

Book Reviews

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PHYSICAL GEOLOGY

Fire Under the Sea. By Joseph Cone. 1991. William Morrow and Company, Inc. (1350 Avenue of the Americas, New York City, NY 10019). 287 pp. Cloth \$25.



If you have remained unaware of the explosion of knowledge about plate tectonics and seafloor spreading in physical geology that has gone on for the last 30 years, this is a book for you. If you already know about these topics, but you are not familiar with the communities residing around the hot springs of the East Pacific Rise, this is still a book for you. If you have remained current in both these fields of study, but you really like a nonfiction book that is as good as any mystery novel, then this is still a book for you. But if you're not the slightest bit interested in human experience, the ebb and flow of scientific understanding, or the development of new and often controversial hypotheses, you should not bother to read this book.

Fire Under the Sea is about more than plate tectonics, seafloor spreading, hot springs and communities based on chemosynthesis. It is about the discovery of one of the most extraordinary environments on Earth. And although each of the preceding topics is discussed in some detail, the real story is about the human experiences that occur when poorly understood areas are explored for the first time. Joseph Cone does a stunning job of enthraling the reader about dives aboard the submarine, *Alvin*, by introducing all the principles associated with the dive.

Written for a general audience, the book is equally interesting for teachers and students of biology. In a way that is guaranteed to interest anyone who wants to know how science is really done, Cone writes as if the reader and he are both at the scene when the discoveries and arguments occur. The author maintains this feeling by employing a smooth writing style combined with a keen sense of what is important to the presentation.

Accuracy is a major strength of Cone's presentation. Eleven pages of notes listed by chapter, page and key words are presented at the back of the book. An additional 11 pages of works are cited. Finally, 71 people were interviewed and the conversations with these people make up the bulk of the text. In short, the attention to detail and accuracy are two hallmarks of the book.

Teachers who are interested in giving their students insight into the history of science and how new theories emerge would do well to assign this book for required reading. Further, if you want your students to understand how science proceeds in fits and starts, the book provides some excellent examples. I always ask students to read a nonfiction science book for pleasure, and this one will serve that assignment admirably.

There are two primary strengths of this book—humanness and completeness. Without the human quality that the author captures so exquisitely, this book would be nothing more than a dry and obscure volume to clutter the bookcase of an oceanographer. Because the characters are brought to life by the carefully chosen conversations and ideas presented, the book is lifted from the dull to the exciting. All of us wish we could be present for some important discovery, and this book allows us the opportunity to come as close as most of us will ever get.

The 18 color illustrations that are bound into the middle of the book are very good and have excellent captions. However, the paucity of illustrations is the primary weakness of the book. I should think that the author would have been able to obtain more photographs—especially of some of the creatures living around the hot springs. Otherwise, there is very little for one to complain about.

There have been few books written about the hot spring communities of the Pacific Ocean. Among those that I have seen, this is by far the most interesting account. If for no other reason than to vicariously revel in the quest of others who have done what

for so long seemed impossible, you ought to read this book.

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EDIBLE WILD PLANTS

Plantworks: A Wild Plant Cookbook, Field Guide and Activity Book for the Novice and Naturalist. By Karen Shanberg and Stan Tekiela. 1991. Adventure Publications. (Box 269, Cambridge, MN 55008). 159 pp. 15 by 20 cm. Paper \$12.95.



This innovative and user-friendly resource book on edible wild plants is part field guide, part cookbook and part activity book. Fifteen wild plants common in the continental U.S. are featured, including dandelion, oak, wild grape, wild rose, common plantain and cattail. The natural history of these 15 plants is examined, and the plants are used in 54 recipes. The book concludes with more than two dozen plant nature activities.

The recipes are given first and fill about half the book. They are grouped by preparation method: skillet, oven, stove or no cooking required. Dishes include lucky red clover fritters, acorn pancakes, sweet basswood jelly, fresh nettle fettucine, sumac summer refresher, pickled purslane, hearty curled dock soup and cattail "corn" on the cob. Each recipe is clearly marked with cost, preparation time, season when the plant can be collected and where it can be found, and the pages where natural history and activities linked to the plant are discussed. Typical cooking measures are used, e.g. teaspoons and cups. There is an emphasis on positive plant identification and conservation when collecting wild plants, such as collecting only one in 10.

The natural histories are two pages per plant and include color photos, line drawings and text for identification along with habitat descriptions and recipes featuring the plant. The descriptions are not technical but

should enable positive identification. Additional information about each plant varies among species but includes plant vitamin content, economic uses, place of origin, harvesting tips and folk uses.

The activities are of three types. Hiking activities include bingo, leaf rubbings and predict the pollinator. Activities for the wait during cooking include a crossword puzzle, scrambled words and leaf coloring. The extended activities are mostly for ages 8 or 9 and up. They include a mini-plant press, potpourri and chocolate leaves. The activities emphasize use of natural or recycled materials.

