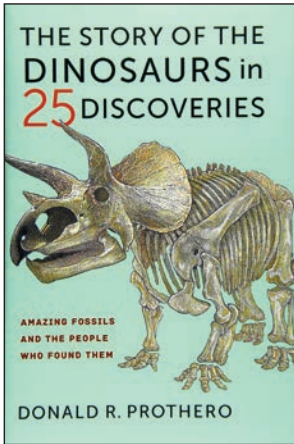




Major dinosaur discoveries in a nutshell



Donald R. Prothero. 2019. *The Story of the Dinosaurs in 25 Discoveries: Amazing Fossils and the People Who Found Them*. 488 pp. Columbia University Press, New York. ISBN 9780231186025 (hardcover). Price \$35.00 / £30.00.

It has been almost two centuries since William Buckland's classic "Notice on the *Megalosaurus* or great Fossil Lizard of Stonesfield" (1824), where he provided the description of a new "Saurian or Lizard" he named *Megalosaurus*, a creature that would later become acknowledged as the very first formally established dinosaur taxon known to science.

Yet, Buckland's passionate writings on his "enormous", "extraordinary", and, as he thought, "probably an amphibious animal" are nothing compared to the ubiquitous excitement that dinosaurs face nowadays.

The book titled "The Story of the Dinosaurs in 25 Discoveries" by Donald R. Prothero captures the excitement extraordinarily. The title suggests that the reader might deal with a list of twenty-five famous dinosaur discoveries, and indeed, even the table of contents, showing each chapter headlined with a name of a dinosaur, fuels such worries a bit. "The world doesn't need another A-to-Z list of dinosaurs", as Thomas R. Holtz (University of Maryland, College Park, USA) famously recalled in his wonderful "Dinosaurs: The Most Complete, Up-to-Date Encyclopedia for Dinosaur Lovers of All Ages", nor does it need any other list of dinosaurs. The world already has enough of them and most repeat themselves anyway. Fortunately, the title of the book and the structure of its table of contents do not advertise the book properly, and, clearly, merely reflect the fact that there have been other similarly-named books published by the Columbia University Press recently: "The Story of Life in 25 Fossils" and "The Story of the Earth in 25 Rocks"; both authored by Donald R. Prothero.

Each of the twenty-five chapters of the book, headlined with a well-known dinosaur, is a combination of an intriguing historical tour and the current science on the group that the dinosaur belongs to. All that is supplemented with the author's competent commentaries. As such, the book does not simply deal with twenty-five discoveries, it is a compilation of knowledge on dinosaurs in general.

The book is primarily intended for non-specialists and the science behind particular topics is often simplified. Some inaccuracies can be spotted too. For example, in Chapter 7, p. 107, Prothero asks, "Is *Brontosaurus* back?" and discusses the history behind *Apatosaurus*, *Brontosaurus*, and the potential synonymy of the two genus names. He further offers his insights into the study of Tschopp et al. (2015) that comprised a detailed taxonomic and phylogenetic reassessment of Diplodocidae. The authors calculated the pairwise phenetic dissimilarity between

particular taxa and found support for the use ("resurrection") of the apatosaurine name *Brontosaurus* that has been generally considered synonymous with *Apatosaurus* since Riggs (1903) and throughout most of the 20th and the earliest 21st century. In his book, Prothero noted (p. 109) that he "is not so sure that this study establishes *Brontosaurus* as a valid name again". He further commented on the sauropod diversity in the Morrison Formation and compared it with that of some large mammals (hyracodontids, rhinocerotids, and brontotheres). He argued, paraphrasing, that the ecology of the Morrison sauropods makes it highly unlikely that such diversity of sauropods would have "had the room or diversity of food sources or habitats to allow so many species to live close together [...]", clearly expressing the opinion that diplodocids are probably oversplit. These comparisons have already gained some attention and were addressed critically (see especially Naish 2020). Prothero concludes his discussion of the Morrison sauropods by stating that he "[reserves] judgment on the Tschopp, Mateus, and Benson study [regarding *Brontosaurus*] until more evidence shows clearly that such a diversity of sauropods is ecologically plausible" and "[regards] Riggs's arguments as still binding". It is essential to note, however, that Riggs (1903) merely synonymized the names (*Brontosaurus* with *Apatosaurus*). The taxa *Apatosaurus excelsus* (originally and currently *Brontosaurus excelsus*) and *Apatosaurus ajax* have remained valid by most authors. Therefore, Tschopp et al. (2015) did not increase the diplodocid diversity by "reviving" *Brontosaurus* for what had long been *Apatosaurus excelsus*.

In summary, being myself, as Donald Prothero puts it, "one of those kids who got hooked on dinosaurs at age four and never grew up", I expected and hoped for a readable journey through the history of dinosaur science. The book certainly offers such journey. I enjoyed reading the book very much and recommend it for all, specialists as well as a general audience.

References

- Buckland, W. 1824. Notice on the *Megalosaurus* or great fossil lizard of Stonesfield. *Transactions of the Geological Society of London, Series 2*, 1: 390–396.
- Naish, D. 2020. Stop Saying That There Are Too Many Sauropod Dinosaurs, Part 2. *Tetrapod Zoology*. Accessed at <http://tetzoo.com/blog/2020/4/19/stop-saying-that-there-are-too-many-sauropod-dinosaurs-part-2> (May 11th, 2021).
- Riggs, E.S. 1903. Structure and relationships of opisthocoelian dinosaurs, part I: *Apatosaurus* Marsh. *Field Columbian Museum Geological Series 2* (4): 165–196.
- Tschopp, E., Mateus, O., and Benson, R.B.J. 2015. A specimen-level phylogenetic analysis and taxonomic revision of Diplodocidae (Dinosauria, Sauropoda). *PeerJ* 3: e857.

Daniel Madzia [daniel.madzia@gmail.com], Institute of Paleobiology, Polish Academy of Sciences, ul. Twarda 51/55, PL 00-818 Warsaw, Poland.