

Book Reviews

SPENCER, G. LUCAS [Ed.] (2010): The Triassic Timescale. – Geological Society, Spec. Publ. 334, 514 pgs., ill., London. ISBN: 978-1-86239-296-0; £ 120.00.

This recently published book “reviews the state-of-the-art of the Triassic timescale” (p. 2). After an introduction by the editor 14 chapters deal with the wide range of (bio)stratigraphy and the present day situation of the broad research aiming for a better definition of the triassic timescale.

In fact the 50-million-year-long Triassic period is a major juncture in Earth history at the beginning of the Mesozoic. At this time the vast Pangaeon supercontinent was completed and then step by step transgressed by the shallow marine realm of the Tethys. The continuous transgression and deepening of the Tethys was the basis for a lot of global biota, which diversified and modernized after the end-Permian mass extinction. Many of them, such as conodonts, ammonoids or bivalves are used for worldwide correlation and biostratigraphy.

Each of the chapters gives a historical overview before introducing the present situation and finally showing the necessity of future research. Although the subdivision of the Triassic into series (Lower, Middle, Upper) has never been debated since the 19th century, much discussion arose about stages and especially substages (see the chapter: Spencer G. LUCAS: “The Triassic timescale: an introduction”).

All details from the first mentioning of the word “Trias” by Friedrich von Alberti in 1834 are explained in the second contribution by LUCAS (“The Triassic chronostratigraphic scale: history and status”). There is a special focus on the Alpine marine Triassic and its most important researcher of the 19th century, Eduard v. Mojsisovics (1839–1907). Mojsisovics published his ideas in a series of huge monographs within the “Abhandlungen der k.k. geologischen Reichsanstalt”. There he did not only describe Alpine ammonoids, but also ammonoids from Siberia and many other countries. Besides Mojsisovics Leonard F. Spath (1888–1957) from the British Museum and E.T. Tozer (*1928) from Canada were the most important contributors for triassic stratigraphic subdivisions.

The next chapters, like those from Roland MUNDIL, Jozsef PÁLFY, Paul R. RENNE & Peter BRACK (“The Triassic timescale: new constraints and a review of geochronological data”) or from Mark W. HOUNSLOW & Giovanni MUTTONI (“The geomagnetic polarity timescale for the Triassic: linkage to stage boundary definitions”) and finally the two con-

tributions from Lawrence H. TANNER (“The Triassic isotope record” and “Cyclostratigraphic record of the Triassic: a critical examination”) deal with some abiotic aspects of Triassic stratigraphy.

The major part of the book focuses on biostratigraphic aspects of the Triassic starting at page 139 with microfossils. Michael J. ORCHARD describes “Triassic conodonts and their role in stage boundary definition”. In seven plates important key conodonts are figured, thus helping stratigraphic workers to distinguish the most important microfossils of the Triassic. Luis O'DOHERTY, Elizabeth S. CARTER, Spela GORICAN & Paulian DUMITRICA show “Triassic radiolarian biostratigraphy” in detail.

Macrofossils are described by Christopher A. MCROBERTS (“Biochronology of Triassic bivalves”). Marco BALINI, Spencer G. LUCAS, James F. JENKS & Justin A. SPIELMANN deal with the most classic group of Triassic fossils, the cephalopods (“Triassic ammonoid biostratigraphy: an overview”). Heinz W. KOZUR & Robert E. WEEMS point out their work (p. 315–417) “The biostratigraphic importance of conchostacans in the continental Triassic of the northern hemisphere”.

The field of palynology is represented by the contributions of Wolfram M. KÜRSCHNER & G.F. WALDEMAAR HERNGREEN (“Triassic palynology of central and northwestern Europe: a review of palynofloral diversity patterns and biostratigraphic subdivisions”) and Simonetta CIRILLI (“Upper Triassic – lowermost Jurassic palynology and palynostratigraphy: a review”).

Finally Hendrik KLEIN & Spencer G. LUCAS show aspects of “Tetrapod footprints – their use in biostratigraphy and biochronology of the Triassic”. The title of the last chapter by Spencer G. LUCAS might sound like pointing at a rather young aspect of future research: “The Triassic timescale based on nonmarine tetrapod biostratigraphy and biochronology”.

