

What A Plant Knows

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DYER ELIEZER

The language of plants explained

Mango Media Inc.

The news that a flowering weed—mousear cress (*Arabidopsis thaliana*)—can sense the particular chewing noise of its most common caterpillar predator and adjust its chemical defenses in response led to headlines announcing the discovery of the first “hearing” plant. As plants lack central nervous systems (and, indeed, ears), the mechanisms behind this “hearing” are unquestionably very different from those of our own acoustic sense, but the misleading headlines point to an overlooked truth: plants do in fact perceive environmental cues and respond rapidly to them by changing their chemical, morphological, and behavioral traits. In *Plant Sensing and Communication*, Richard Karban provides the first comprehensive overview of what is known about how plants perceive their environments, communicate those perceptions, and learn. Facing many of the same challenges as animals, plants have developed many similar capabilities: they sense light, chemicals, mechanical stimulation, temperature, electricity, and sound. Moreover, prior experiences have lasting impacts on sensitivity and response to cues; plants, in essence, have memory. Nor are their senses limited to the processes of an individual plant: plants eavesdrop on the cues and behaviors of neighbors and—for example, through flowers and fruits—exchange information with other types of organisms. Far from inanimate organisms limited by their stationary existence, plants, this book makes unquestionably clear, are in constant and lively discourse.

The Good, the Bad, and the Beautiful U of Minnesota Press

A captivating journey into the hidden lives of plants — from the colours they see to the schedules they keep. Join renowned biologist Daniel Chamovitz as he leads a beguiling exploration of how plants experience our shared Earth — in terms of sight, smell, touch, hearing, memory, and even awareness. Combining cutting-edge research with lively storytelling, he

explains the intimate details of plant behaviour, from how a willow tree knows when its neighbours have been commandeered by an army of ravenous beetles to why an avocado ripens when you give it the company of a banana in a bag. And he settles the debate over whether the beloved basil on your kitchen windowsill cares whether you play Led Zeppelin or Bach. Thoroughly updated from root to leaf, this revised edition of the groundbreaking *What a Plant Knows* includes new revelations for green thumbs, science buffs, vegetarians, and nature lovers. This rare inside look at what life is really like for the grass we walk on, the flowers we sniff, and the trees we climb will surprise and delight you.

National Trust

Despite their conceptual allergy to vegetal life, philosophers have used germination, growth, blossoming, fruition, reproduction, and decay as illustrations of abstract concepts; mentioned plants in passing as the natural backdrops for dialogues, letters, and other compositions; spun elaborate allegories out of flowers, trees, and even grass; and recommended appropriate medicinal, dietary, and aesthetic approaches to select species of plants. In this book, Michael Marder illuminates the elaborate vegetal centerpieces and hidden kernels that have powered theoretical discourse for centuries. Choosing twelve botanical specimens that correspond to twelve significant philosophers, he recasts the development of philosophy through the evolution of human and plant relations. A philosophical history for the postmetaphysical age, *The Philosopher’s Plant* reclaims the organic heritage of human thought. With the help of vegetal images, examples, and metaphors, the book clears a path through philosophy’s tangled roots and dense undergrowth, opening up the discipline to all readers.

Mushrooms W. W. Norton & Company

The world of plants and its relation to mankind as revealed by the latest scientific discoveries. "Plenty of hard facts and astounding scientific and practical lore."--Newsweek

In Defense of Plants Harvard University Press

This fascinating account of eleven remarkable, eccentric, dedicated, and sometimes obsessive individuals that established the science of botany brings to life these extraordinary adventurers and draws out the scientific and cultural value of their work and its legacy.

[A Guide to the More Common Trees Found in North America](#) Harvard University Press

A globe-trotting, behind-the-scenes look at the dazzling world of flowers and the fascinating industry it has created. Award-winning author Amy Stewart takes readers on an around-the-world, behind-the-scenes look at the flower industry and how it has sought—for better or worse—to achieve perfection. She tracks down the hybridizers, geneticists, farmers, and florists working to invent, manufacture, and sell flowers that are bigger, brighter, and sturdier than anything nature can provide. There's a scientist intent on developing the first genetically modified blue rose; an eccentric horticultural legend who created the most popular lily; a breeder of gerberas of every color imaginable; and an Ecuadorean farmer growing exquisite roses, the floral equivalent of a Tiffany diamond. And, at every turn she discovers the startling intersection of nature and technology, of sentiment and commerce.

The Restless Plant W. W. Norton & Company

Carlos Magdalena is a man on a mission: to save the world’s most endangered plants. In *The Plant Messiah*, Magdalena takes readers from the forests of Peru to deep within the Australian outback in search of the rare and the vulnerable. Back in the lab—at the Royal Botanic Gardens, Kew, home of the largest botanical collection in the world—we watch as he develops groundbreaking, left-field techniques for rescuing species from extinction, encouraging them to propagate and thrive once again. Passionate and absorbing, *The Plant Messiah* is a tribute to the diversity of life on our planet, and to the importance of preserving it.

