sources management, and environmental policy. Individuals concerned about current environmental issues are presented with an unbiased account of the current status of renewable resources in America.—EUGENE F. KELLY, Dep. of Agronomy, Colorado State University, Ft. Collins, CO 80523.

Geraghty & Miller's Groundwater Bibliography, Fifth Edition


First published in 1971, Geraghty & Miller's Groundwater Bibliography has become a standard reference that every person involved in sciences related to groundwater will find useful. The 5th edition contains about 4760 non-annotated citations grouped into 29 subjects under 81 headings. An incomplete list of the subjects covered in the book contains: history and development of groundwater hydrology, geophysical investigations, springs, theory of groundwater flow, tracers, salt-water intrusion, water quality, modeling, groundwater management/economics, and even water witching. Also listed are general bibliographies (32 entries); journals, bulletins, and newsletters pertaining to groundwater (50 entries); and textbooks, handbooks, and dictionaries (131 entries). Citations under each heading are listed alphabetically by author. An author index has been added to the back of the book for those who wish to look for a citation by a particular author rather than by subject.

For those who already have the 4th edition, the 5th edition has, by an unofficial count, 624 new listings, and 16 citations have been deleted. In addition to the author index, five new headings have been added: fracture network modeling, subsurface mining, statistics, expert testimony, and groundwater dams. The section on statistics is misplaced under the subject of subsurface disposal/deep well injection. Curiously, the author in his foreword claims there are 31 subjects and 5600 entries in the 5th edition, which is considerably more than actually appear in the book.

Despite this discrepancy, the Groundwater Bibliography contains complete, accurate citations of classic and important papers pertaining to almost every topic imaginable related to groundwater. As stated by the author in the foreword, these citations are by no means complete; however, they do provide a valuable starting point for any new research project.—BRUCE R. HENSEL, Illinois State Geological Survey, Champaign, IL 61801 (currently, Science & Technology Management, Inc., 2511 N 124th Street, Brookfield, WI 53005).

Encyclopedia of Earth System Science, Volumes 1–4

Edited by William A. Nierenberg, Academic Press, 1250 Sixth Avenue, San Diego, CA 92101. 1991. 2500 p. Vol. 1 and 2, $475.00; Vol. 3 and 4, $475.00; total, $950.00. ISBN 0-12-226720-6 through 0-12-226721-4.

This four-volume set is a contemporary, comprehensive, well-presented, and very impressive contribution to summarizing the understanding of many scientific and environmental issues. The philosophy of the encyclopedia is to present the basic earth sciences as an integrated system with interactive processes and interdependencies. The strength of the set is in the quality of the writing and both the breadth and depth of the science presented. There are more than 230 articles, 1300 illustrations, 2500 pages, and 1600 bibliographic entries. Each article is followed by a glossary of any unusual or important terms used in the article. The encyclopedia treats subjects in a wide variety of the earth sciences, including atmospheric sciences, geology, hydrology, oceanography, ecology, biogeochemistry, glaciology, and a number of other fields. As with any new book published, the reviewer comments in the promotional literature have been excellent. Upon reading several chapters in my area of expertise, I quickly discovered that I agreed with these assessments, as the material was factual, concise, and clearly presented, with enough depth to inform the reader on the essential science of the issue. The presentation was educational without being excessively pedagogic. I read on further and found myself enjoying other, related chapters, which are titled to facilitate locating a particular subject, for example “Water, Physical Properties and Structure,” “Water Cycle, Global,” “Weather Prediction, Numerical,” “Tidal Hydrodynamics, Quantitative Aspects.” At the end of each volume, there is a very extensive subject index. In all respects, this encyclopedia consists of very professional work, whether it be measured in terms of the science, the editing or the publication quality. I would recommend it highly as a component of any environmental science library.

After delivering all the above praise, I must now point out that the encyclopedia is nearly prohibitively expensive for individuals. The first two volumes are priced at $475, and the second two volumes for an additional $475. This probably will limit sales to only university and public libraries, and to those few high school libraries with enough resources to purchase it. This is a shame, as I can imagine much interest in ownership of this set from individual scientists and teachers who might wish to have a set available for their own regular use. However, few such instances of private ownership will probably occur under the above pricing. The high cost does not diminish the encyclopedia’s impressive contribution, but it will probably limit its sales and availability.—R.J. WAGENET, Dep. of Soil, Crop and Atmospheric Sciences, 235 Emerson Hall, Cornell University, Ithaca, NY 14853.