РЕЦЕНЗИИ И АННОТАЦИИ

Lysenko's Ghost: Epigenetics and Russia

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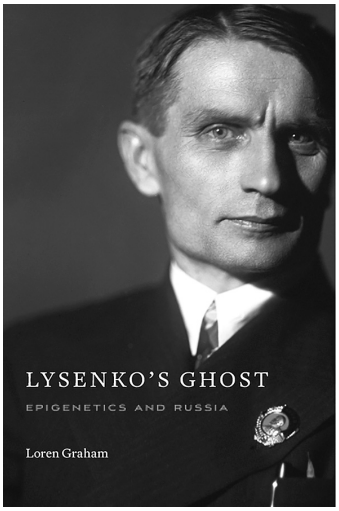

The advances in molecular biology that began in the mid-twentieth century opened new paths in the biological research and made possible to see phenomena in classical genetics from different perspectives. Epigenetics has reactivated discussions and controversies about inheritance mechanisms and are being widely debated among scientists, historians and philosophers.

Regarding this debate, Loren Graham takes up the Lysenko case and its repercussions on scientific culture as well as its consequences in contemporary science, especially in Russia where the issue reappears amid the political context of that country[1]. Trofim Lysenko (1898–1976), the Soviet scientist supported by Joseph Stalin, led Soviet biology during the early years of the Cold War and defended among his theses the possibility of the inheritance of acquired characteristics.

The Lysenko case has attracted interest in recent decades and still carries with it some of the enigmas, confusions and political positions that during the Cold War made it a singular episode in the history of science. Graham is a Lysenko scholar and has published several works on the subject. In this book, the author proposes to walk between the analysis of the subject in question without avoiding the judgment of what was the Lysenkoism and his recent attempts of the revival in Russia. Due to the hypotheses raised after the discoveries of epigenetic mechanisms, especially in relation to the transmission of acquired characteristics for subsequent generations, Graham provokes his readers in the opening of his book with the following question "was Lysenko right after all?"[2]

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[1] *Graham L.* Lysenko's Ghost: Epigenetics and Russia. Cambridge: Harvard University Press, 2016. 209 p. ISBN 978–0–674–08905–1.

[2] Ibid. P. 3.

In the first chapters of the book, he examines the long trajectory of the doctrine of the inheritance of acquired characteristics, originally attributed to Lamarck, pointing out the different interpretations that have solidified in the history of biology, many of which are imprecise, according to the author. Particularly, with regard to the distinction of this conception with modern understanding of epigenetic heritage.

Graham narrates how the doctrine of the inheritance of acquired characteristics developed in Russia before and after the revolution and the possible reasons for its unequal assimilation in this country compared to the Western countries, as well as the solidification of this idea even before Lysenko emerged in the Soviet biology. In a fascinating and well written way, Graham presents the trajectory of some of the characters that intervened in the course of this doctrine in the first half of the twentieth century. Being promoting it, as did the socialist biologist Paul Kammerer in the West with his experiments with midwife toads, or contesting it, as did biologist Dmitrii Belyaev in the Soviet Union itself with his experiments on the behavior of foxes. Starting from these different historical situations, Graham inquires whether the heritable epigenetic variation would be acting in these experiments or how we might look at these experiments after the discoveries of the epigenetic mechanisms.

In the fourth chapter, Graham introduces us to the rich and overlapping history of Soviet Darwinism, drawing on the different conceptions in Russian science and Marxism about inheritance theories and their social and political consequences. Graham examines the evolution of the clash between the different intellectual traditions that composed that scene until the establishment of the official consensus adopted by the Communist Party in favor of the Lamarck ideas, in the middle of the 1930s. On this Consensus Lysenko would emerge years later.

In the next two chapters (chapters 5 and 6), Lysenko's conceptions, his influences and his peasant origins are analyzed in detail. After years of studying Lysenko, Graham was able to make a fortuitous interview with Lysenko, which took place in a dining room of the Russian Academy of Science in 1971. In this interview we witnessed the historical analysis of Lysenko's legacy, made by the scientist himself as well as Graham's positions with every reply made to the interviewee. Graham becomes a character in his own book in this surprising passage.

In the seventh chapter, Graham dedicates to the origin of epigenetics and its development from the bases of molecular biology and genetics, something different from the proposal of the "new Lysenkoists" of Russia. He also discusses the controversies about the possibility of epigenetic mechanisms acting effectively on the inheritance of acquired characteristics.

The last three chapters are devoted to the revival of Lysenkoism in Russia. Graham critically presents Lysenko's ghost reappearing in this country as a mythical figure with insertion in the media, education, religion and even Russian science under the background of Putin's patriotism.

This Russian "new Lysenkoism", as it happened in the past, is not dissociated from political issues, and the author brings examples of some supporters nostalgic for the old Stalinism. Established scientists, such as biologists Lev Zhivotovskii and A.I. Shatalkin, would also be reviewing Lysenko's contributions in light of current biology and epigenetic mechanisms. Graham demonstrates how Lysenko's ghost also negatively presses scientists who wish to research the epigenetic inheritance and who do not claim Lysenko's legacy. Just as there were Russian scientists, such as A.A. Liubishchev, who sustained the inheritance of acquired characteristics without supporting Lysenko's authoritarian methods.

As Graham argues in his conclusion, it is evident that the Lysenkoism can only be understood within the singular context of the Cold War. Although the Soviet context has left traces in the present-day Russia, it is not possible to establish a continuity between the current Russian

political regime, headed by Putin, and the regime led by Stalin. Moreover, we can add here that the Stalinist regime persecuted and eliminated opponents and not only opponents of Lysenko's biology, but dozens of other scientists, writers and intellectuals who suffered with their purges and persecutions, as we can see in *Stalin and the Soviet Science Wars* (2006)[3]. And also of his political opponents, like the Leon Trotsky assassinated in 1940 in exile.

In response to the question asked at the opening of his book, if Lysenko would be right after all, Graham concludes: "No, he was not"[4]. The merit reserved to Lysenko is of a mere plant breeder, that perfected methods that already existed and, therefore, he was not original. Without the support of the Stalinist regime Lysenko would not have been what it was, sustains Graham.

The rebirth of Lysenkoism today does not rest on the foundations of molecular biology. Ironically, Lysenkoism returns again as an instrument of political propaganda, but it no longer arises as the tragedy that was in the past, now closer to a farce.

History is also an instrument for understanding and acting upon our present, and the book is a contribution for that. Any historical or contemporary judgment we make on the Lysenko case inevitably gains explicit political contours. This is fascinating in the studies on Lysenkoism and Graham does not shy away from positioning himself and causes the reader to do the same, something not recurrent among academic circles. This is one of the virtues of this book.

Призрак Лысенко: эпигенетика и Россия

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В своей книге Лорен Грэм рассматривает дело Лысенко и его последствия для научной культуры, а также для современной науки, особенно в России, где проблема возникает снова в условиях политического контекста страны.

[3] *Pollock Ethan*. Stalin and the Soviet Science Wars. Princeton, N.J.: Princeton University Press, 2006. 257 p.

[4] *Graham...* P. 139.