

INTRODUCTION

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Throughout the American West, there occurs a thick sequence of mostly fluvial and lacustrine strata that were named the Morrison Formation by Whitman Cross in 1894. The name was derived for sandstones and mudstones lying between the Dakota Formation and Red Beds (now the Lykins Formation) exposed in the Hogback near the town of Morrison, west of Denver, Colorado. In various regions, the names “Atlantosaurus Beds,” “Beulah Shales,” “Como Beds,” “Dakota Beds,” “Flaming Gorge Formation,” “Gunnison Formation,” “Jurassic Beds,” “McElmo Formation,” and “Variegated Beds,” have been applied to these same strata.

The formation has long been known for its spectacular dinosaur skeletons, especially those of the giant sauropods. Indeed, it was the pioneering work of O.C. Marsh and E.D. Cope in the late 1800s that revealed the great diversity of the dinosaur fauna. However, it was the generosity of Andrew Carnegie that made casts of one sauropod, *Diplodocus*, available to many museums throughout the world that dinosaurs became a household word. Even today, tourists from around the world flock to places like Dinosaur National Monument where dinosaur skeletons may be seen *in situ*.

The abundance of dinosaur bones inevitably led to the study of the formation itself. Much of this early work was summarized by Charles Mook

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in his classic "Study of the Morrison Formation" published in 1916. However, the sheer volume of data and the detail of the studies now makes it impossible for one person to study the formation in its entirety. Because of the numerous researchers now focused on some aspect of the Morrison Formation, the Editors felt that the time was right to bring as many of these researchers together to share their information. Thus, the symposium "The Upper Jurassic Morrison Formation: An Interdisciplinary Study" was held at the Denver Museum of Natural History in May 26–28, 1994. Most of the papers in this volume were first presented orally at this symposium.

The papers in this volume, have been arranged by topics that reflect some major aspect of the Morrison Formation. Part I deals with studies on the sedimentology and stratigraphy of the formation. The Part II deals with the geophysical studies, mostly about the age of the formation. Paleoclimatology is presented in Part III. Part IV presents papers on the palynology and paleobotany of the Morrison. Invertebrate body and trace fossils are presented in Part V, while vertebrate body and trace fossils and biostratigraphy are presented in Part VI. Several historical studies about the Morrison are presented in Part VII. Finally, a compilation of all known fauna and floral taxa is presented in the last paper of the volume.

With so many researchers contributing to this volume, disagreement is bound to occur. For example, new radiometric dates presented by Kowallis and others, support palynological, charophyte and ostracod data of Litwin and Schudack that identify the Morrison as Upper Jurassic (latest Oxfordian to earliest Tithonian). However, Bilbey and Aubrey argue separately for a lowermost Cretaceous age for parts of the Morrison on the Colorado Plateau on stratigraphical grounds. Other contributions are less controversial, and provide new, or better data. For example, Hasiotis documents for the first time various invertebrate trace fossils from the Morrison, while McIntosh unravels the mystery surrounding the Cope collection of sauropods from Cañon City.

This volume is not the last word on the Morrison Formation, but presents in one place, the research of many workers. We hope that all of the papers will provoke further thought and research in the years to come.

References

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