cosmetics and hair dyes. Many people are so concerned with appearing young and squeezing out a few more months or perhaps years that they have little time to enjoy the long life that we already have. An evaluation of the screening tests for cancer would have been more valuable.

After producing a book marked by attentiveness to detail, Arking seems to have given up on the references: they are sloppy. I am sure that this flaw will be rectified in later editions. Both books are valuable additions to the literature, and the prices are reasonable (this is specially important for Arking’s book). I hope their publications reflect an important upsurge in interest in aging and in the teaching of aging: the demographic projections alone compel such concern.

AVRIL D. WOODHEAD
Biology Department
Brookhaven National Laboratory
Upton, NY 11973

References cited


A RUSSIAN SILENT SPRING


This book is based on two earlier books published in Russian by the same authors: Conservation of Living Nature: Problems and Perspectives (1983) and The Levels of Conservation of Living Nature (1985). Apparently little updating was done, because only 3% of 683 bibliographic entries are post-1986. In fact, the book is a fascinating Russian perspective—cira the early 1980s—on key conservation issues. From the authors' perspective, few books treat the conservation of all living nature, hence the authors “place a high value on the diversity of living nature as the basis for the existence and development of mankind on the Earth” (p. v).

The authors state that “this book is an attempt to analyze the key problems and perspectives of living resource conservation in a non-traditional way” (p. v). After an introductory chapter on the dangerous extent of human impacts on the biosphere, a series of chapters dealing with environmental problems at the molecular-genetic, ontogenetic, species-population, and ecosystem levels comprise half the book. The authors marshal considerable evidence from Central and Eastern Europe (interspersed with examples from the West) on the pervasive influences of human-produced pollutants and activities on genetic, biological, and ecological processes. This well-documented compendium of environmental insults to Central and Eastern Europe is reminiscent of Rachel Carson's classic catalyst to the American environmental movement.

The book contains a wealth of information pertinent to national, regional, and global conservation efforts. The authors give a few examples from Europe: one-third of the 3000 true fungi species are considered rare and in need of special protection, 52% of the freshwater fish species are threatened with extinction, 54% of the commercial marine species in European seas are depleted or prohibited from trade due to severely depressed populations, more than half the mammal species are endangered, and 72% of the bird species are endangered. The book's examples are not limited to Europe and Soviet Asia; for example, the spraying of deltamethrine and permethrine on Côte d'Ivoire floodplain forests to control tsetse flies caused the disappearance of 11 out of 55 freshwater fish species, as well as one shrimp species—without affecting the tsetse fly.

Part I concludes with brief chapters on economic, organizational and legal, and predictive problems. Much of the information is dated and brings little new thinking on these important subjects. The economics section would have benefited from a more current treatment of economic valuation of natural resources and ecological services, as well as input from the exciting new field of ecological economics. The authors address predictively on the same hierarchical levels of organization used for the major chapters. At the ecosystem level, they give an interesting overview of Russian experience from the 1930s to the 1950s at predicting the ecological effects of large reservoirs. According to the authors, none of the experts predicted large-scale dissemination and translocation of aquatic species, the predictions of the formation of benthic and fish communities were usually wrong, and biomass and productivity projections were at least an order of magnitude too high.

Part II offers solutions to the environmental problems described in Part I. The major chapter addresses the need for "ecologization of society's activities," including agriculture, biosphere utilization, industry and transport, the economy, urban environment, medicine, and politics and law. Here, serious flaws appear. Despite the authors' valiant efforts to address environmental problems in an integrated, holistic way, their global perspectives are not particularly accurate. Few conservationists, scientists, or policy makers would agree that "fishing must completely turn into aquaculture" or that part of the mangrove-covered territory should be used for tropical mariculture.

The authors' overview of industrial use of vegetation is particularly disconcerting because they believe reforestation is increasing rapidly enough.
that, in some unspecified future, "it will be feasible to abandon timber felling and logging in natural forests" (p. 163), yet they equate forest plantations with natural forests. Similarly, they misrepresent agroforestry as a polycultural system that maintains natural vegetation. Despite more than two decades of field experience in Costa Rica, I have never seen nor heard of the "hevea-coconut-manioc-banana-soybean-corn system in Costa Rica." The two final chapters (theory of and ways foundations and theory of living nature) are Eurocentric visions of protection in natural habitats, captive breeding, domestication and cultivation, ecological engineering, genetic banks, and regulated evolution.

