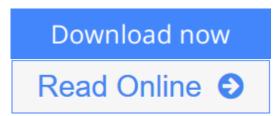


Honeybee Democracy

By Thomas D. Seeley



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Honeybees make decisions collectively--and democratically. Every year, faced with the life-or-death problem of choosing and traveling to a new home, honeybees stake everything on a process that includes collective fact-finding, vigorous debate, and consensus building. In fact, as world-renowned animal behaviorist Thomas Seeley reveals, these incredible insects have much to teach us when it comes to collective wisdom and effective decision making. A remarkable and richly illustrated account of scientific discovery, *Honeybee Democracy* brings together, for the first time, decades of Seeley's pioneering research to tell the amazing story of house hunting and democratic debate among the honeybees.

In the late spring and early summer, as a bee colony becomes overcrowded, a third of the hive stays behind and rears a new queen, while a swarm of thousands departs with the old queen to produce a daughter colony. Seeley describes how these bees evaluate potential nest sites, advertise their discoveries to one another, engage in open deliberation, choose a final site, and navigate together--as a swirling cloud of bees--to their new home. Seeley investigates how evolution has honed the decision-making methods of honeybees over millions of years, and he considers similarities between the ways that bee swarms and primate brains process information. He concludes that what works well for bees can also work well for people: any decision-making group should consist of individuals with shared interests and mutual respect, a leader's influence should be minimized, debate should be relied upon, diverse solutions should be sought, and the majority should be counted on for a dependable resolution.

An impressive exploration of animal behavior, *Honeybee Democracy* shows that decision-making groups, whether honeybee or human, can be smarter than even the smartest individuals in them.



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Editorial Review

From Booklist

Entomologist E. O. Wilson calls honeybees ?humanity?s greatest friend among the insects.? Cornell professor and ardent beekeeper Seeley (The Wisdom of the Hive, 1995) examines how bees make decisions on where to found a new hive. Beekeepers have known for years that overcrowded hives will swarm?the majority of the hive?s workers will take off with the old queen and move into a new home, while the remaining bees will rear a new queen in order to perpetuate the parental colony. How the homeless swarm of bees decides where to live, and the settling of the debates among the scout bees who have found potential homesites, forms the basis of this intriguing look at how social insects arrive at a consensus. Seeley takes the reader through the research process, discussing the findings of earlier scientists, the process of field research on bee swarms, and the understanding of what the resulting data means in the lives of the bees. Forager bees become scout bees who, after returning to the swarm, perform a ?dance? to show where and how far away the potential site is. Other scouts check out these locations and join in the dance for whichever site is preferred. This ?arguing? over the best site eventually results in all the scouts agreeing and the whole swarm then moving to its new abode. Now if we humans could only make decisions so democratically. --Nancy Bent

Review

One of *Financial Times* (FT.com)'s Books of the Year in Nonfiction Round-Up in the Science & Environment list for 2010

"Dr. Seeley is an engaging guide. His enthusiasm and admiration for honeybees is infectious. His accumulated research seems truly masterly, doing for bees what E.O. Wilson did for ants."--Katherine Bouton, *New York Times*

"Although the details are complicated, Seeley's explanations are remarkably clear. The text is abundantly illustrated with figures that are cleverly simplified in comparison to how they might appear in scientific journals. For readers who may be less passionate about the particulars of honeybee life, Seeley also reveals parallels between the way swarms make decisions and how the human brain sorts through conflicting neuron signals to reach decisions. He also provides a few pointers on how rules of honeybee democracy may be applied to decision-making in human groups, with minimal dependence on a leader, vigorous competition among a diversity of viewpoints, and a method for determining a majority-based resolution."--May Berenbaum, *Times Literary Supplement*

"Seeley's work--extended over years and summarized clearly and engagingly here--is a model of biological research that builds bridges to the social sciences, and to the practical arts of institutional design for humans."--Adrian Vermeule, *New Republic's The Book*

"[S]plendid."--John Whitfield, Nature

"[E] ngaging and fascinating. . . . Seeley writes with infectious enthusiasm. . . . *Honeybee Democracy* offers wonderful testament to his career of careful investigation of a remarkable natural phenomenon. The breadth and depth of the studies reported in it should inspire all students of animal behavior."--*Science*

