



Donald R. Prothero. *The Story of the Dinosaurs in 25 Discoveries: Amazing Fossils and the People Who Found Them.* New York: Columbia University Press, 2019. xi + 472 pp. \$35.00, cloth, ISBN 978-0-231-18602-5.

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Dinosaurs are fascinating not only because are they incredibly enormous, awe-inspiring creatures, but also because the ideas and conceptions of them have changed dramatically over time. From the mid-nineteenth century, many of these “terrible lizards” have been transformed from scaly, lumbering beasts to more complex, nimble beings.

Donald R. Prothero’s book, *The Story of the Dinosaurs in 25 Discoveries*, examines the history of dinosaur paleontology through a series of chapters that center around the fossils themselves. It is a work that aims to illuminate the science on dinosaur fossils for a public readership—transcending a variety of audiences just as dinosaurs themselves have. Prothero’s story is not, however, one that simply explains current thinking in the science. Instead, it includes a fair amount of history.

The book is arranged with each chapter focusing on one particular creature, tracing it from the earliest fossil discovery to the modern knowledge on that particular species. Take, for example, the chapter on the *Diplodocus*, which begins in 1878 in Canon City, Colorado, and ends with a discussion of the present-day visitor’s center at Dinosaur National Monument. Between these starting and ending points, Prothero tells, in broad strokes, the sto-

ries of the men (and they were almost entirely men) who made discoveries and interpreted the findings. The chapters are lumped into four sections: one that looks at the beginning of the field, followed by three that group the specimens into taxonomic sections, from sauropods to theropods.

Although many excellent, public-facing books on dinosaur discoveries do exist, the advantage of discussing twenty-five discoveries (a massive feat) is that it allows the text to move beyond the well-trodden paths of the history of dinosaur paleontology. For example, while *The Story of Dinosaurs* includes discussions of notorious specimens and their discoverers, from *Tyrannosaurus* to the historic bone wars between Othniel Marsh and Edward Drinker Cope, it also highlights those less well known. By further illuminating somewhat forgotten figures in the history of paleontology, like Joseph Leidy, this text paints a richer picture of the science’s history. When possible, Prothero also occasionally makes a special effort to mention the additional “people of many walks of life who ... made paleontology blossom” (p. 20). When possible, he seems to try to include wives, for example, highlighting their roles as talented illustrators and collectors, attempting to get away from the men-only paleontology narrative.

The presentation of this book suggests that this is intended to be a very particular type of work: a survey, or introductory read. The text lacks an overall narrative and has a very broad scope. Those looking for a common thread will instead see a series of stories loosely cobbled together. There lacks even a conclusion to draw it all together—we move straight from the triceratops to the index. Each chapter closes, however, with a list of further reading sources and it becomes clear that the intention of this work is to serve as an introduction to each topic.

Some of the strengths of this work are one and the same with its weaknesses, following a familiar pattern observed when histories of science are written by scientists. Therefore, any critique of the text requires an understanding of what purpose this book is to serve—and whom it is for. Because Prothero is not trained as a historian, it is perhaps not surprising that there are certain shortcomings from the perspective of the formal discipline of the history of science. Some of these shortcomings, I will argue, should not necessarily be viewed as such, but instead we must keep in mind the intended audience and purpose of that book: an introductory text for a broad audience. Other shortcomings, I argue, are worth investigating further, regardless of the book's purpose.

One example of a shortcoming that might be seen as relatively minor and merely discipline-specific (yet is still worth mentioning), is the fact that there is little to no mention of larger political, social, and cultural factors that influenced the discoveries and interpretations of these fossils. The focus on the discoverers and their bones stands in stark contrast, for example, to historian of science Lukas Rieppel's book *Assembling the Dinosaur* (2019). Rieppel inspects the relationship between dinosaurs and capitalism, revealing important aspects of funding bodies, politics, and motivations in these dinosaur-hunting endeavors. Thus, he shows that these fossils are inextricably intertwined with their political-economic contexts and

therefore must be viewed within those contexts. Yet again, we find ourselves comparing scholarship in the history of science to a book that is claiming no such thing.