[An Exploration into the Wonder of Plants](#) Greenleaf Book Group

The Study of Plants in a Whole New Light “Matt Candeias succeeds in evoking the

wonder of plants with wit and wisdom.”
—James T. Costa, PhD, executive director, Highlands Biological Station and author of *Darwin's Backyard #1* New Release in Nature & Ecology, Plants, Botany, Horticulture, Trees, Biological Sciences, and Nature Writing & Essays In his debut book, internationally-recognized blogger and podcaster Matt Candeias celebrates the nature of plants and the extraordinary world of plant organisms. A botanist's defense. Since his early days of plant restoration, this amateur plant scientist has been enchanted with flora and the greater environmental ecology of the planet. Now, he looks at the study of plants through the lens of his ever-growing houseplant collection. Using gardening, houseplants, and examples of plants around you, *In Defense of Plants* changes your relationship with the world from the comfort of your windowsill. The ruthless, horny, and wonderful nature of plants. Understand how plants evolve and live on Earth with a never-before-seen look into their daily drama. Inside, Candeias explores the incredible ways plants live, fight, have sex, and conquer new territory. Whether a blossoming botanist or a professional plant scientist, *In Defense of Plants* is for anyone who sees plants as more than just static backdrops to more charismatic life forms. In this easily accessible introduction to the incredible world of plants, you'll find:

- Fantastic botanical histories and plant symbolism
- Passionate stories of flora diversity and scientific names of plant organisms
- Personal tales of plantsman discovery through the study of plants

If you enjoyed books like *The Botany of Desire*, *What a Plant Knows*, or *The Soul of an Octopus*, then you'll love *In Defense of Plants*.

Lab Girl Vintage

The suburban lawn sprouts a crop of contradictory myths. To some, it's a green oasis; to others, it's eco-purgatory. Science writer Hannah Holmes spent a year appraising the lawn through the eyes of the squirrels, crows, worms, and spiders who think of her backyard as their own. *Suburban Safari* is a fascinating and often hilarious record of her discoveries: that many animals adore the suburban environment, including bears and cougars venturing in from the woods; how plants, in their struggle for dominance, communicate with their own kind and battle other species; and that ways already exist for us to grow healthier, livelier lawns.

A Novel University Press of Florida Cultural history at its best—the engaging, lively, and definitive story of the beauty, sexuality, ecology, myths, lore, and

economics of the world's flowers, written by a passionately devoted author and scientist, and illustrated with his stunning photographs. Flowers, and the fruits that follow, feed, clothe, sustain, and inspire all humanity. They have done so since before recorded history. Flowers are used to celebrate all-important occasions, to express love, and are also the basis of global industries. Americans buy ten million flowers a day and perfumes are a worldwide industry worth \$30 billion dollars annually. Yet, we know little about flowers, their origins, bizarre sex lives, or how humans relate and depend upon them. Stephen Buchmann takes us along on an exploratory journey of the roles flowers play in the production of our foods, spices, medicines, perfumes, while simultaneously bringing joy and health. Flowering plants continue to serve as inspiration in our myths and legends, in the fine and decorative arts, and in literary works of prose and poetry. Flowers seduce us—and animals, too—through their myriad shapes, colors, textures, and scents. And because of our extraordinary appetite for more unusual and beautiful “super flowers,” plant breeders have created such unnatural blooms as blue roses and black petunias to cater to the human world of haute couture fashion. In so doing, the nectar and pollen vital to the bees, butterflies, and bats of the world, are being reduced. Buchmann explains the unfortunate consequences, and explores how to counter them by growing the right flowers. Here, he integrates fascinating stories about the many colorful personalities who populate the world of flowers, and the flowers and pollinators themselves, with a research-based narrative that illuminates just why there is, indeed, a Reason for Flowers.

The Botany of Desire SUNY Press

“If you've ever fantasized walking and conversing with the great scientist on the subjects that consumed him, and now wish to add the fullness of reality, read this book.” —Edward O. Wilson, author of *Half-Earth: Our Planet's Fight for Life* James T. Costa takes readers on a journey from Darwin's childhood through his voyage on the HMS Beagle, where his ideas on evolution began, and on to Down House, his bustling home of forty years. Using his garden and greenhouse, the surrounding meadows and woodlands, and even the cellar and hallways of his home-turned-field-station, Darwin tested ideas of his landmark theory of evolution through an astonishing array of experiments without using specialized equipment. From those results, he plumbed the laws of nature and drew evidence for the revolutionary

arguments of *On the Origin of Species* and other watershed works. This unique perspective introduces us to an enthusiastic correspondent, collaborator, and, especially, an incorrigible observer and experimenter. And it includes eighteen experiments for home, school, or garden. Finalist for the 2018 AAAS/Subaru SB&F Prizes for Excellence in Science Books.