"To illustrate bee decision making, Seeley details how swarms choose a new home. Seeley presents his material with charm, and the bees' system of house-hunting becomes surprising and awe-inspiring."--Science

News

"In *Honeybee Democracy*, Seeley carefully narrates his many seasons of experiments using plywood next boxes that could be moved and modified at will. He discovered what bees like in a home, how scouts measure the dark interiors of these boxes and most of all, how the swarm 'votes' to decide which nest to occupy. . . . *Honeybee Democracy* is a brilliant display of science at work, with each experiment explained and illustrated."--*New Scientist*

"[I]t is a book well worth studying. Within its pages we find out about an important aspect of the life of the honeybee (with some practical implications for beekeepers), how researchers work both in the field and in the laboratory, the objective way in which the experiments are carried out but, most of all, how in the seeking of a new home bees provide us with a model of true democratic behaviour which any group could use to its advantage. Indeed, the last chapter alone, 'Swarm Starts' would make an excellent minibook for anyone who is involved in decision making no matter what position they hold."--Beekeepers Quarterly

"Rather than presenting a dry review of his findings, Seeley intertwines them with his thought processes, anecdotes and generous appraisals of students and fellow scientists. His skill in writing a book with so much science in such simple language is admirable. Even a non-beekeeper can understand what he is trying to convey. The photographs are beautiful and the illustrations elegant."--Zachary Huang, *Times Higher Education*

"The year's most enchanting science book."--Financial Times (FT Critics Pick 2010)

"Honeybee Democracy, by Thomas D. Seeley, will teach you everything you ever wanted to know about one of the world's most beneficial insects. . . . Seeley, a biologist and beekeeper, presents his excellent understanding of what makes the bees' society work for the survival of the species."--Washington Post

"His argument is seductive. . . . [R]eading *Honeybee Democracy* is a delightful way to spend an evening."--*National Post*

"[O]ne cannot help but be inspired by the beauty of Seeley's hypothesis-driven experimental work. The book is beautifully presented with illustrations, photographs, charts and anecdotes, and succeeds in making the whole field of investigation accessible to the non-specialist. . . . [O]ne is swept away by Thomas Seeley's enthusiasm for a subject that is clearly his passion."--Philippine Rudolf, *British Politics and Policy*

"Seeley shares his 35-plus years of experience working with bees. He presents a very interesting treatise about his research (as well as that of other scientists) on these eusocial insects and their fast and accurate group decision making when choosing the colony's new dwelling place. This very well-written book is also beautifully illustrated, highly informative, and educational."--*Choice*

"[T]his work makes an important contribution to a growing body of literature in disciplines removed from political science or sociology (such as biology in this case). It is felt that this may help us to understand what this enigmatic term or concept 'democracy' might actually be. To finish, this book comes highly recommended to any interested in learning about a new non-human democratic typology."--Jean-Paul Gagnon, *Journal of Democratic Theory*

"Princeton University Press is to be congratulated in producing a book that is great value for the money and beautifully produced. The author is to be congratulated in writing a book that in its content and voice will reach and satisfy both scientists and nonscientists, both bee people and those not yet bitten (or stung).

Honeybee Democracy is both easy and enjoyable to read."--Francis L. W. Ratnieks, Animal Behaviour

"Seeley writes in an engaging and entertaining style. He also manages to explain complicated facts in easily understandable prose without compromising on the scientific information, and his comparisons with human behaviour and democratic practices are telling. . . . The author aimed to bolster, 'an appreciation of these little creatures'. Mission accomplished. It's hard to not be fascinated by the, 'little six-legged beauties.'"--Uli Ernst, Lab Times

"[Honeybee Democracy is] an exceptional combination of memoir, entomology, and political philosophy."--Carl Zimmer, DiscoverMagazine.com's *The Loom* blog

"Reading Tom Seeley's book will give you an understanding of bees which will help your beekeeping. . . . Like all the author's books and papers, this one is worth a place in your bee library."--Adrian Waring, Bee Craft

