

Species: A History of the Idea

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The Meaning of Species

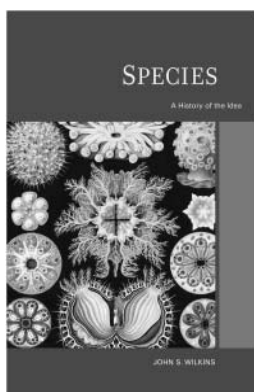
Species: A History of the Idea. John S. Wilkins. University of California Press, 2009. 320 pp., illus. \$49.95 (ISBN 9780520260856 cloth).

S*pecies: A History of the Idea* attempts to survey the history of the concept of species from antiquity to the present. Written by philosopher John S. Wilkins, the book bills itself as a work in the history of ideas or an intellectual history, which means that the emphasis is not on the context but on the content of the ideas. It is, in short, an internalist history, dedicated to tracking both the logic and the filiations of an idea.

Wilkins starts with the beginnings of Greek natural philosophy itself, and with the Milesian school of pre-Socratic philosophers. He follows the tortuous path through the ideas of subsequent thinkers such as Plato and Aristotle to less-well-known Medieval and Renaissance thinkers such as Boëthius and Marsilio Ficino, working his way to more familiar taxonomists and Enlightenment luminaries as Cuvier, Buffon, and Linnaeus. He then progresses to Lamarck and Darwin, who did a great deal to rethink species in transformationist terms, and devotes an entire chapter to Darwin and his successors. Moving to the 20th century, Wilkins focuses on the modern synthesis of evolution and the emergence of the biological species concept (Wilkins calls it the biospecies concept) through the efforts of Theodosius Dobzhansky and Ernst Mayr, and builds to a philosophical discussion of the species problem in the context of a number of contemporary debates. The book closes with a call to end the “essentialist mythology” preceding Darwin, which Wilkins argues has been erroneously promulgated by self-serving scientists of 20th

century evolution (synthesists such as Mayr and others), who rewrote history around their interests either by “demonizing their opponents in proxy or by demonstrating that they are the culmination of a progressive process of discovery” (p. 233).

At its best, *Species* offers a panoramic view of the attempts to sort and classify the natural world. For practicing biologists, its value lies in demonstrating how long and how hard a variety of thinkers have grappled with



defining species and the fact that this effort remains contested terrain. This alone might make the book worth reading. Regrettably, however, biologists and general readers are unlikely to follow a considerable portion of the philosophical explication, because at times the writing is too dense and dependent on philosophical jargon, whereas at other times it is almost glib and overly casual in tone (the shifting verb tenses and syntactical errors alone will drive some readers crazy). One cannot tell if this is an original work of scholarship intended to rewrite the entire history of evolutionary biology, or rather something meant to be read as a general reference, perhaps useful for teaching undergraduates general biology.

The treatment is spotty, the narrative is erratic, and too often historical figures and their works are just

dropped into the text, sometimes without any introduction or explanation. Background information is often over-generalized, idiosyncratic, or just plain wrong (e.g., the description of Thomas Hunt Morgan—a scientist born in Kentucky; associated with Johns Hopkins, Bryn Mawr, Caltech, and Columbia universities; trained in experimental embryology; who launched classical or transmission genetics through his work on *Drosophila melanogaster*—as the “famous Chicago geneticist” [p. 179]). Specific interpretive points are at times confused, partly because they are too often processed through the work of philosophers of biology or dated historians of biology (I was stunned to see Erik Nordenskiöld’s 1929 general history of biology cited as authoritative). There is too little care taken to explain the interpretive twists required by the reader as a result of Wilkins’s reliance on multiple secondary sources. As an intellectual historian myself, I also seriously wondered about the translations offered from ancient Greek or Latin works.

The real problem with *Species*, however, is that it lacks sufficient grounding in both history and biology, especially for the late 19th and the first half of the 20th century—areas that historians of biology have been mining for decades. Wilkins ignores too much of this work and does a poor job researching primary sources himself. The chapter on Darwin, for example, is tedious, with excerpt after excerpt from the sixth edition of *On the Origin* reproduced in excruciating detail. Darwin scholars will balk at the interpretations Wilkins offers, and wonder why he relied on the sixth edition, which Darwin wrote to mollify many *Origin* critics. Furthermore, why devote so much space to the efforts of plant workers such as J. P. Lottsy and Göte Turesson, who struggled with variation and mechanisms of speciation in plants, but then ignore the work of Jens Clausen, David

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Keck, William Hiesey, Edgar Anderson, Carl Epling, E. B. Babcock, and George Ledyard Stebbins, who also grappled with the species problem in the plant world, but had greater success?

