

natural selection and drift when it comes to assessing the importance of causes of evolution.

A couple of general points. First, I think the volume would have been much improved by discussion of actual examples. For instance, in discussing natural selection, perhaps showing how selection can explain mimicry would have given the topic a little more vigor. Or, in the discussion of punctuated equilibrium, presenting an example to show what Eldredge and Gould had in mind when they proposed the theory, and why the skeptics were not impressed.

Second, I am really not quite sure why the book was written. There is no underlying connecting theme. This is not helped by the huge range of issues and the already noted brevity of the treatments. For instance, in discussing Darwin's theory, there is little or no emphasis on the way he focused on adaptation, trying to give a naturalistic explanation of "final cause," and why some congratulate him on this and others think he failed. Relatedly, the discussion of levels of selection was so brief that I left without a clear idea of individual selection against group selection, and whether one always trumped the other.

I thought the translation was good and clear and reads smoothly. Candidly, if I were teaching a course in the philosophy of biology, I doubt this volume would be my textbook. I would sooner go to the *Stanford Encyclopedia of Philosophy* (available online) and direct students to individual topics covered in that work. Also, if there is a second edition of this publication, the authors might want to correct the mistaken claim that Thomas Henry Huxley was the uncle of Julian and Aldous Huxley. He was their grandfather. It was the poet Matthew Arnold who was their great uncle.

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#### THE SCIENTIFIC METHOD: AN EVOLUTION OF THINKING FROM DARWIN TO DEWEY.

By Henry M. Cowles. Cambridge (Massachusetts): Harvard University Press. \$35.00. xi + 372 p.; index. ISBN: 9780674976191. 2020.

The title of this volume promises a historical narrative of thinking about the scientific method from Darwin to Dewey. On the surface, that is what we get, but the title holds a deeper meaning. From Darwin to Dewey, the scientific method is conceived as an evolution of thinking. That is, for around 100 years, scientific methodology is conceived as a special case in a broad picture of how thinking itself has adapted on evolutionary, historical, and individual-developmental time scales.

The narrative begins in the 1830s with scientists (not yet known as such) consciously turning their scientific attention onto science itself. As scientists puz-

zled about their own methods, history and philosophy of science as a distinctive enterprise is born, and we see the genesis of the idea (still popular among philosophers of science) that scientific rationality is just ordinary rationality writ large. Darwin develops the idea with (of course) a distinctively evolutionary twist and hypothesizing, once eyed with suspicion as unscientific conjecture, is reconceived as analogous to variation for natural selection. Not only scientific thought but cognition in general consists in selecting hypotheses by pitting them against one another. In both the minds of the individual practitioner and in the public debates in journals and at professional meetings, hypotheses struggle for existence. The result is that we, and science, adapt.

Early psychologists inherit from Darwin a conception of cognition as a kind of evolutionary process. Evolution, scientific methodology, and (critically) everyday thinking and problem-solving are all a process of trial, error, and selection. The tale culminates with Dewey summarizing the process of learning in children, gleaned through his work on pedagogy and child psychology, into a list of steps. In an all-too-brief final chapter, we see that these steps, intended as a simplified picture of thought in general, come to be represented in textbooks and the popular imagination as "the scientific method," an algorithm that not only tells one how to do science but also separates science from other disciplines and our ordinary muddled way of thinking.

My only complaint is that the beginning and end of the book feel too quick. Although not the focus of the volume, the tale of how Dewey's steps attained their current mythological status felt rushed, and I wish the first chapter indicated better where the book was headed. When Cowles emphasizes on the first few pages the nonexistence of the scientific method and the diversity of scientific work, I expected a kind of debunking history of the unity of science. What we get instead is quite the opposite, and much more satisfying, compelling history revealing an image of science as something natural, something we can all relate to and endorse because the "scientific method" of our textbooks is not really specific to science. It is simply how we think.

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#### DARWIN'S PSYCHOLOGY.

By Ben Bradley. Oxford and New York: Oxford University Press. \$40.00. xv + 409 p.; ill.; index. ISBN: 978-0-19-870821-6. 2020.

Charles Darwin's corpus is so rich and wide ranging that reading it can be something of a Rorschach test. Adherents of any number of theoretical and methodological stances have found support for their claim to