Additionally, Prothero sometimes falls into the trap of repeating well-worn tropes about historical figures and controversies. For example, in this text Richard Owen is painted as an evil character who was evil in part because of his rivalry with Charles Darwin and the fact that Owen was “insanely jealous because his own weird ideas about nature had never gotten any traction” (p. 40). These images of history's bad guys and good guys have been shown in historical literature to be greatly oversimplified, and indeed influenced by factors including who had the power to shape the historical narrative. Therefore, repeating these tropes without any indication of that nuance, does a bit of a disservice to history, flattening it while further entrenching simplistic stereotypes.

While these common snafus are barely criticisms, given that this text does not pretend to be a scholarly work in the history of science, there is one aspect of a lack of historical training that is, I think, troublesome. That is the idea—commonly espoused by scientists who write their own histories—that earlier conceptions, which differ from present-day science, can be explained away as simply “biased.”

The notion of “bias” appears often in Prothero's text, either referring to biblical bias that “preconditioned” scholars to see fossils through religious lenses, or simply to see dinosaurs “incorrectly.” For example, in the nineteenth century “the bias of nearly all paleontologists ... was that dinosaurs were stupid, slow, sluggish monsters” (p. 31). How are we to understand Prothero's meaning of the word bias here? Historians and sociologists of science have long stressed the inaccuracy of claiming wrong ideas as biased and “correct” ideas as unbiased. This “march to the truth” type of narrative is an incorrect way to portray knowledge creation.

In general, this tendency to present history as almost a slideshow of how, exactly, earlier scientists “got it wrong” throughout the book does a disservice to science in general, it seems to me. Arguing that *Megalosaurus* was initially “badly misinterpreted and reconstructed” treats earlier interpretations as unfortunate mishaps, rather than crucial parts of the learning process on which later interpretations (themselves provisional) were built (p. 15). Another example is Owen’s depiction of *Iguanodon*, which was “even worse.” By mocking Owen’s *Iguanodon*—calling it “worse” rather than recognizing it is different from what we envision today, what are we gaining? And is all knowledge not, to some degree, provisional?

There are moments in the text when Prothero is straightforward about the current knowledge of dinosaurs being provisional, and admits that there are things scientists just have not sorted out yet. There is a failure, however, to extend this courtesy to the past. Nature, Prothero tells us, is complex, making it difficult to decipher. Well, so too is history. My question is: what do we gain by looking back, pointing out the “worst” reconstructions, and drawing a line to the present to say, “We have come a long way” (p. 35)?

On the other hand, it is worth examining the other side of the coin: because Prothero is not a historian, he also brings something that many historians cannot: firsthand experience. He brings color to his stories by weaving in his own experience with some of the fossils. And because Prothero is not bogged down in historical nuances, he has the space to weave together a well-illustrated, easy-to-read book that is sprinkled with fun anecdotes—like the fact that *Megalosaurus* was almost saddled with the name “Scrotum humanum.”

This brings us to the interesting question of what purpose this book is supposed to serve, and how we should then evaluate it. I would argue that this is embedded within a larger question of what texts like these mean for the history of science. Surely many of us in the discipline would prefer to

see histories that consider economic and social nuances. However, there have been criticisms that historians’ increasingly narrow intellectual focus is causing a crisis of readership, one that could spell death for the discipline.[1]

Perhaps, then, the history of science can be many things. And this book is one of them. While Prothero’s text might be difficult for historians to read, given the occasional stereotypes and simplifications, might I suggest considering reading it anyway, to open up the realm of what counts as history? Then, perhaps, we can facilitate a conversation about how to better produce a range of scholarship that attracts wide readership yet still does justice to the rich, complex, nuanced history of science.

Note

[1]. Steven Shapin, “Hyperprofessionalism and the Crisis of Readership in the History of Science,” *Isis* 96, no. 2 (2005): 238-43.

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