

ENCYCLOPEDIA OF CAVES AND KARST SCIENCE

John Gunn, Editor with Board of Advisers: Andrew Chamberlain, Emily Davis, Derek Ford, David Gillieson, William Halliday, Elery Hamilton-Smith, Alexander Klimchouk, David Lowe, Arthur Palmer, Trevor Shaw, Boris Sket, Tony Waltham, Paul Williams, and Paul Wood. First Edition (2004). Routledge Taylor and Francis Group. Routledge, New York, NY, 902 p. ISBN 1579583997. \$150 (US) and \$225 (CAN). Order on-line at <http://www.routledge-ny.com/books.cfm?isbn=1579583997>.

Also available on-line at <http://www.Amazon.com> for \$200 (US) with 24-hour shipping. Amazon also had “5 used & new from \$167.69” (US) at the time of this writing. (Actually four of the five were listed as new and only one of the five was listed as “like new” but I can’t comprehend why anyone wouldn’t keep this book after purchasing a copy!)

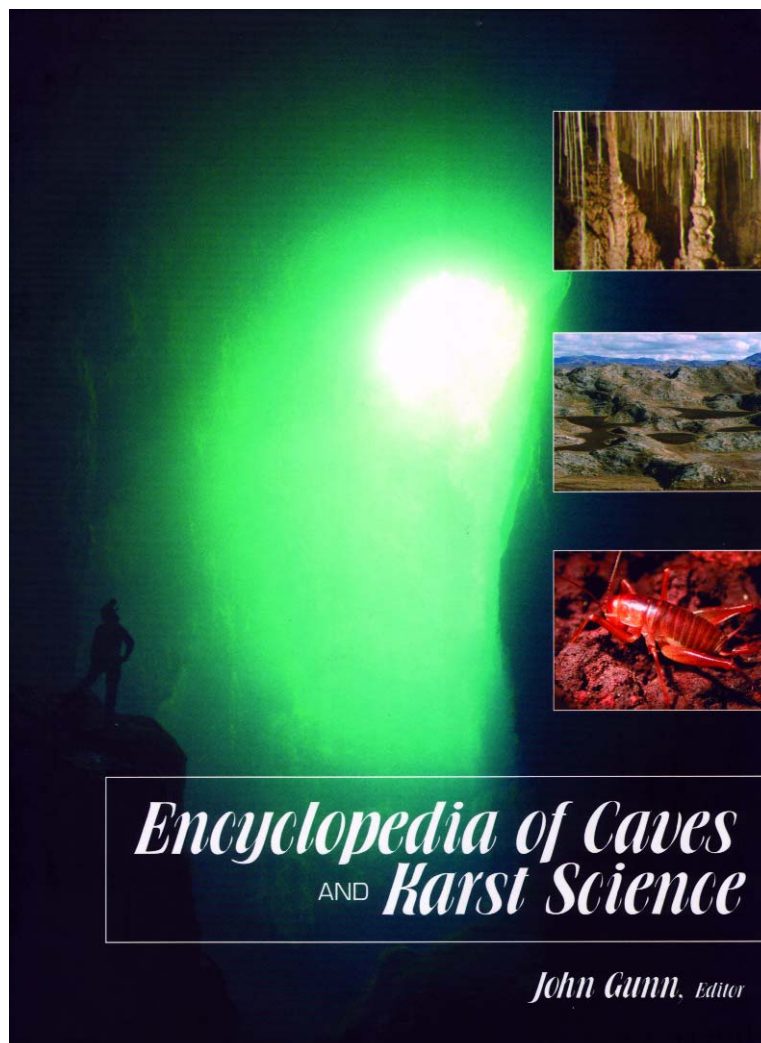
Encyclopedia of Caves and Karst Science, published in 2004, is a significant addition to the subject of karst in all its various forms and one which the Editor, Board of Advisers, and various authors (who too numerous to mention here) should be proud. This monograph contains over 350 entries (353 according to Mixon 2004, p. 89) and over 500 black-and-white photographs, maps, diagrams, and tables. Fifty-one color photographs are grouped together near the middle of the encyclopedia. All photographs, maps, and diagrams are very clear and relevant to the text, so that clarity is added to material that is difficult to explain, although some diagrams (e.g., Fig. 1 and 2 under the heading “Chemistry of Natural Karst Waters”) may be confusing to non-specialists but not greatly so.

According to the Editor’s Introduction, “This is the first encyclopedia on the subject of Caves and Karst Science and provides a unique, comprehensive, and authoritative reference source that can be used both by subject-specialists who wish to obtain information from outside of their immediate area of knowledge and by non-specialists who wish to gain an understanding of the diverse and multi-disciplinary nature of caves and karst science.” This introductory statement by the Editor basically says it all; if you want to learn something new about almost any aspect of caves and karst, you will most likely find it in this monograph.