A Field Guide to the Senses of Your Garden - and Beyond Hachette UK

A captivating journey into the inner lives of plants – from the colours they see to the schedules they keep How does a Venus flytrap know when to snap shut? Can an orchid get jet lag? Does a tomato plant feel pain when you pluck a fruit from its vines? And does your favourite fern care whether you play Bach or the Beatles? Combining cutting-edge research with lively storytelling, biologist Daniel Chamovitz explores how plants experience our shared Earth – through sight, smell, touch, hearing, memory, and even awareness. Whether you are a green thumb, a science buff, a vegetarian, or simply a nature lover, this rare inside look at the life of plants will surprise and delight.

Genes, Germs, and the Curious Forces That Make Us Who We Are North Atlantic Books

Paralleling the human senses, the author explores the secret lives of various plants, from the colors they see to whether or not they really like classical music to their ability to sense nearby danger.

The Paradox of Plant Diversity Penguin

“Highly entertaining...Mabey gets us to look at life from the plants' point of view.” —Constance Casey, *New York Times* *The Cabaret of Plants* is a masterful, globe-trotting exploration of the relationship between humans and the kingdom of plants by the renowned naturalist Richard Mabey. A rich, sweeping, and wonderfully readable work of botanical history, *The Cabaret of Plants* explores dozens of plant species that for millennia have challenged our imaginations, awoken our wonder, and upturned our ideas about history, science, beauty, and belief. Going back to the beginnings of human history, Mabey shows how flowers, trees, and plants have been central to human experience not just as sources of food and medicine but as objects of worship, actors in creation myths, and symbols of war and peace, life and death. Writing in a celebrated style that the *Economist* calls “delightful and casually learned,” Mabey takes readers from the Himalayas to Madagascar to the Amazon to our own backyards. He ranges through the work of writers, artists, and

scientists such as da Vinci, Keats, Darwin, and van Gogh and across nearly 40,000 years of human history: Ice Age images of plant life in ancient cave art and the earliest representations of the Garden of Eden; Newton's apple and gravity, Priestley's sprig of mint and photosynthesis, and Wordsworth's daffodils; the history of cultivated plants such as maize, ginseng, and cotton; and the ways the sturdy oak became the symbol of British nationhood and the giant sequoia came to epitomize the spirit of America. Complemented by dozens of full-color illustrations, *The Cabaret of Plants* is the magnum opus of a great naturalist and an extraordinary exploration of the deeply intertwined history of humans and the natural world.

A Field Guide to the Senses Oxford University Press, USA

The book that helped make Michael Pollan, the New York Times bestselling author of *How to Change Your Mind*, *Cooked* and *The Omnivore's Dilemma*, one of the most trusted food experts in America. Every schoolchild learns about the mutually beneficial dance of honeybees and flowers: The bee collects nectar and pollen to make honey and, in the process, spreads the flowers' genes far and wide. In *The Botany of Desire*, Michael Pollan ingeniously demonstrates how people and domesticated plants have formed a similarly reciprocal relationship. He masterfully links four fundamental human desires—sweetness, beauty, intoxication, and control—with the plants that satisfy them: the apple, the tulip, marijuana, and the potato. In telling the stories of four familiar species, Pollan illustrates how the plants have evolved to satisfy humankind's most basic yearnings. And just as we've benefited from these plants, we have also done well by them. So who is really domesticating whom?

The Surprising History and Science of Plant Intelligence Grand Central Publishing

For many people, the story of Charles Darwin goes like this: he ventured to the Galapagos Islands on the *Beagle*, was inspired by the biodiversity of the birds he saw there, and immediately returned home to write his theory of evolution. But this simplified narrative is inaccurate and lacking: it leaves out a major part of Darwin's legacy. He published *On the Origin of Species* nearly thirty years after his voyages. And much of his life was spent experimenting with and observing plants. Darwin was a brilliant and revolutionary botanist whose observations and theories were far ahead of his time. With *Darwin's Most Wonderful Plants*,

biologist and gardening expert Ken Thompson restores this important aspect of Darwin's biography while also delighting in the botanical world that captivated the famous scientist. Thompson traces how well Darwin's discoveries have held up, revealing that many are remarkably long-lasting. Some findings are only now being confirmed and extended by high-tech modern research, while some have been corrected through recent analysis. We learn from Thompson how Darwin used plants to shape his most famous theory and then later how he used that theory to further push the boundaries of botanical knowledge. We also get to look over Darwin's shoulder as he labors, learning more about his approach to research and his astonishing capacity for hard work. Darwin's genius was to see the wonder and the significance in the ordinary and mundane, in the things that most people wouldn't look at twice. Both Thompson and Darwin share a love for our most wonderful plants and the remarkable secrets they can unlock. This book will instill that same joy in casual gardeners and botany aficionados alike.

