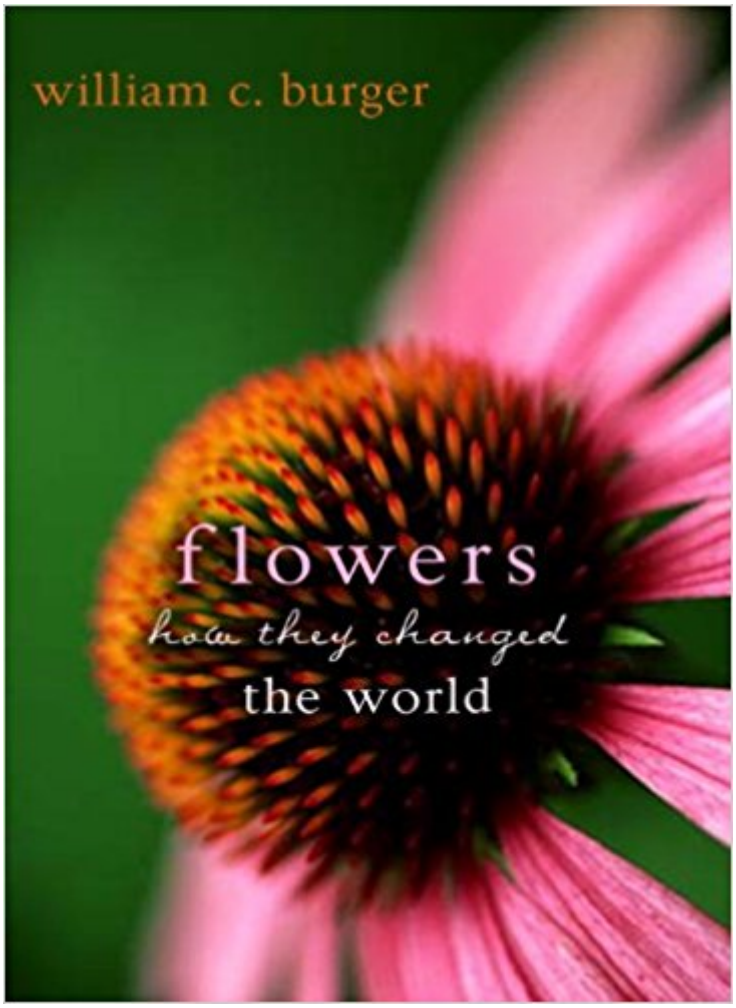
Flowers: How They Changed The World



Synopsis

The world would be a pretty drab place without flowers. Their bright cheery colors help make our natural environment a more delightful place to be. But flowers in all their beautiful variations didnÃ¢â ¬â„¢t evolve just for the viewing pleasure of the later-developing human race. What are flowers really for? As botanist and popular science writer William Burger makes clear in this enchanting book, the quick and simple answer is: sex. Burger emphasizes the essential role that flowers play in lifeÃ¢â ¬â„¢s evolutionary scheme. Their bright colors and alluring shapes represent a strategy for attracting insects and inducing animals to help with pollination. This constant intermingling is natureÃ¢â ¬â„¢s way of perpetuating the species and encouraging variety, so as to protect against disease and unpredictable environments. Flowers are the supreme example of natureÃ¢â ¬â„¢s reproductive exuberance, ensuring the persistence of life against an onslaught of destructive forces.More significantly, Burger points out, flowers are the fundamental energy resource for most of the biosphere. Since they energize themselves by capturing the energy of sunlight, they provide a vital link in the chain of life, especially for animals and humans, which depend on other organisms to nourish and energize them. Without the existence of flowering plants, human survival would be in jeopardy. Finally, Burger goes on to show the paramount importance of a few species of plants that have served not only as the basis of agriculture, but, in doing so, have enabled human civilization to thrive. Even today, in our complex technological world, it is the flowering plants that provide us with nearly all the vegetable energy that sustains us. Written with clarity, wit, and engaging enthusiasm for the marvels of our fragile ecosystem, Flowers will make you stop and smell the roses, with a new appreciation of their crucial role in the web of life.

Book Information

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Customer Reviews

Behind its provocative title stands an engaging and beautifully written look at how flowering plants, over more than 100 million years, have "transformed terrestrial ecosystems, supported the origin of primates, and helped us humans become the masters of our planet." In a short but sweet overview that can be enjoyed by laypeople and scientists alike, Burger, curator emeritus in the Department of Botany at Chicago's Field Museum, delivers a perfect match to his earlier work, the well-received Perfect Planet, Clever Species. Burger begins with the specifics of what actually defines a flowering plantÃ¢â ¬â •a group that, as some readers will be surprised to discover, doesn't include the bougainvillea or dogwoods (which Burger calls "pseudo-flowers"), but does include the carrot and grasses. He then deftly explores the ways in which plants are "particularly challenged" in defending themselves from plant eaters; how early insect-eating primates began to climb trees in search of insects, whose numbers grew in flowering trees; and how flowering plants provide a huge portion of human nutrition. Burger convincingly argues that, while plants have changed the world, it's now time for humans, who have gained so much from plants, to protect their future existence. Illus. not seen by PW. (Apr.)