The only answer seems to be that the selection fits Wilkins's agenda, which is to rewrite the history of biology from his philosophical vantage point. Why else characterize the history of the evolutionary synthesis (or the modern synthesis of evolution) as taking place between 1930 and 1942, giving credit to R. A. Fisher (actually called "the founder of the modern synthesis" [p. 181]), largely ignoring the contributions of mathematical theorists Sewall Wright and J. B. S. Haldane, and then terminating it in 1942 instead of 1950 (the consensually determined end point)? Was it that including George Gaylord Simpson's paleontological contributions in his 1944 book, or G. Ledyard Stebbins's botanical contributions to the species problem in 1950, might muddy the waters, or was it simply because Wilkins wishes to elevate Mayr's importance so he can later knock him down?

Mayr's *Systematics and the Origin of Species*, published in 1942, is indeed one of the major works of the period, but it is wrong to refer to it as "the single most widely referred-to volume of the synthesis" (p. 188). That distinction should be given to Dobzhansky's 1937 *Genetics and the Origin of Species*. It was Dobzhansky who took the lead; Mayr's response (not just a reaction to the unpopular ideas of Richard Goldschmidt, as Wilkins seems to think) led to his own book, which was meant to supplement Dobzhansky's emphasis on "genetics" with an emphasis on "systematics."

The bugaboo of the Wilkins agenda seems to be Mayr, as systematist and historian (and, it seems, nearly everyone who took Mayr seriously). The fact that Mayr was responsible for much of the early philosophy of biology (along with philosopher Marjorie Grene) is neglected in *Species*, whereas the late philosopher David Hull is described worshipfully as "the leading philosopher of biology of his generation," who

"made it a point to focus on the actual history and biology of his subjects" (p. 3). (Never mind that Hull didn't consult archives or do biology.) For the last two decades or so, Mayr's work has been the focus of detailed scholarly analysis, none of which was consulted before the writing of this book. That is too bad, because Wilkins might have learned something about what intellectual historians do, which is to historicize and contextualize concepts so as to give us more understanding about the past, about people and their ideas, ultimately with the hope of achieving a bit more humility about ourselves.

Contextualization (here, it would mean putting the concept of species in a historical or cultural context) would have allowed readers to appreciate that the word "species" is loaded with meaning because it inevitably brings values and politics into the picture. Concern with the meaning of race in humans, in all its ugly manifestations, has dominated discussions of taxonomy from Linnaeus onward, a fact that is given minimal or no attention in this book, as though it were not a critical feature of the history of classification. At one point, Wilkins cites a loaded entry from Dobzhansky's 1951 edition of *Genetics and the Origin of Species* about human races, but avoids substantive discussion of it, preferring instead to use it as an argument against Mayr's insertion of "typological" thinking into the synthesis. In fact, an emphasis on populations, and on individual differences, which characterized the synthesis and stressed the process of speciation, enabled a more dynamic view of races, species, and ultimately the wider evolutionary picture. That bigger picture really should have formed a critical part of the latter part of this book, especially because Wilkins laudably calls for a de-essentialized view of humans in the conclusion.

Clearly, Wilkins's project suffers from his philosophical agenda, a lack of knowledge of the history of biology and its sources, and a failure to apply the basic methodologies of historical scholarship. He repeats erroneous

claims made by some philosophers that classification has not been of much interest, when in fact philosophers such as Michel Foucault and historians (and biologists) such as Stephen J. Gould and others have been drawing attention to the problems of classification for at least a generation. Classification does matter, and despite my criticisms, this book does have considerable value in drawing attention to it and to the problem of species. If Wilkins's work continues to broaden discussion of the complex history of species and its meaning, then *Species: A History of the Idea* will have served a good purpose. I recommend reading this book, but with more than a grain of salt.

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MAKE YOUR SCIENCE MATTER!

Escape from the Ivory Tower: A Guide to Making Your Science Matter. Nancy Baron. Island Press, 2010. 246 pp., illus. \$27.50 (ISBN 9781597266642 paper).

Some years ago, an earthquake hit the northern Front Range of Colorado. Although the event was not impressive by California standards, four-drawer filing cabinets had danced little jigs, and my undergraduate assistant was convinced that the unusual silence among our research birds in the hours before the quake was evidence of their prescience. He mentioned this to some friends, and soon I was talking to the local radio folks, explaining—careful scientist that I am—that there is no evidence confirming or denying the ability of bobwhite quail to foretell earthquakes. Within a day, the radio credited me with declaring that bobwhites could predict earthquakes.

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