The authors are to be commended for their excellent translation to English and for their attempt to give their vision of conservation a global, multidisciplinary perspective. Readers not familiar with the Russian scientific literature will appreciate this English version of the authors' two earlier books and the numerous examples from Eastern Europe. Unfortunately, the publisher's effort did not match that of the authors. Too many editorial, grammatical, and even technical (such as consistent misuse of "species" for "individuals") errors detract from the book's quality. Nevertheless, this book is important and timely with a clear description of many environmental problems and potential solutions to the conservation of nature.

GARY S. HARTSHORN
World Wildlife Fund
Washington, DC 20037

LIVING ON DRY LAND


The title of this book is likely to mislead North American ecologists who think of ecophysiology as studies that emphasize physiological mechanisms rather than ecological relationships. The emphasis of Cloudsley-Thompson's book is ecological and behavioral with limited discussion of the physiological mechanisms that provide the adaptations of arthropods and reptiles to hot, arid environments. Based on the book title, I did not expect to find a review of foraging tactics of predators, species diversity and competition, and food selection. Nevertheless, this book is a fairly comprehensive review of the adaptations of desert arthropods and reptiles.

The book is organized into chapters that address specific adaptations such as avoidance of environmental extremes, water balance, temperature regulation and control, and activity cycles. Each chapter is subdivided into sections on arthropods followed by sections on reptiles, the bulk being summaries of studies on individual species that exhibit a particular type of adaptation. These studies are primarily from North American deserts; the remainder are largely based on the excellent studies done at Gobabeb in the Namib Desert and a scattering of examples from Australia and the Middle East.

The review nature of the book at times leaves the reader with the feeling that more information would have been useful. For example, in the review of coloration, Cloudsley-Thompson examines mimicry in beetles that resemble flies. He presents a brief statement that these beetles are avoided by predators because of the energetic expense of capturing fast-moving flies, an example of speed mimicry. I would have liked a more comprehensive review of the arguments for speed mimicry as a general adaptation.

One of the more interesting topics included is the arthropods of temporary rain pools. The review of diapause in ephemeral pool inhabitants is excellent. However, I expected a discussion of accelerated growth and sexual maturity in these organisms plus some discussion of the adaptations of taxa that inhabit the pools after the pools have held water for a period of time. These adaptations were not considered.

Although some physiological adaptations are discussed at length, others receive only a passing mention. The author mentions cryptobiosis in the eggs and developmental stages of some temporary pool inhabitants. However, there is no mention of cryptobiosis as an adaptation of soil-dwelling collembolans and mites. The ability of many soil arthropods to enter a cryptobiotic state is an important adaptation for these arthropods.

Throughout the book, the author has carefully provided sufficient descriptors with the genus or species that, together with the illustrations, allow the reader to develop a mental picture of the organism and thereby a better understanding of the adaptations described. In the few instances where that was not done, it is often difficult or impossible to know if the organism in question is an arthropod or a reptile.

It should be emphasized that this book is written in the format of a compendium of examples of adaptations of arthropods and reptiles with little critical review of the shortcomings of the studies that are summarized. Neither does the book provide a synopsis of where emphasis should be placed in future studies.

In addition to providing examples of specific studies, Cloudsley-Thompson carefully lists all reviews that have been written on a particular subject. This bibliography provides an invaluable source of information for young scientists interested in pursuing research on any of the topics covered in this book. There are more than 500 citations that cover research in the field through 1990. Indeed, the literature coverage is encyclopedic.

The book has abundant illustrations, primarily photographs of species mentioned in the text or of closely related species. The photographs are useful for readers unlikely to be familiar with all of the taxa mentioned in the text. However, I was disappointed in the absence of tables of comparative data and in the paucity of graphs to illustrate relationships.

This book will be of great value to zoologists who wish to initiate studies of the physiological ecology of desert reptiles or arthropods. It is a useful review for those of us who occasionally work on questions about the adaptations of these desert animals. Unfortunately, the book is priced beyond the means of most academics and students.

WALTER G. WHITFORD
Department of Biology
New Mexico State University
Las Cruces, NM 88001

BioScience Vol. 42 No. 7