The book also has a glossary of plant terms, a bibliography, an index, directions for drying plants, two pages of plant facts and tips on organizing a group outing. Both authors are naturalists who have been active in teaching about edible wild plants.

While the activities are mostly for elementary age children, the recipes and natural history sections would be applicable at any level. One way to utilize this material in a high school setting would be to collect the plants in biology class and use them in recipes during a home economics class.

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HISTORY OF MEDICINE

Life Before Birth: Reflections on the Embryo Debate. By Robert Edwards. 1990. Basic Books, Inc. (10 East 53rd St., New York, NY 10022). 186 pp. Hardback \$21.95.



"1978. It's not really very long ago, but it seems so to me. Those last anxious weeks of waiting, in July 1978, for the birth of Mr. and Mrs. John Brown's baby seem like another lifetime, another world. We waited, the Browns and our tiny medical team, Jean, Patrick and I, counting the days and biting our nails. And the press waited too, cluttering the hospital corridors, virtually camping in the grounds, for word had got out about this very special pregnancy and each reporter was determined to be first with the exciting news and pictures. (p.1).

In this opening paragraph, Robert Edwards sets the tone of this very personal and dramatic account of the events, personalities and controversies involved in the beginning of a new era in human reproductive tech-

nology. As a member of the team that was responsible for the first "test-tube" baby, Edwards is eminently qualified to write on this subject. His broad-ranging book is part history, part autobiography, part science and part philosophy, ethics and religion. His stated goal is "to provide a frank account of . . . the science of embryology and its many applications. . . together with its implications for humanity, the ethical questions it raises and the political and legal decisions it makes necessary." (p. xi).

Convinced that scientists have an obligation to inform and interpret for the public, he pursues this goal with the enthusiasm of a person with a mission. With obvious pride in his accomplishments and contributions and with a firm belief that advances in reproductive science are good, he skillfully combines his scientific knowledge and unique experiences to produce a thought-provoking and informative book.

The first part of the book focuses primarily on Edward's personal experiences in the 70s and 80s. Beginning with the chapter "Going It Alone," he describes the early struggles that he and his colleagues faced in getting support, both financial and social, for their work. He highlights the media attention, which was often unfair or inaccurate, surrounding the birth of Louise Brown. This is followed by the chapter, "Why Bother with Infertility," in which he acknowledges the concerns of those "who worry about devoting expensive resources to complicated procedures for curing infertility when too many children are being born anyway." (p. 23). However, he goes on vigorously to defend and justify this work with somewhat curious logic: "They [infertile persons] must receive treatment if they ask for it because great dangers lurk in restriction or withholding of any medical procedure on grounds of religion, or expense, or anything else. If the access of my patients to a remedy is impaired, so might the access of others be, with different illnesses." (p. 31). One can hardly be surprised that Edwards is an enthusiastic advocate of therapy for infertility, but this enthusiasm seems to occasionally obscure his reasoning.

The most technical, but still easily understood, chapter is the one titled "The Human Embryo," in which questions about what actually constitutes an embryo and when life begins are considered along with the various methods for donating and storing

eggs, sperm and embryos. The section of this chapter that discusses research on embryos especially reveals Edward's own bias when he writes, "Undeniably, research on human embryos is still desperately needed, and for many purposes." (p. 72). He further supports the necessity for such research by characterizing the consequences of developmental problems in negative terms, such as those describing embryos with chromosome abnormalities: . . . "occasionally one survives, to be born tragically impaired" . . . to "begin their short, forlorn lives," and "a few form severely abnormal children, doomed to a year or two of wretched life." (p. 73). His predictions of the potential good resulting from embryo research continue his advocacy of this activity when he says, "A future medicine can easily be imagined. Rows and rows of stem cells, deep-frozen, waiting to fight our cancers, to restore our paling blood or repair our fading brains . . . or possibly fighting the ravages of old age." (p. 81).

The last chapters of the book deal with many of the ethical, religious and legal issues associated with the "reproduction revolution" and include a separate chapter on questions related to surrogacy. Although these are somewhat diffuse discussions, they do serve to raise consciousness and impress one with the immense complexities of the issues involved. Edwards seems to make a sincere effort to "internationalize" his discussions; however, much of what he says is rather specific to British interests, even to the extent of analyzing personalities of specific members of Parliament!

One would not select this book for "cutting edge" scientific information, as the field of reproductive technology is changing too rapidly. Nor would one find this a particularly objective or thorough review of ethical, religious or legal issues. However, one would want to read *Life Before Birth* for a fascinating historical account of an exciting and confusing time in biomedical history. Illustrated with memorable photographs of some of these events, and written with intense feeling and keen insight by one of the actual participants, it provides an appreciation for the significant scientific accomplishments as well as the real life drama of the persons involved.

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