

generations indefinitely. The report also outlines the known technical methods to capture energy from these sources and maps out a worldwide plan by which we could begin to rely more and more on them. This makes it very clear that future reliance on "income energy sources" could be a reality.

The information contained in this book makes an extremely important contribution to the general public's knowledge about possible solutions to long-range energy problems. Unfortunately the presentation is too sophisticated to allow the book to be used extensively at the high school or junior college level. Also, since the format is repetitious and uninteresting, it is doubtful that many teachers will adopt the book even as a supplementary text. Nevertheless the book ought to receive as wide a circulation as possible; it could be highly recommended as an addition to the school library and the teacher's personal library. It should be studied carefully by any student doing a research project on energy.

Organizations concerned with shaping responsible government policies in regard to future energy research and utilization should make full use of this report. It suggests an alternative to our present means of procuring energy that every responsible person should be aware of and should work to put into operation.

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General Biology

BIO GRAFFITI: A NATURAL SELECTION, by John M. Burns. 1975. Quadrangle/The New York Times Book Co. (10 East 53rd Street, New York 10020). 112 p. \$6.95 hardback.

Burns displays an extraordinary ability to combine puns, poetry, and biology in a fresh exciting manner. Anyone familiar with biology will find the 39 poems delightful and the 52 illustrations charming. The author makes extensive use of technical terms in developing his puns (malice aforethought becomes malleus aforethought). Even though a glossary of key words is included, the subtle humor will escape the casual reader. Biologists, however, will savor the gustful graffiti.

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INQUIRIES INTO BIOLOGY: (Three volumes) INTERDEPENDENCE OF LIFE, DIVERSITY OF LIFE, and MICROBIOLOGY, by H. Murray Lang, Edwin G. Palfery, and Ed. L. R. Van Nieuwenhove 1975. McMillan Co. of Canada (70 Bond St., Toronto M5B 1X3). 68, 70, and 67 p., \$3.25, and \$2.75, respectively.

Companion volumes have been prepared to give a basic yet comprehensive introduction to three areas of experimental study essential to the beginning biologist. They should serve high school students well as supplements to textbooks or as resource books for initiating their own investigations. Even the middle school student would find valuable assistance in the development of a meaningful science fair project or other personal exploration.

Traditional treatments of such topics as taxonomic classification, quadrat studies, and bacterial growth are presented. Yet interspersed among the classical are several less common approaches. For example the suggested dissection of the frog is not for the purpose of "learning the parts of the frog" but instead for the study of ecological relationships existing between the frog and its external and internal parasites. Five kingdoms of life are presented instead of the usual two or three. Social behaviors, including a brief review of the varying sleep characteristics of several species, are used to illustrate diversity among living things. Nevertheless, as a whole, the material must be considered conventional rather than unconventional.

Black and white photographs and diagrams, typical of such resource books, serve to illustrate specific points. Subtopics are presented in an easily understood manner, followed by a brief discussion and suggested student investigation that includes materials, methods, and questions related to the study. Some experimental designs are detailed, others are left up to the student to devise. The discussions and proposed investigations are nonesoteric and serve well the purpose of introducing the new student to each area of study.

Perhaps the best summary is a confession. I am very pleased to have had the opportunity to review these volumes so that they will now be accessible to the middle-school-age children in my own home as they begin to explore the conceptual intricacies of the biological world.

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History and Philosophy

HISTORY OF GENERAL PHYSIOLOGY, 600 B. C. TO A. D. 1900. Volume 1: FROM PRE-SOCRATIC TIMES TO THE ENLIGHTENMENT; Volume 2: FROM THE ENLIGHTENMENT TO THE END OF THE NINETEENTH CENTURY. by Thomas S. Hall. 1975. The University of Chicago Press (5801 Ellis Ave., Chicago 60637). 419 p. and 399 p. respectively. \$6.50 per volume; both softback.

The arrogance and ignorance of many a "scientist" of today who is unaware of the origin and development of scientific ideas was brought home to me the other day. I was startled to hear one of them, in a lecture, put down pretwentieth century knowledge as not "science" but "only philosophy." He is a professor of anatomy in a leading university in the country! We certainly have reached the nadir of intellectual poverty when we spurn and ridicule our immense inheritance. It is deplorable that we fail to impart to the present generation a sense of the history of science as a regular part of the school and undergraduate curriculum. Perhaps the pendulum may swing back and again the history of science may become a required part of the core curriculum of our students. Then scholars such as Hall, who compile for us a chronicle of the discipline, will be recognized as deserving our immense gratitude for not letting us forget the exciting and yet troubled eras of its prolonged gestation, birth, infancy, childhood and youth.

Hall published these two volumes in 1969 (also by University of Chicago Press) as hardbacks under the title *Ideas of Life and Matter: Studies in the History of General Physiology*. Evidently the publisher and the author chose the present title for its brevity, befitting a softback edition. But alas, those who shop for books by titles may so easily overlook a fascinating book precisely because the title fails to tell it all when it should. Perhaps the marketing expert uttered the self-fulfilling prophecy that the book was for a limited readership already aware of the scope of "general physiology" anyway. However, the word "physiology" has undergone an evolution through the centuries since Aristotle. It has become such a restricted word that even biology teachers may not be sure as to the contents of these volumes from their present title. Fortunately, Hall says in the preface, "the book tells the story of the long effort in Western thought to define life—and to interpret it—scientifically." I wish he had included the efforts