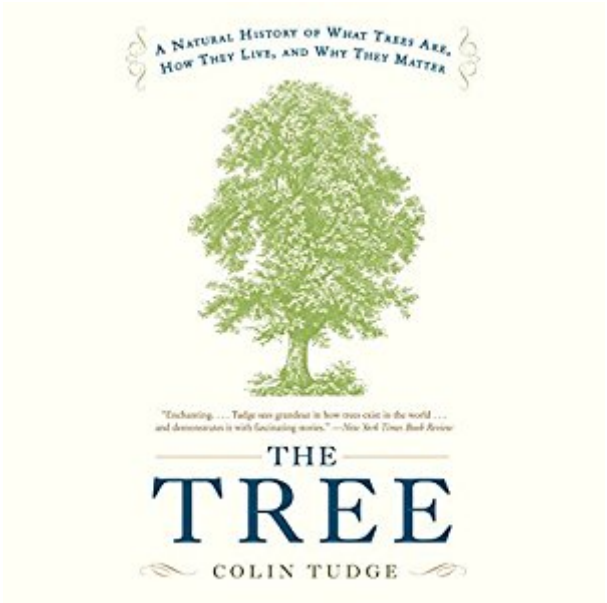
The Tree: A Natural History Of What Trees Are, How They Live, And Why They Matter



Synopsis

There are redwoods in California that were ancient by the time Columbus first landed and pines still alive that germinated around the time humans invented writing. There are Douglas firs as tall as skyscrapers and a banyan tree in Calcutta as big as a football field. From the tallest to the smallest, trees inspire wonder in all of us, and in The Tree, Colin Tudge travels around the world - throughout the United States, the Costa Rican rain forest, Panama and Brazil, India, New Zealand, China, and most of Europe - bringing to life stories and facts about the trees around us: how they grow old, how they eat and reproduce, how they talk to one another (and they do), and why they came to exist in the first place. He considers the pitfalls of being tall; the things that trees produce, from nuts and rubber to wood; and even the complicated debt that we as humans owe them. Tudge takes us to the in flood, when the water is deep enough to submerge the forest entirely and fish feed on fruit while river dolphins race through the canopy. He explains the "memory" of trees: how those that have been shaken by wind grow thicker and sturdier while those attacked by pests grow smaller leaves the following year; and reveals how it is that the same trees found in the United States are also native to China (but not Europe). From tiny saplings to centuries-old redwoods and desert palms, from the backyards of the American heartland to the rain forests of the and the bamboo forests, Colin Tudge takes the listener on a journey through history and illuminates our ever-present but often ignored companions. A blend of history, science, philosophy, and environmentalism, The Tree is an engaging and elegant look at the life of trees and what modern research tells us about their future.

Book Information

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Customer Reviews

"I never met a Tudge I didn’t like" is a fitting adage for this wide-ranging author. Having written an "unauthorised biography" of life, the impact of agriculture on human development and other works, Tudge has created a masterpiece of science writing. No longer can we claim that we can’t "see the woods for the trees" since he has detailed the mechanics of both in exquisite detail. At) least so far as we know now. If nothing else is clear from this book, what we don’t know about the mechanisms of trees far exceeds what we’ve learned. Trees, so ubiquitous in their presence and so meaningful in our lives, remain a great mystery to be solved. In three almost independent segments, he spells out what is known and what needs to be revealed.He opens with one of the most understated definitions in science writing: "a tree is a big plant with a stick up the middle". From this simplistic opening, he then develops an image of how complex that "stick" and "plant" combination is in the final product. This complexity didn’t appear from nowhere - the author explains how evolution built it from simple beginnings. Most readers will be familiar with the fact that 46 chromosome are needed to make a human. Trees, through various mechanisms, may develop hundreds of chromosomes depending on conditions. The structure of a single tree almost pales against the variety of trees growing around our planet. Tall trees, spreading ones, trees that we often call "shrubs" - which are merely superbly adapted to their local environment - all reflect the immense diversity trees have developed over the ages. Although generally divided into but two forms, conifers and "flowering" trees, they comprise thousands of species, many probably still unknown.Tudge dedicates the second part of his book to descriptions of those variations. It is a catalogue of wonders as he depicts the oaks, beeches and other "common" types along with palms, celery pines and fruit trees. He begins with the ancient conifers, trees with a lineage stretching back nearly three hundred million years. That heritage shows in the varieties the conifers incorporate. From stately pines to humble ground-huggers, the conifers even include a parasitic member among their ranks. Angiosperms, the "flowering" trees, have surpassed the conifers in species number. The author lists each Order, with a list of the families and species. He explains why the numbers of species are in flux as new information about relationships comes to light. Tree habitats are also described with indications of where to find typical specimens.In last third of the book: "How Trees Live", Tudge demonstrates why he’s one of today’s leading science writers. He has accumlated a vast repetoire of information, and presents it with almost passionate style. Seemingly static from our viewpoint, trees have much to do in the course of their lives. They must keep the sun in view, and many forests are competitive

