

(common observations) to creating an impartiality to science. The links among thought styles (how a particular group of scientists view problems and theory in their field), scientific collectives (groups of scientists), and scientific research present a new way of viewing the process and products of science in a sociological context. A context that helps us understand that what we know is in part a function of who works, studies, or has lunch with whom.

Grinnell's view of the doing of science is not the traditional textbook view of an objective activity; it is a view of science as a human activity. As such, the doing of science is shown to be subject to the forces that influence other human activities. In addition, Grinnell contrasts science with other human activities such as politics and religion.

This short book should be read by biology teachers who want to understand a scientist's view of what it means to do science.

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## PROJECTS

### SCIENCE PROJECTS - A MODULAR APPROACH

by Mike Farmer. 2nd ed., 1986. Applied Educational Technology (P.O. Box 193, Tigerville, SC 29688). 52 p. softback. \$7.50 single copies, \$5 in lots of 20.

Any teacher interested in having students participate in science projects should have a copy of this book. It guides the student through nine steps required to successfully complete a project and provides worksheets after each step to keep the teacher apprised of the students' progress. The main theme of this spiral bound manual is to encourage the application of the scientific method in solving problems the students have selected.

Each of the nine steps—such as "Have a Purpose" and "Write Final Paper"—are fully outlined and explained. To encourage ideas, a list of resources and potential topics are presented in the text and/or appendix. The importance of library research in helping to define the problem is clearly outlined. Before the experiment is begun, exactness of terminology is insisted upon by including a good discussion of commonly misused terms.

The worksheets and appendix are two other features that make the manual a useful resource. The work-

sheets, included after each step, are so well planned that they force the student to think about each step to be done. If there is a problem, the teacher's evaluation at the end of the worksheet directs remediation. The appendix contains useful information about practices and regulations for various fairs and other topics of concern to the participants or teachers.

All of this fine information is presented in a variety of type and size, developed by a word processing program that makes reading difficult. Although the manual is intended for students, the cartoons sprinkled throughout the text are distracting. Many of the quotes seem out of place and offer little to the meaning of the text. The manual contains so much valuable information that it deserves a better format than it presently has.

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## AGING

### THE BIOLOGY OF HUMAN AGING

ed. by A.H. Bittles & K.J. Collins. 1986. Cambridge University Press (32 East 57th St., New York, NY 10022). 280 p. \$37.50 hardback.

Success in growing up and maturing is eventually rewarded by the opportunity to top the hill and to slide into senescence. With the growing proportions of older individuals making up the population of industrialized nations, interest in age-related disorders has increased.

This book contains the collection of scientific papers presented at the Symposium of Human Biology in London (1984) by research workers in gerontology and geriatrics. Contributed papers were organized into diverse groupings such as model systems in testing theories of aging, social factors affecting biological age scores, behavioral aspects of aging, some biological changes associated with the elderly and demographic descriptions of changing age profiles.

The heterogenous range of investigations described in this series leaves the reader bewildered as to the actual objective for the symposium. The articles, read at random, can be interesting but are not coherently linked. The organization might have been improved by providing an introductory overview of past research in the specific domain studied together with the research aims that the investigators sought to explore. Many of the papers contain very familiar, general information as to the patterns of age-related inflections and demographic

changes in western cultures, but on the whole too few new or salient reports appear in a text of this title. The reader expects more biological data and a coherent approach to the study of human aging.

In this compilation of symposium papers, the print appears as ordinary type but is very readable, while the graphs and tables are outstanding. Extensive reference lists accompany each investigation and can serve as a further resource for the interested reader. The text might benefit students examining geriatric trends, but it would not capture the interest of the general audience or of specialists.

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## NATURE

### HANDBOOK OF NATURE STUDY

by Anna Botsford Comstock, 1911 (renewed 1986). Cornell University Press (124 Roberts Place, Ithaca, NY 14851). 859 p. \$19.50 softback.

It is wonderful to see an American classic reissued. The *Handbook* has, for the past 75 years, served us as a natural history sourcebook. It is a timeless treasure that provides a wealth of information about nature study as it relates to plants, animals, rocks, minerals, earth and sky. Written originally for elementary teachers with little or no background in natural history, the book has proven valuable over the years for secondary school teachers as well.

In part one, "The Teaching of Nature Study," emphasis is placed on teaching about nature as a way to cultivate in students a sense of wonder, a love of the beautiful through "truthful observations that may, like beads on a string, finally be threaded upon the understanding and thus held together as a logical and harmonious whole."

In this reissue, the suggested readings and the bibliography have been deleted. Many of the materials are unavailable to today's reader. The questions that are sprinkled throughout the lessons, however, are retained. They provide observational starting points for the study of the organisms in the lessons.

As a philosophical forerunner to modern day environmental education, the *Handbook* continues to offer both students and teachers a unique focused study of nature. If the book is not on your reference shelf, by all means order a copy.

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