From the sublime aroma exuded by a velvety rose to the fiery intensity of a tropical orchid, flowers influence our world in stimulating ways, but flowers are so much more than mere eye-candy in the lush perennial garden. Flowers have, in fact, been responsible for significant transformations throughout our planet's history, as complex societies developed and flourished based on their cultivation of flowering plants. Combining a botanist's orderly approach with an environmentalist's comprehensive appreciation, Burger traces the evolutionary history of flowering plants, emphasizing the critical importance their biological functions play in the overall health of our planet. Asking--and answering--such basic questions as what is a flower, why are they so varied, and where did they come from, Burger logically guides the reader onto more complex subjects, such as biodiversity, climate change, and agricultural symbiosis. Although written in an appealing, conversational style, Burger's treatise will be best appreciated by readers with at least a fundamental understanding of botanical principles. Carol Haggas

A very interesting read.

If I didn't know better I would think this enchanting little book was written specifically for me. It has all of the elements I look for in a science book. One; the author, Botanist, William C Burger is a working scientist. Two; the basic subject matter is Botany but beyond that it's about Evolutionary Biology, the relationship between plants and animals, Ecology and how the flowering plants have influenced the environment and the future wellbeing of all life, including humans. In a kind of Botany 101 Dr. Burger gives you the basics of angiosperm (flowering plants) biology. Starting with a break down of flower anatomy you will learn the names of its various parts and what their functions are. Far from being a dry dissertation on plant reproduction this information is presented in a clear, entertaining manner. I found Dr. Burger's writing to be friendly and informative, like a classroom lecture given by your favorite professor. The evolution of flowering plants got it's start about 130 million years ago and Burger traces that history and current theories as to how it came about. Fossils of early angiosperms are very rare and hard to identify but many specialist are studying what we do have so new ideas could come at any time. Symbiotic relationships with other organisms are covered in some detail. Insects, fungi, birds and some mammals all contribute to the success of flowering plants. But not all relationships are helpful, some are down right harmful or even lethal. How do plants defend themselves from these invaders? They can enlist the aid of friends, like ants, or add chemical toxins to their arsenal or grow sharpe thorns to deter hungry mouths. This fascinating little book covers so much ground it's difficult to summarize in a short review. Different readers may focus on different parts of the book. How flowering plants shaped the biodiversity of the world by creating many small niches that were exploited by new species of insects, birds and mammals was a stand-out for me. Certain parts of the book may lead you to other authors who cover the same issues. Dinosaurs are mentioned briefly and you may want to consult Robert Bakker's book The Dinosaur Heresies for more information on how these huge reptiles may have played a role in the development of flowers. The section on agriculture covers some of the same issues as Jared Diamond's Guns, Germs, and Steele. That section also has an interesting story on how ancient Peruvian potato farmers in the Andes used the Pleiades to help them decide when to plant their crops. The author also gives an alternate viewpoint to some concepts put forward by Stephen Gould in Wonderful Life. All in all this is the best kind of science book, one that covers many issues and giving the reader a different way of looking at the natural world. It wasn't just animal life that benefited from the proliferation of flowering plants over the last 130 million years. Strange as it may seem, the non-flowering plants were able to hitch a ride on that bandwagon. Conifers, ferns, mosses and primitive plants like liverwort increased in diversity, if not numbers, as they invaded

open niches everywhere. In his closing chapter and in the epilogue Dr. Burger summarizes both the book and the current state of planet Earth. In some ways his feelings are dark and foreboding in other ways light and optimistic. Our human societies face a multitude of threats, some of which we are creating ourselves. Uncontrolled consumption of natural resources, a population that is spiraling ever upward with no end in sight and the thoughtless pollution of our atmosphere and ocean. Not to mention human-caused extinctions on an unprecedented scale. The future is ours to squander or to enjoy. The time of choosing which course to set is close at hand and, according to the author, the sooner the better.LastRanger

William C. Burger’s "Flowers: How They Changed the World" is certainly a labor of love. His clear and enthusiastic prose transported me back to a course in botany I had at the University of Arizona around 1970. As a zoologist I had had little contact with botany, but I had always been interested in the subject. The course I took in botany opened up this fascinating world and I now remember the hours I spent in class and in hunting flowering plants in the desert as golden. This book brought all that delight back.From the structure of flowers, through their function, defences, evolutionary history and history related to humans and other organisms, Burger has opened the door to an enchanted world. Yet it is the world just outside, in vacant lots, woods, meadows, tropical forests, agricultural fields, yards, roadsides, deserts and swamps- in fact almost anywhere.A naturalist can find profound interest in the weeds, wild flowers and cultivated plants described here, and thus is almost never bored. I thus recommend this volume without reservation. It will open the reader’s eyes to an absolutely engrossing subject and may give them a life-long passion.

Flowers are one of the most attractive aspects of the outdoors; but they didn’t evolve just for humans to appreciate. Botanist and science writer William Burger examines the role of flowers in the natural world, from how their bright colors and shapes attract and induce animals to help with pollination to how they serve as an energy resource. Chapters survey flowers, their pollinators, and how flowers have enabled ecosystems to survive in his lively blend of botanical research and wide-ranging natural history insights. A top pick for college-level students and leisure readers who like science and gardening books.Diane C. DonovanCalifornia Bookwatch

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