

Book Review

Global Karst Correlation (IGCP 299)

Yuan Daoxian and Liu Zaihua (eds.) (1998). Science Press Beijing and VSP Utrecht: 308 pp., 69 pictures (19 b/w), 4 Appendices.

This book represents the final report of the International Geological Correlation Program (UNESCO/IUGS), Project 299 (IGCP299): Geology, climate, hydrology and karst formations.

Chapter 1 deals essentially with the basic ideas, methodologies and major results of the IGCP 299. After a short background presentation the goals of this project are highlighted as follows:

- to identify the global differences in karst features that appear on various geological, hydrological and climatic settings, and to clarify the regularities of their distribution;
- to reconstruct the palaeoenvironment and palaeoclimate changes from karst records;
- management of karst areas (evaluation, prediction, exploitation of natural resources) and environmental protection of various karst areas.

Chapter 2 deals specifically with the basic physical and chemical principles determining karstification in both the initial and the mature state of karst. The aim of this chapter is to underline the reasons for which karst landscapes developed on different geo-morphoclimatic regions, which results in such a large variety of forms and features. In order to accomplish this goal, the authors discuss several physico-chemical models showing how karst processes are driven by chemical, physical and hydrogeologic forces.

Chapters 3 through 14 offer up-to-date coverage on various karst aspects concerning some of the most important karst regions of the world (China, Great Britain, eastern United States, Slovenia, Romania, Japan, Vietnam,

Australia and New Guinea, Ural Mountains, Brazil, Spitsbergen and the Baltic Republics). For each of these regions, the authors emphasize their particular geology and hydrogeology as well as many extensive updated and critically evaluated Quaternary climatic data inferred from cave deposits. Worked examples, both fundamental and applied, presented alongside numerous figures and tables, make the text clear and concise. Most chapters include expanded and in-depth treatment of subjects such as resources and environmental problems in karst areas.

Chapter 15 provides an extensive presentation of high-resolution records of climatic variations and solar forcing inferred from the luminescence of speleothems. Based on analyses performed on samples from three caves (Coldwater, USA; Rats Nest, Canada; and Duhlata, Bulgaria) the authors stress that the temporal resolution of the method is 10^3 - 10^4 times greater than any other used so far for terrestrial paleoclimatic reconstruction.

The final chapter of the book presents a few perspectives for karst science, including the application of earth system science in karst studies, karst proxies used for global change studies, karst development on different environments and sustainable development for various karst environmental systems.

In short, this book is a comprehensive, updated overview of several well-known karst regions of the world that provides an impressive informational database. This will enable scientists to perform geomorphologic, hydrologic and climatic correlations throughout different karst regions on the Earth.

Reviewed by: Bogdan Petroniu Onac, A7 Materials Research Laboratory, The Pennsylvania State University, University Park, PA 16802-4801, bonac@bioe.ubbcluj.ro

Shannon Knapp

Shannon grew up in San Diego, California. She majored in Biology at American University in Washington, DC, where she began caving and studying cave critters with Dan Fong. Shannon is currently studying terrestrial salamanders for her MS in Wildlife at Virginia Tech, and occasionally still gets underground in West Virginia.



Daniel Fong

Dan has been working on various aspects of cave biology since 1980. He received his PhD at Northwestern University where he worked with Dave Culver. He is currently Associate Professor of Biology at American University, where he conducts research on the ecology and evolution of cave organisms.



Louise D. Hose, PhD, directs the Environmental Studies Program at Westminster College in Fulton, Missouri. A geologist, she has explored and studied caves in Mexico for over 25 years. She currently coordinates the scientific investigations for the NSS's Caves of Tabasco Project.

James A. Pisarowicz, PhD, is a park ranger at Wind Cave National Park in Hot Springs, South Dakota. He is a Lew Bicking Awardee, NSS Fellow, and is the director of the NSS's Caves of Tabasco Project.

Dr. Bogdan P. Onac is an Associate Professor in the Department of Mineralogy, University of Cluj (Romania), where he teaches crystallography and karstology. He also holds an appointment as a senior researcher at the Speleological Institute "Emil Racovita" (Cluj) of the Romanian Academy of Sciences. His fields of interest are cave mineralogy and crystallography as well as reconstruction of Quaternary paleoclimate and palaeoenvironment based on speleothems.

Stein-Erik Lauritzen is associate professor of geology at the University of Bergen, Norway, but was first educated as an organic synthetic chemist. However, since the early 1970s he has been interested in caves and caving and has done cave-related research (apart from Norway) in North America, the Caribbean, central and eastern Europe, Spitzbergen, China and Australia. He is running a uranium-series dating and isotope laboratory in Bergen, and his main interests are the use of speleothem and cave sediment stratigraphy in paleoclimatic research, cave geomorphology and speleogenesis, as well as environmental aspects of karst.