

**Science.** *Since man is a self-centered creature it is hardly surprising that his interest in science should fall largely on the forces that brought him where he is and directly affect him in his daily life. How his ancestors evolved from a being that looked like a cross between a worm and a minnow is told in J. Z. Young's "The Life of Vertebrates" (page 18). Although Mr. Young wrote it as a textbook it is the most important book on evolution published in years and is certain to fascinate far more readers than textbooks usually do. When the archeologist Frank C. Hibben speculates on how the first representatives of the human race reached North America in "Treasure in the Dust" (page 18) he is discussing a branch of science with a high universal appeal. Climate affects races and individuals so perceptibly that a whole body of legend has arisen about it. Seekers after truth will enjoy having Marston Bates distinguish scientific fact from folklore fancy in the course of his charming volume on the tropics, "Where Winter Never Comes," reviewed below by Ashley Montagu.*

## Lessons on Tropical Living

WHERE WINTER NEVER COMES.

By Marston Bates. New York: Charles Scribner's Sons. 310 pp. \$3.50.

BY ASHLEY MONTAGU

**T**HE tropics! What magic words! To some they conjure up images of romance and adventure, to some white drills and the perfusion of inexhaustible whiskies and sodas, to others steaming jungles dripping with poisonous snakes and pullulating with panting panthers. Infinitely insectified with the bitingest of bugs, the tropics are also hellishly hot. In fact, if you want a heaven on earth, any place between the Tropics of Cancer and Capricorn isn't where you'll find it. The number of myths about the tropics must be about as numerous as the number of people (apart from a few authorities) who have ever talked about them. In the present delightful volume, subtitled "A Study of Man and Nature in the Tropics," Dr. Marston Bates punctures one after another of the myths and sets the record straight.

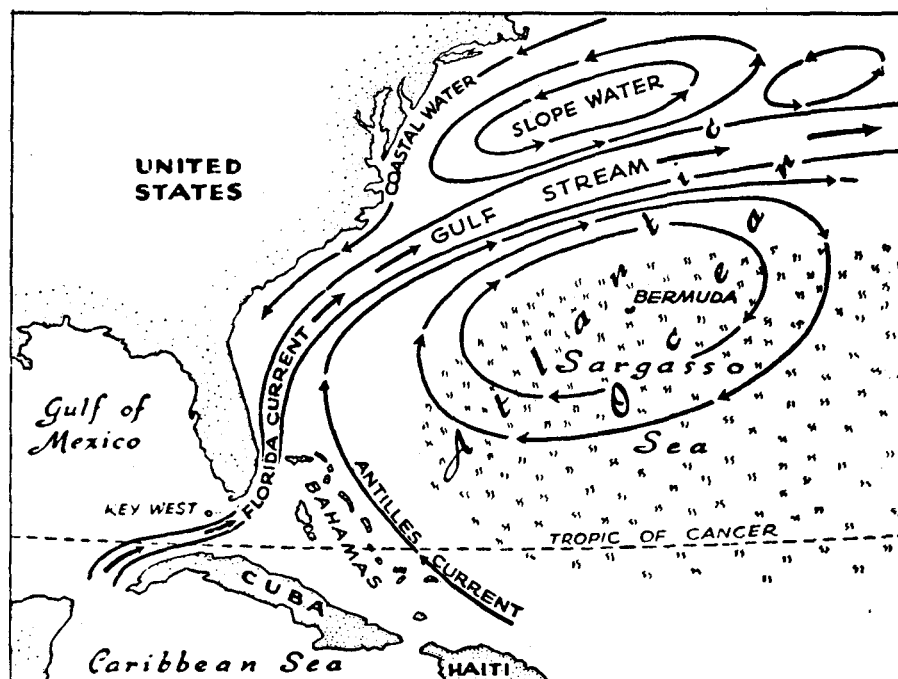
Dr. Bates has spent half his life living and working as a research scientist in the tropics. He has studied and thought a great deal about them, and he has for a long time been much concerned about the lack of understanding which most people in the Western world have about the tropics. In this sparkling book he sets out the facts, and a more informative

and cerebrally palatable book on the tropics would be hard to imagine.

"Where Winter Never Comes" is much more than a book on the tropics; it is also, in the most significant sense, a work on man, his wisdom, his capacity for increasing the sap in sapiens, and his quaint ideas about the nature of a nature he troubles not to understand. Black ties, and even white ones, should not be worn in the tropics—and I don't mean metaphorically speaking—but what can one do with people who insist, in such uniforms, that "it's the climate" that is the cause of their discomfort? The best thing would be to get them to read Dr. Bates's book; that way they might acquire a sufficient amount of humil-

ity with which they could more effectively meet the humidity.

As Dr. Bates points out, what people bring to the tropics are the wrong ideas—ideas and habits more or less appropriate to whatever non-tropical climates and cultures they may come from, and then attempt to foist them onto an environment to which they are simply not adapted. Then, of course, instead of looking to and examining themselves they blame their inability to adjust upon the environment! The white man's burden while living in the tropics, as Dr. Bates so well states it, is not the tropics but the load of his own civilization. The inability of the European to "compete" with the native on equal terms is not due to biological factors but to cultural ones. "I am not saying," the author remarks, "that I think Europeans ought to adopt African tribal customs, or wrap sarongs about their waists and start tapping rubber trees in Indonesia. But I think they ought to stop talking about their superior race and superior culture, and stop being preoccupied with maintaining their superior status as minorities in alien environments . . . I think their real burden while living in the tropics is the load of their own civilization. This load contains some articles of real and demonstrable value, particularly among the sciences and technologies; but it also contains a lot of plain rubbish that would better long since have been thrown away." Dr. Bates's book will help. It is one of the most pleasant books I have read for a long time. It is that rare thing in our day: a creative and a constructive book, an important book, and a delight to read.