From the Back Cover

"Honeybee Democracy is a wonderful book, beautifully written and illustrated, about humanity's greatest friend among the insects. The honeybee is important not only for its role in agriculture but for what it has taught us concerning the fundamental nature of complex social organization. Seeley, its leading authority, here presents it to a broad readership, with scientific exactitude written in lyrical prose."--Edward O. Wilson, coauthor of *The Superorganism*

"From bees to brains, Seeley takes us on a remarkable scientific journey of discovery. Through a landmark series of studies, he explores how honeybee swarms decide where to relocate, and from this fascinating tale of life or death, he gives us deep insights into how social systems can make good choices without global information or direct leadership. This book is a masterpiece of intense investigation, careful thought, clear writing, and love for one's subject."--John Miller, Carnegie Mellon University and the Santa Fe Institute

"Seeley presents an engaging story of honeybees, hives, and scientific investigators to illustrate how choices are made through self-organization in hives, human brains, and even town meetings. *Honeybee Democracy* offers practical lessons told through vivid language."--Jeffrey D. Schall, E. Bronson Ingram Professor of Neuroscience, Vanderbilt University

"Honeybee Democracy is a sheer delight. Seeley, a superb scientist and a gifted communicator, shares fascinating learning and lessons from his splendid work with these remarkable insects. His enthusiasm is infectious and he persuasively shows that there is a great deal humans can gain from studying swarm smarts. I love this book and recommend it highly."--Michael J. Mauboussin, author of *Think Twice: Harnessing the Power of Counterintuition*

"Honeybee Democracy tells one of the great stories of biology and is pertinent to general readers everywhere."--Bernd Heinrich, author of Winter World: The Ingenuity of Animal Survival

"Honeybee Democracy is a pleasure to read. Seeley conveys the bee scientist's love and respect for the honeybee, the ingenuity necessary for uncovering the secrets of honeybee life, and the fun that is had in doing so. In an era increasingly dominated by big science and its technology, this book reminds us that a common insect and a few ingenious researchers, armed with equipment obtainable from the local shopping mall, can lead us into a remarkable world."--Francis Ratnieks, University of Sussex

Users Review

From reader reviews:

Kathy Hunnicutt:

As people who live in the particular modest era should be update about what going on or information even knowledge to make these people keep up with the era that is always change and move ahead. Some of you maybe will certainly update themselves by studying books. It is a good choice to suit your needs but the problems coming to an individual is you don't know which one you should start with. This Honeybee Democracy is our recommendation to make you keep up with the world. Why, because this book serves what you want and want in this era.

Nicole Garner:

Playing with family inside a park, coming to see the water world or hanging out with good friends is thing that usually you will have done when you have spare time, then why you don't try matter that really opposite from that. A single activity that make you not sensation tired but still relaxing, trilling like on roller coaster you have been ride on and with addition details. Even you love Honeybee Democracy, you could enjoy both. It is good combination right, you still need to miss it? What kind of hang-out type is it? Oh come on its mind hangout men. What? Still don't get it, oh come on its called reading friends.

Therese Watson:

The book untitled Honeybee Democracy contain a lot of information on the idea. The writer explains her idea with easy means. The language is very easy to understand all the people, so do not really worry, you can easy to read that. The book was published by famous author. The author provides you in the new era of literary works. It is possible to read this book because you can read on your smart phone, or device, so you can read the book within anywhere and anytime. In a situation you wish to purchase the e-book, you can available their official web-site as well as order it. Have a nice examine.

Vivian Regan:

As a student exactly feel bored to reading. If their teacher inquired them to go to the library or to make summary for some publication, they are complained. Just tiny students that has reading's heart and soul or real their interest. They just do what the educator want, like asked to go to the library. They go to there but nothing reading really. Any students feel that studying is not important, boring as well as can't see colorful pics on there. Yeah, it is to become complicated. Book is very important for yourself. As we know that on this age, many ways to get whatever you want. Likewise word says, many ways to reach Chinese's country. Therefore this Honeybee Democracy can make you feel more interested to read.

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