arenas to lift leaves into the light. There are seasons to keep track of, predators to discourage and to entice and employ helpers in the process of reproduction. Lacking brains, or other "intelligent" means, trees cannot manufacture devices for these needs. All must be accomplished with chemistry. Much of "the secret life of trees" is hidden here. With but five hormones and a handful of pigments to achieve their tasks, they have built up forms and methods to accomplish it all with an astounding degree of success.Tudge's adulation of trees goes beyond being simply informative. In his conclusion, he both endorses our need to increase our knowledge of trees and warns of the effects of our failure to do so. We may view trees as aesthetically pleasing or as a source of lumber or paper. Either way, we must deal with them properly. Hewing down vast forests does far more than leave a barren landscape. Trees are the source of the oxygen we breathe. They take up the carbon dioxide our society produces in such imposing quantities. Their capacity for that role has likely been exceeded at this point. Trees matter, he argues, and we need to know why and how. This book is an excellent starting point to find the answers to that learning quest. [stephen a. haines - Ottawa, Canada]

One of the most beloved and memorable of all popular poems is Joyce Kilmer's 'Trees' " I think that I shall never see/ a poem as lovely as a tree'/ A tree whose hungry mouth is prest/ against the earth's sweet flowing breast/.The sheer wonder, delight, and inspiration 'Trees' give to our poetic nature is only one side of what they are.In this learned and detailed study of Trees,Colin Tudge tells us more about them than we might ever have wanted to know. He describes the different species, provides a survival guide to the way Trees manage in often challenging environments, considers the special qualities of different kinds of trees, helps us understand how Trees are a benefit not only to the 'natural world' but to human civilization and society.He does this as he also points out the new dangers facing various species from global- warming. And he has specific recommendations on how we can better create an environment more beneficial to the natural world as a whole.The book is disappointingly poor in one element most of its readers will certainly want to have, good illustrations of Trees. But it nonetheless is an overall encyclopediac treasure for those for whom one of the natural world's great stars are an ongoing source of interest and attraction.

...but only an environment can make a tree. The necessary adaptation of plants to their environment, which makes some of them shape themselves as trees, is one of Colin Tudge's central points in this immense study of the evolutionary history of trees, of their fantastically complicated taxonomy, of their "life styles" as stationary but highly active organisms, and of their

place in a world increasingly managed by a species of primate whose origins were arboreal.As other reviewers have noted, The Tree has three distinct trunks. The first 86 pages - What Is a Tree? - answers its own question by stating that "a tree is a big plant with a pole in the middle". Later the author continues: "...there are many lineages of trees--quite separate evolutionary lines that have nothing to do with each other except that they are all plants...'Tree' is not a distinct category like 'dog' or 'horse,' It's just a way of being a plant." Thus it seems, the concept of 'tree' is more of a Platonic form than a solid scientific classification. Tudge continues to discuss the convergent evolution of trees in terms of their competitive adaptation to specific environments. I believe he would agree with me that the 'specific' is most often the root of the 'species.'The second section of the book - All the Trees in the World, 160 pages - is an exhaustive and exhausting catalog of the families, genera, and species of trees world-wide. Unless you are the kind of reader who finds taxomony more entertaining than table tennis, this plethora of info may blur in your mind and you may abandon the book before the final section. That would be a shame, since the final section is by far the most interesting. The good news is that you can vault over the trees without losing your way in the forest. In other words, I recommend reading the first and last portions of the book, and saving the middle third for occasions when you want information about certain species.The third portion of the book - two sections, The Life of Trees & Trees and Us - is the most exciting and could effectively stand alone. No longer focusing on "what" a tree is, Prof. Tudge examines "how" a tree is - that is, how various species of trees sprout, grow, interact, and reproduce. What a wealth of observations he presents! This reader, for instance, has walked under kerchillions of tree without ever noting that conifers buttress their heavy limbs by adding wood from under the bough, while flowering trees buttress by adding wood above the fork. I rushed to the nearest mixed forest after reading that, and by Odin, it's true!The final chapter discusses the importance of trees to human societies, past, present, and future. Prof. Tudge correctly assumes that trees can and must play a major role in the approaching crisis of anthropogenic global warming. Not only are trees very effective sequesterers of carbon while living, and not only does the destruction of forest release huge volumes of carbon into the atmosphere, but also the main product of trees - wood - could with proper foresight play a huge role in managing and slowing down global warming. Wood used for construction sequesters carbon just as effectively as living wood in the forest. There is one tree or another, according to Tudge, that can produce practical materials for almost any construction need, even including modest skyscrapers, and can replace almost any plastic. Furthermore, cultivation of trees could beneficially replace sugar, tobacco, cotton, and other economically inefficient crops, especially in currently destitute regions like Cuba, North Dakota, and the Sahel. There is a tree that could thrive

in nearly every environment, since diverse environments have already produced the fantastic diversity of trees.