Although not intended as a geographical atlas, the encyclopedia does address scientifically important karst areas at the continent, country, region and/or site-specific level. In terms of karst science, it addresses “archaeology, biology, chemistry, ecology, geology, geomorphology, history, hydrology, paleontology, physics as well as exploration, survey, photography, literature, and art.” (As with any undertaking of this nature there are always going to be some omissions and errors.) The breadth and scope of the coverage of subcategories of general science in the encyclopedia is a significant accomplishment.

As pointed out by Mixon (2004, p. 89), the 202 authors from 36 countries developed exceptionally readable entries which further lends credit to the level of effort by the editor. The articles are relatively short as would be expected for an encyclopedia—one

to several pages of two-column 9-point type. Each article ends with a bibliography listed as “works cited” or “further reading” which is probably appropriate for an encyclopedia and for non-scientists, but as a professional scientist, I would have looked



for more formal detailed citation/reference list typical of scientific work. However, if a typical scientific citation/reference list had been chosen, then this monograph would probably have increased in length by a factor of 10 or greater. Given the impossibility of such an increase in length and the bibliographic sources listings, I am quite satisfied at being able to find those references that most interest me.

An interesting and appropriate aspect of this monograph is the importance placed on exploration and basic science. The study of caves and karst is unique in that cave exploration and science are complementary, which draws individuals from extremely diverse backgrounds together to discuss new findings or new thoughts on older ideas. To integrate exploration and science, the Board of Advisers spent considerable time and energy developing and revising a list of the "world's important karst areas and most important caves." Having developed this list, the Board of Advisers then drew up a list of "topical entries considered to be of primary importance to their particular branch of science." This undertaking has resulted in a good mix of exploration and science, although interested readers will need to do some searching in the "Alphabetic List of Entries," "Thematic List of Entries," and/or index (93 pages) to locate all of the items of interest.

Many of the exploration and scientific entries may require some extra effort by the reader to fully understand the material presented if the subject entry is not a specialty of the reader. For example, entries such as the "Encantado, Sistema del Rio, Puerto Rico," "Krubera Cave, Georgia," "Peak District, England" and other foreign cave and/or karst entries use some geological terms and locality-specific terms that may be unfamiliar to some readers. For the most part, however, the exploration entries are pretty straightforward. The scientific entries are also fairly readable but may be somewhat more difficult for non-specialists. For example, the entry "Dissolution: Carbonate Rocks" and "Dissolution: Evaporite Rocks" necessarily include discussions of the physics and chemistry of dissolution kinetics of carbonates and evaporites.

One aspect not readily apparent from the title of this monograph or from the introduction, or flyers announcing its availability, is the inclusion of a significant amount of non-exploration and non-science material. For example, a discussion of "Journals on Caves" with source availability was compiled with a discussion covering two pages. This entry is quite useful for scientists and non-scientists alike because the subject of caves and karst is very diverse, with small publishing groups spread far-and-wide. A somewhat stranger entry is "Caves in Fiction" which chronicles the history of stories revolving around caves and which falls into the non-science material. "Art Showing Caves" is a similarly strange entry.

So what about omissions and errors? As mentioned above, such was bound to occur in an undertaking of this magnitude. According to Mixon (2004, p. 89), an error occurs in the "America, Central" entry in which some Mexican caves were mislocated on the area map, as well as some confusion over when cave research began in Mexico. There are perhaps more errors of this sort but I suspect not many.

Omissions are a minor issue as well. Invariably at any given time, any particular reader will be frustrated that a specific subject of interest to that reader may not have been included in the encyclopedia. Given the immensity of this undertaking and the need to find authoritative authors for each subject entry while keeping the monograph to a "manageable" size, it was necessary that some topics be excluded. For example, I was unable to locate an entry addressing the epikarstic (subcutaneous) zone. I scoured the encyclopedia but the only discussion I could find on the epikarstic zone occurred under the heading "Dolines" and brief mention under the headings "Groundwater in Karst" and "Groundwater in Karst: Conceptual Models." In all likelihood the epikarstic zone is probably addressed in other parts of this monograph, but it should have had its own entry.

Overall I feel that this encyclopedia is a must purchase for anyone with more than a passing interest in caves and karst, including the non-science entries much of which I found to be interesting reading. It contains a wealth of information that far outweighs its \$150 price tag (\$225 Canadian) and its relatively insignificant "problem" areas. Students, researchers, cavers, geotechnical consultants, and environmental professionals will all consider this book well worth the purchase price.

REFERENCES

Mixon B. 2004, Review of Encyclopedia of Caves and Karst Science, NSS News, National Speleological Society, p. 89.

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