



Dinosaurs Under the Big Sky, by Jack Horner, 2005.
Mountain Press Publishing Company, Missoula,
Montana, 208 p., USD 20.00. ISBN 0-87842-445-8.

Dinosaurs under the Big Sky is a nuts-and-bolts guide to dinosaur fossils found around Montana—where they are, how to identify them, and what do with them. As the author, Jack Horner, states early on, this is the book he wishes he had while growing up and exploring his native state. The passion that Horner has for his field comes across clearly in the book.

It is highly readable and has a relaxed, conversational tone. Overall it is quite accessible to a nonspecialist and provides links to resources for those interested in exploring the scientific research further. Two recurring themes throughout the book are the importance of fossils as scientific evidence, which provide information and insights to life in the past, and science as a process of learning—changing and shifting with new information.

Chapter One covers the practical issues of collecting, getting permission, recording, and documentation, and is followed up in more detail in Chapter Seven on preservation and curation of fossils, and Chapter Eight and Appendix I with details on places to see dinosaurs on display, dig sites, and the agencies responsible for managing land.

Chapter Two gives a brief overview of Montana geology, highlighting key formations of the Mesozoic, the categories of fossilized remains recovered, and the scientific value of each type. Chapter Four provides a more detailed overview of the geological, geographical, and paleoclimatological-environmental histories of the area and how these relate to the different formations and fossils associated with each.

Chapter Three chronicles the history of dinosaur collecting in Montana with a tour of key figures and finds in the area. Chapter Six covers the topic of pseudofossils with an overview of different types, how they formed, and how to tell them apart from the real thing.

Chapter Five is the heart of the book—a field guide to dinosaur fossils found in Montana. This section has numerous illustrations highlighting key features and useful characteristics referred to in the text. There are a couple of things that would have made it more user friendly, namely: (1) directing readers at the beginning to the anatomical details outlined in Appendix

II, as is done prior to the discussion of dinosaur classification and relationships in the introduction. This would be particularly useful for those readers inclined to jump straight to this section, which I suspect would be most readers; and (2) including the orientation on tooth diagrams. The absence of orientation on some diagrams makes it difficult to connect the descriptive text to the illustration when, for example, a key feature is the presence of enamel on only one side.

I would have liked more detailed diagrams in Appendix II, including labeled zygapophyses and transverse processes on vertebrae to relate back to the diagrams and discussion in Chapter Five. It seems a little odd not to have a diagram of the two, especially given the reference to the differences between ornithischian and saurischian pelvis anatomy.

The tooth cross sections used for *Albertosaurus* on pages 113 and 123 are not consistent (one appears to be the oval cross section used for *Daspletosaurus* on page 112). Later, unidentified tyrannosaurid teeth are described as laterally compressed, similar to *Daspletosaurus* and *Tyrannosaurus*. Elsewhere, however, *Daspletosaurus* and *Tyrannosaurus* teeth are referred to as oval or round in contrast to more laterally compressed examples like *Albertosaurus*. The morphology of teeth in the Tyrannosauridae is complex, but that is even more reason for clarity and careful wording for a novice reader.

More details would improve its usability and an expanded glossary that included terms such as tetrapod, sacrum, and vestigial would be helpful, but these aspects do not detract from the appeal of the book. Overall this book is a good read, engaging, and full of interesting information about the dinosaurs of Montana.

Teresa MacDonald
Director of Education
University of Kansas, Natural History Museum
1345 Jayhawk Blvd.
Lawrence, KS 66045-7561 USA
tmacd@ku.edu