The Science of Jellyfish and the Art of Growing a Backbone Island Press

"Fascinating...full of optimism...this quick, accessible read will appeal to anyone with interest in how plants continue to surprise us." —Library Journal Do plants have intelligence? Do they have memory? Are they better problem solvers than people? *The Revolutionary Genius of Plants*—a fascinating, paradigm-shifting work that upends everything you thought you knew about plants—makes a compelling scientific case that these and other astonishing ideas are all true. Plants make up eighty percent of the weight of all living things on earth, and yet it is easy to forget that these innocuous, beautiful organisms are responsible for not only the air that lets us survive, but for many of our modern comforts: our medicine, food supply, even our fossil fuels. On the forefront of uncovering the essential truths about plants, world-renowned scientist Stefano Mancuso reveals the surprisingly sophisticated ability of plants to innovate, to remember, and to learn, offering us creative solutions to the most vexing technological and ecological problems that face us today. Despite not having brains or central nervous systems, plants perceive their surroundings with an even greater sensitivity than animals. They efficiently explore and react promptly to potentially damaging external events thanks to their cooperative, shared systems; without any central command centers, they are able to remember prior catastrophic events and to

actively adapt to new ones. Every page of *The Revolutionary Genius of Plants* bubbles over with Stefano Mancuso's infectious love for plants and for the eye-opening research that makes it more and more clear how remarkable our fellow inhabitants on this planet really are. In his hands, complicated science is wonderfully accessible, and he has loaded the book with gorgeous photographs that make for an unforgettable reading experience. *The Revolutionary Genius of Plants* opens the doors to a new understanding of life on earth.

Science, Philosophy, Literature

Columbia University Press

Over the past century, our species has made unprecedented technological innovations with which we have sought to control nature. From river levees to enormous one-crop fields, we continue to try to reshape nature for our purposes - so much so it seems we may be in danger of destroying it. In *A Natural History of the Future*, biologist Rob Dunn argues that nothing could be further from the truth: rather than asking whether nature will survive us, better to ask whether we will survive nature. Despite our best - or worst - efforts to control the biological world, life has its own rules, and no amount of human tampering can rewrite them. Elucidating several fundamental laws of ecology, evolution, and biogeography, Dunn shows why life cannot be stopped. We sequester our crops on monocultured fields, only to find new life emerging to attack them. We dump toxic waste only to find microbes to colonize it. And even in the London Tube, we have seen a new species of mosquito emerge to take advantage of an apparently inhospitable habitat. Life will not be repressed by our best-laid plans. Instead, Dunn shows us a vision of the biological future and the challenges the next generations could face. *A Natural History of the Future* sets a new standard for understanding the diversity of life and our future as a species.

A Philosophical Botany Reaktion Books From the internationally bestselling author who Stephen King calls "an absolute master," a "gripping and eerie" (Karin Slaughter) thriller about a dangerous young woman with the ability to know when someone is lying—and the criminal psychologist who must outwit her to survive. A girl is discovered hiding in a secret room in the aftermath of a terrible crime. Half-starved and filthy, she won't tell anyone her name, or her age, or where she came from. Maybe she is twelve, maybe fifteen. She doesn't appear in any missing persons file, and her DNA can't be

matched to an identity. Six years later, still unidentified, she is living in a secure children's home with a new name, Evie Cormac. When she initiates a court case demanding the right to be released as an adult, forensic psychologist Cyrus Haven must determine if Evie is ready to go free. But she is unlike anyone he's ever met—fascinating and dangerous in equal measure. Meanwhile, Cyrus is called in to investigate the shocking murder of a high

school figure-skating champion, Jodie Sheehan, who died on a lonely footpath close to her home. Pretty and popular, Jodie is portrayed by everyone as the ultimate girl-next-door, but as Cyrus peels back the layers, a secret life emerges—one that Evie Cormac, the girl with no past, knows something about. A man haunted by his own tragic history, Cyrus is caught between the two cases—one girl who needs saving and another who needs justice. What price will

he pay for the truth? Emotionally explosive and swiftly paced, this is an "impeccable thriller with a plot that encompasses murder, incest, drugs, abuse, torture, sex—you name it, this book has it" (New York Journal of Books).

What the Laws of Biology Tell Us About the Destiny of the Human Species University of Chicago Press
What a Plant Knows A Field Guide to the Senses Macmillan