In conclusion: An excellent overview of the current research situation of Triassic stratigraphy. The whole book (514 pages), as well as each of the single contributions show the development of research from the 19th century up to the 21st century. The huge number of references will help researchers find easy access to literature. Congratulations to the team of contributors and to those whose works are cited within the references!

THOMAS HOFMANN

Peter K. SWART (Ed.), Gregor EBERLI (Ed.) & Judith A. McKenzie (Ed.): Perspectives in Carbonate Geology. – Int. Ass. of Sedimentologists (IAS), Spec. Publ. 41, Wiley-Blackwell, 387 pgs, ill., 2009, ISBN: 978-1-4051-9380-1, € 92.00.

The full title of this book – “Perspectives in Carbonate Geology: a tribute to the Career of Robert Nathan Ginsburg” – makes clear, that a great variety of works / contributions are included. Thus this volume comprises 22 scientific papers dedicated from more than 50 authors to one of the most important researchers in carbonate sedimentology. The articles were mostly presented at a symposium to honor the 80th birthday of Robert N. Ginsburg at the meeting of the Geological Society of America (GSA) in Salt Lake City in 2005. The majority of the papers are connected with the study of modern carbonate sediments. Robert N. Ginsburg was one of the pioneers using the concept of comparative sedimentology, by using the modern to compare to and relate to and understand the ancient. These studies are concerned with his favorite fields: coral reefs and sea-level; submarine cementation and formation of beach rock; surface sediments on the Great Bahama Bank and other platforms; origin of ooids; coastal sediments; formation of stromatolites; impact of storms on sediments, and the formation of dolomite.

The works have a wide thematic and stratigraphic range. The book starts with works focusing on the situation of reefs (*Depth-related and species-related patterns of Holocene reef accretion in the Caribbean and western Atlantic: a critical assessment of existing models*) and concentrates on the Bahamas with a number of articles like: *A re-evaluation of facies on Great Bahama Bank I: new facies maps of western Great Bahama Bank* or *A re-evaluation of facies on Great Bahama Bank II: variations in the $\Delta^{13}\text{C}$, $\Delta^{18}\text{O}$ and mineralogy of surface sediments*). Another aspect focuses on the

recent destruction by hurricanes (*A tale of two storms: an integrated field, remote sensing and modelling study examining the impact of hurricanes Frances and Jeanne on carbonate systems, Bahamas*).

But not only articles dealing with the Bahamas are included in this opus; some deal with Australia (*Calcareous epiphyte production in cool-water carbonate seagrass depositional environments – southern Australia*) others with the situation in Brazil (*Microbial dolomite precipitation under aerobic conditions: results from Brejo do Espinho Lagoon (Brazil) and culture experiments*).

Although there is a focus in recent carbonate sedimentology, there are also articles building a bridge between the present and the past (*Markov models for linking environments and facies in space and time (recent Arabian Gulf, Miocene Paratethys)*) and some others dealing with the geological past like the Tertiary (*Karst sub-basins and their relationship to the transport of Tertiary siliciclastic sediments on the Florida Platform*), the Mesozoic in Switzerland (*Controls on facies mosaics of carbonate platforms: a case study from the Oxfordian of the Swiss Jura*) or in the Dolomites (*The allocyclic interpretation of the “Latemar Cycles” (Middle Triassic, the Dolomites, Italy) and implications for high-frequency cyclostratigraphic forcing*). But even the Paleozoic (*The Cincinnati Arch: a stationary peripheral bulge during the Late Ordovician*) and the Proterozoic (*Reinterpreting a Proterozoic enigma: Conophyton–Jacutophyton stromatolites of the Mesoproterozoic Atar Group, Mauritania*) are represented in this book.

The title of the article “Layering: what does it mean?” is a reminder of a personal comment of Ginsburg some 40 years. He turns out to be “a master at asking the right, mostly simple questions (What? Why? So What?) after making observations”, as Wolfgang Schlager characterizes Ginsburg in his dedication at the beginning of the book.

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