

The Private Life of Plants

By David Attenborough. 1995. Princeton University Press, Princeton, New Jersey. 320 pp. + illus.

The book starts with "Plants can see. They can count and communicate with one another. They are able to react to the slightest touch and to estimate time with extraordinary precision." This statement succeeded in getting this reader's attention, curiosity, fascination, whatever you call it. The writing is lucid and concise. Technical terms are kept to a minimum. The numerous, excellent color photographs occupy about 50 per cent of the book.

Attenborough says "This book is an attempt to see the natural world [of plants], not from our point of view, but from theirs." I had the feeling that the purpose of the book was to raise our level of awareness of the importance of plants in the World and how they are essential for our survival. It is not exaggeration to say that all animals, and that includes humans, depend upon plants for survival. What would our life be like without wheat, corn, beans, potatoes, grapes, etc. for food and drink? What would our diet be like without the grasses, clovers, grains, etc. that eventually appear in the markets as steaks, hams, and chops? Attenborough makes the point that we exploit plants, not only for food, but for clothes, building materials, and decoration. And the book shows how we do this and how, to put it in Attenborough's intriguing view, the plants use us.

The book is composed of six chapters that are titled: Travelling, Feeding and Growing, Flowering, The Social Struggle, Living Together, and Surviving. The format of each chapter is a series of detailed examples which illustrate the various aspects of the lives of plants. Attenborough travelled the World to assemble the fascinating examples that illustrate his story. Many of the items are from the exotic parts of the World where man has not trashed the landscape, thus destroying the natural areas where the plants and animals had developed, or evolved if you prefer, the specialized relationships on which a plant may depend for its survival. Some of the examples are marvels of intricacy, the reasons for which have escaped the eyes of man until recently.

Sex, in all sorts of permutations and moods, inevitably appears in every plant's private life. Sexual deception is a favourite theme, such as orchids that look like bees. And there are more than just plants. Whether you are interested in birds, bees or bats, this book has something for you.

Attenborough has produced a television series of the same name. The two overlap as well as complement each other.

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ENVIRONMENT

Peterson First Guides: Forests

By John C. Kricher. 1994. Houghton Mifflin Co., Boston and New York. 128 pp., illus. U.S. \$4.95.

This is truly a pocket guide being 9.5 x 18.5 cm. It is designed for adults (teenagers and up) and is an introduction to the various types of forests in North America with a distinct emphasis on the United States. The introduction discusses the identification of plants and animals, and the characteristics of forest types. The major part of the book treats 48 forest types. The format, with a couple of exceptions, devotes two pages to each forest type with a page of coloured illustrations of the plants and animals facing a page of descriptive text.

The illustrations are very good but there are some problems: 1) Most people will not be able to separate Red Crossbills from Pine Grosbeaks, page 70, because the distinctive differences are not clear. 2) The names Red-headed Woodpecker and Rose-breasted Grosbeak are reversed on page 54. 3) The Red-tailed Hawk illustration, page 14, shows a bird

in a nest with only the head and tip of the back showing. It does not show the characteristic features needed to identify the bird. 4) Working with such a restricted number of pages and trying to deal with hundreds of organisms, it is perplexing to see some plants and animals illustrated more than once, for example, Sub-alpine Fir is shown on pages 74, 76, and 122.

The writing is sometimes wordy and sometimes repetitious. Thus some pertinent facts about the organisms could not be included. The content is sometimes confusing. For example, the phrase "Hickory seeds are contained in thick hickory nuts,..." is misleading, because the hickory seed is the nut. The nut is composed of a thick outer husk and a thinner inner shell which contains the kernel. The section on "Widespread North American mammals" includes the Pronghorn, the Collared Peccary, and the Grizzly Bear, three species which are restricted in numbers and geographical distribution,

but does not mention the Beaver, Porcupine, and Raccoon, three common and widespread mammals. The text describes the Great-horned Owl's call as "a resounding hoot," but a simple hoot is not the distinctive multinote call that is characteristic of this owl in the northeast. The distinctive features of the Pileated Woodpecker (page 113) should have included the red cap. And we are told that "Birds tend to be vocal and active during the daylight hours,..." But such a statement seems a poor use of crucial space which could have been used to tell readers that the hours of dawn and dusk are the best times to see and

hear birds. Thus the quality is lower than that we associate with the Peterson Field Guides.

Despite some weaknesses, this is a good introductory guide to forest types and the plants and animals that inhabit those forests. I think most people will be impressed to see how many distinct types there are. It is recommended to all naturalists because of its broad overview of the plant communities which we commonly refer to as forests.

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Terrestrial Ecosystems Through Time: Evolutionary Paleocology of Terrestrial Plants and Animals

By A. K. Behrensmeyer, J. D. Damuth, W. A. DiMichele, R. Potts, H. D. Sues and S. L. Wing. 1992. University of Chicago Press. xix + 568 pp., illus.

In search of the universal we find impossibility. There can be no bible, a single book describing all there is to know of the past. Yet, we try, if for the only reason as to hint at the possibilities and complexities of our understanding of the past.

Most geologic or primary paleontological texts provide brief outlines of the major events in time and the changes geological or biological with perhaps a simple synthesis of what the ecosystems may have looked like. It is feared that the prospective student's next jump after learning the parochial is complete into whatever small field of taxon or time he or she chooses, at least for a time, forgetting the interrelationships of groups at the higher level. *Terrestrial Ecosystems Through Time* not only bridges this gap, slowly leading the student along deeper into the caverns of knowledge but attempts to place the taxon or time in a global, continuous area, inflating the two dimensional faunal lists into three dimensional ecosystems.

The 541 pages of text and voluminous references introduce the ways of inferring ecology from morphology without neglecting the importance of sedimentological or taphonomic information. The complex and still growing data from today's ecosystems are even more mysterious yet wonderfully inciteful the further back in time (chapters 1-2).

If we examine specifically the fossil plants (introduced in chapter 3) and animals (introduced in chapter 4), each have their own pitfalls in paleoecological

interpretation but many strengths as well. The floral record "preserves information about ancient vegetation on very fine temporal and spatial scales" (page 140). Morphology of species may indicate a particular role in the ecosystem (ecomorphs) to which information may be enhanced by locomotor capabilities, body size, and behaviour (e.g. dinosaur nests) to name a few.

The following three chapters are summaries of major biological events through time, Paleozoic, Mesozoic and early Cenozoic, and late Cenozoic. And the closer to the present we get, the complexity of species and their possible interactions increase, which is illustrated by the depth of discussions. Each chapter includes paleotopographic and plate position maps. The scope of these chapters is grand and the authors have relied on discussions with major participants in their respective fields. To synthesise the interrelationships of species from bivalves, to plants, to man is herculean but the authors succeed in providing the essential hints of ecosystem reconstruction.

Though I used the term "student" as a potential user of this book I should underscore my meaning as a idealistic term. We are all students and no matter what level of our personal understanding we must be drawn back and reminded of the place in the grand scheme of things when an extant or extinct species belongs.

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