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ACTUALISTIC TAPHONOMY IN SOUTH AMERICA

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OLDEST TITANOSAUR EVER FOUND

Ninjatitan zapatai, the earliest known sauropod, is described from the Lower Cretaceous of Patagonia reinforcing the hypothesis of a Gondwanan origin for Titanosauria.

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NEWS FROM THE BAJO DE VÉLIZ FLORA

A whole-frond reconstruction of *Botrychiopsis plantiana* is presented, based on well-preserved specimens from the Paganzo Basin, Argentina.

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ACTUALISTIC TAPHONOMY IN SOUTH AMERICA. *Sergio Martínez, Alejandra Rojas, and Fernanda Cabrera (Eds.)* 2020. 336 pp. Topics in Geobiology, Springer, Switzerland. ISBN 978-3-030-20624-6 (paper). ISBN 978-3-030-20625-3 (ebook).

Taphonomy has come a long way since the 1940s when the term was first coined and since then, taphonomists have emphasized the importance of obtaining new data by studying the patterns and processes of fossilization, instead of worrying only about the loss of biological information—an approach later termed as actualistic taphonomy. With the growing appreciation for the importance of regional difference in taphonomic processes, actualistic taphonomy has gained attention in South America, especially in the "southern cone" (Argentina, Brazil, Uruguay) as evident from numerous articles, books, and conferences in the past years. The new book "*Actualistic Taphonomy in South America*" edited by S. Martínez, A. Rojas, and F. Cabrera provides a comprehensive overview of the status, patterns, applications, and challenges of this discipline in the South American context. This compilation of thirteen chapters, written by 39 authors, represents an extended work that germinated from the workshop on "Actualistic Taphonomy in South America", held in Montevideo (Uruguay) during October 9–11, 2017, organized by the Invertebrate Paleontology & Ichnology Laboratory (Paleontology Department, Facultad de Ciencias, Universidad de la República). All the chapters of the book except one (chapter 8), are based on work in South America and show the amplitude of the actualistic taphonomic studies in the form of detailed reviews, original papers, new ideas and approaches. Multiple case studies encompass a diverse set of aquatic, terrestrial and marine habitats, and target a variety of taxonomic groups including plants, invertebrates, and vertebrates including human remains.

Chapter 1, by F. Erthal and M. Ritter, explores the stratigraphic potential of Southern Brazil Shelf by evaluating the taphonomy of Recent molluscan assemblage. Chapter 2, by A. Rojas and S. Martínez, demonstrates how the biogeographic interpretation be influenced by the mixing of non-contemporaneous assemblages using molluscan death assemblages of the Uruguayan coast. In Chapter 3, F. M. Archuby and A. Roche evaluate the molluscan death assemblage along a depth gradient on a northern Patagonian rocky shore as a reliable proxy of regional biodiversity. In Chapter 4, S. Martínez and colleagues provide an example of how an alien species can be used for determining taphonomic damages after their introduction. Chapter 5, by C. G. De Francesco and colleagues present an in-depth review of the actualistic taphonomic studies on freshwater molluscs including patterns of distribution, live-dead fidelity at various scales and preservation. In Chapter 6, G. S. Hassan and colleagues, review a series of field and experimental studies evaluating the effect of environmental gradients on the taphonomy of diatoms from shallow lakes of Argentina. In Chapter 7, F. Ricardi-Branco and colleagues discuss the taphonomic patterns of plant remains from the meandering rivers of Southeastern Brazil. In Chapter 8, H. Francischini and colleagues describe morphotypes of root traces on vertebrate remains collected from New Mexico, USA and suggest ways in which they can be used as proxies to evaluate taphonomic history. In Chapter 9, L. Beovide and S. Martínez investigate the relative contribution of natural and anthropogenic processes in developing the modern mollusc shells deposit in a beach in Uruguay and evaluated their archaeological implications. In Chapter 10, L. Marchionni examined three archaeological localities of Argentina to assess the influence of local environments on accumulation, dispersal, and preservation of vertebrate bones in an arid continental setting. Chapter 11, by N. A. Scheifler and colleagues present taphonomic observations from different continental environments of Argentina to assess the influence of body-size of vertebrates in controlling the taphonomic processes of their bone assemblages. In Chapter 12, K. Borrazzo reviews the application of actualistic taphonomy in archaeological research pertaining to lithic artifacts

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and evaluates its important role in assessing the cultural versus natural origin of lithic specimens in South America. Finally, Chapter 14, by R. P. Ghilardi and colleagues highlight the effect of energy condition of depositional environment in guiding the taphonomic patterns of shallow marine deposits using molluscan bioclasts from four different regions of southern Brazilian coast.

Although diverse in its content (and often a bit random in its arrangement of the chapters), the book is successful in bringing out the present status of actualistic taphonomic research in South America. This compilation also highlights the importance of regional nature of taphonomic processes in evaluating fossil deposits. In summary, *Actualistic Taphonomy in South America* represents a really good book worth reading by anyone interested in taphonomy, paleontology, ecology, or archaeology of South America. I feel that it will serve as a primary reference for new researchers working on the taphonomic record of South American flora and fauna for years to come.

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