

ities of the specific biologic area, yet with the recognition of its interest and importance to a wide range of people—nonspecialists as well as specialists. This book can be recommended as a fascinating introduction to current problems and progress in the investigation of the origin of life on earth.

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VERTEBRATE HISTORY: PROBLEMS IN EVOLUTION, by Barbara J. Stahl. 1974. McGraw-Hill Book Co., New York. 605 p. \$15.95 (hardback).

It has been great fun reading Stahl's *Vertebrate History* while working, on leave from Bowdoin College, in the Museum of Comparative Zoology at Harvard, whence cometh much of the inspiration and authority behind this discussion of progression in vertebrate groups. Using a somewhat journalistic style in reviewing an impressively broad area, the author demonstrates that she is thoroughly at home in vertebrate paleontology, is knowledgeable in research, and that in the history of fishes she has a special interest. She has had the advice of a number of outstanding authorities in the writing of this most informative book.

Not content with a single most-favored phyletic line proposed by a single authority or by a consensus of paleontologists, Stahl presents a variety of points of view on most problems and freely criticizes diverse conclusions, thus conveying some of the excitement of research on fossil vertebrates. The book differs from others on vertebrate paleontology in that its originality lies in its synthesizing of literature and current speculation on vertebrate progression, rather than in assimilation of present information to form a new theory or to establish new vertebrate groups.

*Vertebrate History* is a book for students with backgrounds in zoology and geology who are interested in pursuing paleontology professionally and for students who are interested in evolution and in paleontology. (McGraw-Hill includes this text in its "Series in Population Biology.") It is not a book that will provide entertaining reading for the casual reader, for Stahl's familiarity with vertebrate history leads her to freely use scientific names—the proper names of science. A useful addition to the book would be a glossary of scientific names and terms. A surprising feature is the small number of phyletic diagrams or evolutionary flow-charts, summarizing discussion. Such diagrams a beginning student, especially, finds useful.

Technically, the book leaves something to be desired. The line diagrams, from impeccable sources, are excellent

and abundant, but of the several photographs a number are poorly reproduced, and in one case the labels are difficult to find (5.2). At least two photographs are printed backward (1.3), and one of these is disfigured by printing errors.

The book provides a new introduction to vertebrate paleontology—an introduction well conceived—and a useful guide to vertebrate history that belongs in college and university libraries of science.

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### Human Behavior

GAZELLE-BOY, by Jean-Claude Armen. 1974. Universe Books, New York. 127 p. \$5.95.

Originally *L'Enfant Sauvage du Grand Désert* (1971), this is an account of an observation of a wild child. The author, a Basque poet and painter, claims to be the only man who has observed a wild child in its natural environment. While traveling by camel through the desert Armen was taken by a nomad to see a child (whom the nomads considered a genie) "galloping in gigantic bounds among a long cavalcade of white gazelles." Armen followed the herd and quietly observed it from a distance for several days. Eventually the gazelles became quite accustomed to him, and Armen was able to walk freely among them and even to share their shelter at night.

The child—a boy—behaved toward the man much as did the gazelles, largely ignoring him but occasionally sniffing or licking him. He exhibited strong imprinting by gazelles: herbivorous, he seldom used his hands for eating; as the gazelles communicated by tossing their heads and twitching their ears, the boy tossed his long hair and twitched his scalp muscles. The muscles of his legs were well developed, and he had exceptionally thick ankles. In the many migrations and wild running that Armen observed, the boy apparently had no difficulty keeping up with the gazelles. However, Armen noted that the child's eyes—in contrast to the placid, unchanging eyes of the gazelles—were expressive of many emotions: fear, delight, curiosity. Armen supposes that this mode of expression was learned from the child's mother before he was lost. He conjectures that the child fell off a camel in a caravan (traveling at night) when he was about 7 months old. He notes that nomad children learn to walk very early; and, when gazelles came upon the baby, it managed to keep up with the herd, aided by some female gazelle—possibly the one to whom the child showed especial affection during Armen's ob-

servation—that had recently lost her fawn.

Eventually, lack of food and water forced Armen to return to civilization; but he went back to the Sahara several months later and again found the herd and the boy, who still appeared to be healthy and well adapted to life with the gazelles.

The author is a meticulous observer. The book has many diagrams and maps of the herd's migrations, hierarchic structure, and modes of communication. Throughout, Armen touches on an amazingly wide scope of relevant information, and his discussion of wild children in general is particularly interesting. More than this: the story is a work of art—another reviewer called it a romance—with powerful imagery and beautifully evocative line drawings (by the author).

The lack of documentation in the book makes it impossible for me to vouch for the authenticity of the author's narrative, and while I would not accuse it of being antiscientific, Armen's treatment is highly mystical. But even if you are not interested in pondering the philosophic questions that the boy—a "happy being lacking self-knowledge"—brings to mind, there is much to be learned and enjoyed in the book.

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THE NATURE OF HUMAN SEXUALITY, by A. M. Winchester. 1973. Charles E. Merrill Publishing Co., Columbus, Ohio. 489 p. \$9.95 (hardback).

For every teacher concerned about his students' tumultuous transition into adulthood, this book is a must. The author has done a laudable job of bringing together the many aspects of the literature of human sexuality into one readable, informative book. The subject matter ranges from the biologic bases for separation of sexes and the historic bases for our sexual mores, through the anatomy and physiology of puberty and adulthood, to the role of sexuality in human pair-bond formation. Such usual topics as human embryology take on added interest when descriptions of fetal developmental stages include references to the sensations of kicking and movement that the mother may be experiencing.

Half of the book is devoted to topics ancillary to individual sexuality. Birth control, infertility, birth defects, venereal disease, and genetic engineering are all discussed in sufficient detail to discourage mistaken, and often emotionally costly, inferences.

There are occasional statements that smack more of personal opinion than of objective scientific analysis; for example, "The most promiscuous of all women, the prostitutes, often turn to drugs to dull their sensibilities so they