—From the book.

Ashley Montagu is chairman of the department of anthropology at Rutgers University.

## Animal Evolution

THE LIFE OF VERTEBRATES. By J. Z. Young. New York: Oxford University Press. 767 pp. \$8.50.

By JOHN PFEIFFER

TEXTBOOKS are a perverse breed of technical literature. Sometimes it seems as if they are not accepted unless written in the deadliest style possible. They leave the general reader cold—not to mention many students and often even their professors. The pedagogical tradition of describing a mass of factual detail, and relieving the monotony with an occasional stilted paragraph intended to emphasize “general principles,” is a guarantee that the book will be read only by those who must read it. “The Life of Vertebrates,” which was written as a textbook, is a brilliant exception to these rules.

The story of animals with backbones is a dramatic phase of the great sweep of evolution. A great deal has been learned about evolution since Darwin's time, particularly during the past thirty or forty years. Contributions have come from studies of heredity, embryology, the chemistry of living things, and the interplay of animal populations. Dr. John Z. Young of University College in London, one of the world's leading biologists, has brought this new information together for the first time in this volume. Moreover, he has done it imaginatively and creatively.

*Amphioxus*, the lancelet, an early representative of the vertebrate chain that led to man, was mistaken for a slug when it was first described scientifically. Dating back about four hundred million years, some of its descendants are with us today. The creature looks like a cross between a worm and a minnow. It is two inches long, lives on the sea bottom, and has a rudimentary spine. It can swim, but rarely bothers to. It burrows in the sand and “must take and leave the world very much as it finds it.” Dr. Young then traces the long trail from *Amphioxus* to fish, amphibians, reptiles, mammals.

The “missing link,” however, is still missing. Some students of evolution hold that monkeys, apes, and men evolved from a common stock about fifty million years ago—perhaps an ancestor of the African elephant shrew, a mouselike creature with a long snout and long back legs for jumping. In any case, once nature took the step human development was under way. “The history of man, like that of so many other mammals, has been a series of invasions from the

central Asiatic land-mass . . . We can have in mind a picture of great populations of human beings, composed of individuals differing slightly in structure and habits, warring and competing with each other . . . the invader taking over some of the genes and the gods of its victims.”

Dr. Young conceives of evolution as a dynamic process in which living things are continually increasing in number and continually developing new ways of exploiting their environment. In a sense, we can rank an organism on the evolutionary scale by considering the odds against such an organism existing at all. Man is the most improbable of all creatures in that he uses the most devious and complex methods of exploiting the world around him.

To achieve his unique synthesis of knowledge Dr. Young draws on many sciences. For example, he shows that evolution has been influenced by astronomical and geological factors which produce major mountain-building cycles every two hundred million years or so and lesser glacial periods every 40,000 years. But the main impetus has been competition and cooperation among living things, plants as well as animals.

Like most important books, this one is not easy reading throughout. While it does not include as great a proportion of technical material as conventional treatments, some judicious skipping is required on the part of the non-specialist. But the effort will prove most rewarding, because the writing is as clear as that of the best popular books. (The sections which include the most significant ideas are particularly effective). “The Life of Vertebrates” is a fascinating account of evolution in the broadest sense of the word.



—From “The Life of Vertebrates.”  
“Koala Bear (*Phascolarctos*).”

## Prehistoric America

TREASURE IN THE DUST. By Frank C. Hibben. Philadelphia: J. B. Lippincott Co. 311 pp. \$5.

By HARRY L. SHAPIRO

THE progress of American archeology provides a beautiful example of the way a corpus of scientific knowledge grows. Fifty years ago American archeology was virtually non-existent. A few misguided excavations, a welter of ill-founded speculation, and much guessing formed its stock in trade. Even a generation ago knowledge was still scant and thin. Since then hundreds of archeologists checking and testing every scrap of recognizable evidence, thousands of excavations seeking new clues or confirmation for old ones, millions of shards classified by a variety of categories have all added bit by bit to a rapidly growing accumulation of facts. False scents, trial and error, lucky breaks, and brilliant deduction have also played their parts in this amazing process of discovery.

Although today archeologists are beginning to discern the major contours of the aboriginal past of America, there is yet much to discover and re-interpret. In “Treasure in the Dust” Frank C. Hibben, himself an archeologist of repute, has attempted to draw these general outlines as they are now known for North America. The first settlers arrived on these shores at least 30,000 years ago, according to Mr. Hibben, although in one place he stretches it to 40,000. They entered via Alaska, toward the end of the Pleistocene when there may well have been a land bridge between Asia and Alaska that could have provided easy access for hunters pursuing game. The few traces of their passage which have been picked up are buried deep beneath the muck that accumulated since the last glaciation. The Alaskan funnel is the only port of entry that Hibben recognizes. Migration from the fantastic lands of Mu, Lemuria, or Atlantis he dismisses with no difficulty and with no demurrer from professional students. But strangely enough he says nothing about the possibility of trans-Pacific movements from Asia in later times, which some distinguished scholars take seriously even if they have not convinced all their colleagues.

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