 (paper). xii + 630 p., ill.; notes; bibliography; index. ISBN: 9780226822709 (hc); 9780226822723 (pb); 9780226822716 (eb). 2023.

The "rediscovery" of Gregor Mendel's landmark 1866 publication in 1900 led, as any student of the history of biology can tell you, to a revolution in the study of heredity and inheritance. There has long been a "canned" history of this revolution, tinged with the kind of regret only possible in hindsight. The early Mendelians, led by their figurehead William Bateson, were right to see in Mendel the fundamentals of the genetic biology that would be developed over the next century, but were too quick to dismiss Darwinian evolution by natural selection as an impediment to the nascent science of genetics.

A competing group, the biometricians, led by Karl Pearson and W. F. R. Weldon (the latter of whom is this book's central character), rightly saw that statistical analysis of populations was the way to understand evolving systems, but was too anti-Mendelian to appreciate the importance of genetics. The acrimonious and extremely personal fight between these camps that spilled out, roughly, from 1880 to 1910 delayed our inevitable arrival at contemporary evolution and genetics by at least twenty years.

Less well known is that an emerging consensus in the history of biology, developed over the last twenty or thirty years, has placed this story in serious doubt. The foundation of Gregory Radick's masterful volume is a comprehensive presentation of this new, alternative narrative. Far from being a lamentable backwater period in the history of science, these decades offer us a compelling, profound scientific debate between two views of how heredity might work. As recast by Radick, the Mendelian view, with its attendant genetic determinism (Mendel's peas are, after all, either yellow or green, either wrinkled or smooth, regardless of any influence from their environments) is pitted against a more holistic, Weldonian approach, in which what counts is the interaction between inherited determinants of characters and the environments, biotic and abiotic, in which those characters will develop.

This careful and gripping historical retelling occupies the first 250 pages of Radick's book, and the project would have been impressive enough had he stopped there. But the following chapters take these historical insights and push them in a host of novel directions. If Weldon's conception was a valid one, then why did it fail? Radick argues that it is Bateson's deft transformation of Mendel into "teachable principles, tractable problems, and technological promise" (380) that ensured its success. Could this success, counterfactually, have been duplicated by the Weldonian paradigm? Radick argues that it could have – on the basis of real-world testing of a Weldonian way to teach genetics, with the promise of giving our students a more sophisticated view, debunking genetic determinism.

Here, on full display, is the utility of studying the history of biology: illuminating science in its contemporary complexity via the detailed consideration of recessive currents in its past.

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