Life Nature Series: Two Subjects, Two Viewpoints

The Insects. Peter Farb and the editors of *Life*. Time, Inc., New York, 1963. 192 pp. Illus. $3.95.

This is one of a series of books being published under the title "*Life* Nature Library." All follow the same pattern in size, design, and illustration; they all add up to 192 pages and show the results of extremely careful editorial attention. Freedom of expression, however, is reserved for the writer of the text of each book.

The text of *The Insects*, consisting of eight chapters totaling 72 pages, was written with great skill by Peter Farb. His pages are not interrupted by illustrations, but drawings pertinent to the text are placed in the wide margins. Each chapter of text is followed by 8 to 16 pages of "picture essays" illustrative of its subject. For the many who will not take time to read Farb's text, the illustrations and their captions should provide a short-cut to understanding. But the important part of the book is by Farb. Addressing intelligent people whose education did not include entomology, Farb takes as his theme the evolutionary success of insects in "invading . . . every possible niche and exploiting nearly every possible source of food." He points out the survival value of flight, adaptability, external skeleton, small size, metamorphosis, and a specialized system of reproduction. The salient features of insect anatomy and physiology are described, the hormone control of metamorphosis, the structures built by insects (particularly by termites), protection against parasites and predators, the social insects (honey bees and ants), and aquatic insects. Farb is not at all concerned with economic entomology, but he does point out that "turning the complexities of the insects' life cycle against itself may be man's best hope of eventual control over insect pests." And he adds this comment, "the most efficient insecticides are other insects." Insects have what it takes "to endure even in today's man-infested world," and we need not worry that the song of the cicada and the cricket will be heard no more.

A bibliography and an index complete this book, which I find is an excellent brief introduction to entomology.

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The Fishes. F. D. Ommanney and the editors of *Life*. Time, Inc., New York, 1963. 192 pp. Illus. $3.95.

This volume is a popular and profusely illustrated account of the biology, evolution, and commercial importance of fishes. The presentation is typical of *Life* magazine, with photographs and text chosen to entertain as well as to inform. Following a general account of the habits, habitats, and structural adaptations of fishes, there are chapters devoted to their fossil history and evolution; a section on the sharks, skates, and rays; others on reproduction and parental care; and still others on food, feeding, survival, and migrations. The final section is a short (15 pages) but good introduction to fishery biology and fisheries. Supplementing the photographs, many of which are excellent, are "picture essays," sketches accompanied by explanatory synopses which generally supplement rather than illustrate the text. Those who wish a superficial account of the biology of fishes may find this book enjoyable.

The errors are few, and these are chiefly the result of oversimplification without qualification. I find particularly offensive the composite figure of the fresh water environment (pages 20 and 21), garishly colored, the scene overpopulated with a diverse array of leaping and swimming fishes, and depicting, among other incongruities, a marine or at best estuarine flounder (which is not a winter flounder, as the legend would have us believe) cheek-by-jowl with turtle, lily pad, and brown trout. Elsewhere in the volume, statements such as those that attribute regular self-fertilization to certain hermaphroditic species, or a sensory function to the elongate caudal and pelvic rays of *Benthosaurus*, lack basis in fact. But the complete absence of documentation makes verification impossible, an omission which also makes the volume a dead end rather than a means of access to the literature of ichthyology and related subjects. The one-page bibliography is inadequate. Even access to source material through acknowledgment is lacking. We find, for example, a "picture essay" depicting the parasitic relationship between male and female angler fish, an insert credited to the artist alone, no mention being made of the work from which figure and caption were taken.

The volume does serve to demonstrate the diversity of fishes and of their adaptations, as well as their importance and interest as populations of food animals. That material which is included is well organized and clearly presented. It will be informative to the lay reader and perhaps useful to the high school biology student. But since it lacks both depth and documentation, it can serve no higher scientific or educational purpose.

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Panorama of Science

Knowledge and Wonder. The natural world as man knows it. Victor F. Weisskopf. Doubleday, Garden City, N.Y., 1962. 222 pp. Illus. $4.95; PSSC Science Study Series edition: Doubleday, Garden City, N.Y., 1963. 282 pp. Illus. Paper, $1.45.

British scientists, it would seem, more so than others, have pioneered in a kind of science writing that was erudite and lucid, constituted an excellent summary of one phase or another of the world of modern science, but was marked with a personal philosophy or was permeated with moral or social speculations. The names of Jeans, Eddington, Russell, Hogben, Haldane, Huxley, Bernal, Levy, Dingle, Ritchie, and others come readily to mind. While the first two tended toward cosmic theology, many of the latter made up for it with different concentrations of pietistics. In America, a different trend seems to have emerged of late, of which this book may be regarded as a fine example. A segment of science is summarized, brilliantly and clearly expounded in brief paragraphs, another one is added to it, until within the span of two or three hundred pages, the reader is presented with a panorama of the most recent findings in physics, biology, geology, astronomy, and cosmology. No message is appended, no philosophy is injected. It is science for science's sake, compact, accurate, lucid, and impressive.

In this kind of venture, Weisskopf's volume occupies an honored position. The reader will feel like a traveler given a plane ride over the Grand Canyon, or over some such panorama of a vast natural wonder. Weisskopf reviews in depth, though with amazing succinctness and lucidity, the basic concepts of