

# what one book

Recommendations on a Selected Topic

## Scientists



As long as we've been around, we've searched for laws governing the universe; this scientific quest has often been viewed as a major factor in the progress of civilization. As early as the 18th century BC, an example of Pythagoras's law was recorded; soon after, the Babylonians left clay tablets with notes about astronomy. Today, with the quest for scientific knowledge institutionalized in society, we're rapidly discovering that what we *don't* yet understand about parts of the world just may surpass what we *do*.

The books below offer just a small sampling of the many biographies, memoirs, and novels about scientists. We've chosen a mix of worthy selections—by no means comprehensive—that offer insight into various scientific disciplines, from physics to ecology, and their key figures, most working in the 19th and 20th centuries.

### General Overviews

#### Heisenberg Probably Slept Here

**The Lives, Times, and Ideas of the Great Physicists of the 20th Century (1996)**

By Richard P. Brennan



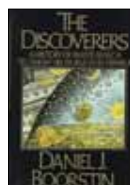
In this fascinating, well-written overview, Brennan offers biographical sketches of seven great 20th-century scientists: Albert Einstein, Max Planck, Ernest Rutherford, Niels Bohr, Werner Heisenberg, Richard Feynman, and Murray Gell-Mann. Although their “father” was Isaac Newton, Brennan demonstrates how these scientists reformulated Newtonian mechan-

ics to rework our understanding of the universe on a fundamental level. This book isn't meant for the physics expert; rather, it provides an entertaining and clear, if somewhat superficial, account of scientists grappling with problems such as relativity during a turbulent time in world history.

#### The Discoverers

**A History of Man's Search to Know His World and Himself (1983)**

By Daniel J. Boorstin

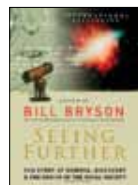


In this majestic history of science, the first entry in the Knowledge Trilogy (followed by *The Creators: A History of Heroes of the Imagination* [1992] and *The Seekers: The Story of Man's Continuing Quest to Understand His World* [1998]), Boorstin, Librarian of Congress Emeritus and previous director of the National Museum for History and Technology and the Smithsonian Institution, tells the story of how we came to understand our world. He presents stories of discovery in many forms—from exploration to science, medicine, geology, anatomy and mathematics—and taking an individual approach to the study of historical change, he examines scientific pioneers such as Galileo, Newton, Columbus, Darwin, Gutenberg, Brahe, and Freud, who broke with the past. Although rather idiosyncratic and biased toward Western science and culture, few volumes provide such insight into different cultures' searches for understanding of the natural and physical world.

#### Seeing Further

**The Story of Science, Discovery, and the Genius of the Royal Society (2010)**

Edited by Bill Bryson



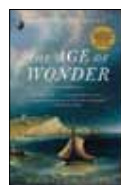
In *A Short History of Nearly Everything* (★★★★ July Aug 2003), Bryson drew on geology, cosmology, astronomy, and paleontology to

address questions about the world and our place in it. In this collection of essays celebrating the 350th anniversary of the founding of the Royal Society of London (once headed by Isaac Newton), scientists and novelists—including Martin Rees, Richard Dawkins, Margaret Atwood, Richard Fortey, Gregory Benford, and Paul Davies—celebrate the society's scientific contributions. Pieces range from the image of the scientist as a “mad scientist” to reflections on the revolutionary aspects of Darwin's discoveries and the nature of time. An accessible, illustrated introduction to various scientific disciplines and their key figures.

#### The Age of Wonder

**How the Romantic Generation Discovered the Beauty and Terror of Science (2009)**

By Richard Holmes



Starting with botanist Joseph Banks's 1769 arrival in Tahiti and ending with Charles Darwin's trip to the Galapagos in 1831, *The Age of Wonder* offers a group portrait of British scientists in an era—the late 18th and early 19th centuries—that Holmes claims was dominated not only by

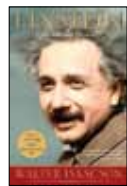
a Romantic imagination but also by major scientific advances. Among others, he focuses on astronomer William Herschel, who discovered Uranus and the finite life of the Milky Way, and his assistant-sister Caroline; chemist and poet Humphry Davy, who experimented with laughing gas; and the impacts of ballooning, Romantic poetry, and Mary Shelley's *Frankenstein* on the world's life forces. A timely, fascinating guide to many of today's lingering controversies. (★★★★ SELECTION Sept/Oct 2009)

## Biographies

### Einstein

**His Life and Universe (2007)**

By Walter Isaacson



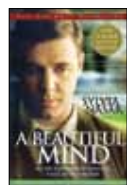
Noted biographer Isaacson brings one of the greatest thinkers to life. As a young man, Einstein declared, "Long live impudence. It's my guardian angel in the world." Indeed, his disregard for convention characterized his life and career. As a humble patent clerk in 1905, Einstein published four papers that rocked the scientific establishment and revolutionized the field of physics. Ten years later, he developed the General Theory of Relativity, earning a Nobel Prize despite the opposition of anti-Semitic colleagues. Through two marriages, two world wars, and a meteoric rise to fame, Einstein became one of the greatest minds of the 20th century. A rich, rewarding book for readers interested in understanding Einstein's contribution to science. (★★★★ SELECTION July/Aug 2007)

### A Beautiful Mind

**The Life of Mathematical Genius and Nobel Laureate John Nash (1998)**

By Sylvia Nasar

◆ NATIONAL BOOK CRITICS CIRCLE AWARD



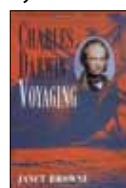
In 1994, economist and mathematician John Forbes Nash, Jr., won the Nobel Prize in Economics. Yet his path to success and fame was not without

hardship: throughout his life, he suffered from schizophrenia. *A Beautiful Mind* follows Nash's years at Princeton and MIT, his work for the Rand Corporation during the Cold War, his relationships with his family, his work on game theory and mathematics (and their influence on sciences such as cosmology), and his mental illness. Above all, however, *A Beautiful Mind* offers a compelling (and, for nonscientists, a nontechnical) perspective on genius marred by mental disability.

### Charles Darwin

**A Biography, Vol. 1 (1995)**

By Janet Browne



The first part of this two-volume, definitive biography focuses on Darwin's five-year expedition on the *Beagle*, where Darwin cultivated his interest in nature and geology. Brown places Darwin's growing interest in evolution against the backdrop of his personal life and his clash with his staid Victorian culture. The biography offers new insights into Darwin's childhood, education, and early research. See also Browne's *Charles Darwin: A Biography, Vol. 2: The Power of Place* (2002) and *Darwin's Origin of Species: A Biography* (2007), as well as the original source for Browne's work, *The Autobiography of Charles Darwin*—a short portrait of Darwin in late middle age, his relationship with his family, and the background of his thinking for *On the Origin of Species*.

### A Feeling for the Organism

**The Life and Work of Barbara McClintock (1983)**

By Evelyn Fox Keller



Barbara McClintock, the 1983 Nobel laureate in Physiology or Medicine, was an American scientist and one of the world's most distinguished cytogeneticists. Her groundbreaking work on chromosomes, however, was overshadowed by the work of molecular biologists and the DNA revolution in the mid-20th century. Rekindled interest in her work years later earned

her a Nobel Prize and major recognition. Keller offers insights into McClintock's work as a scientist and her relationships with others, as well as the role of women in science. In sum: a portrait of one of the most important figures in 20th-century science.

## Memoirs

### Surely You're Joking, Mr. Feynman!

**Adventures of a Curious Character (1985)**

By Richard P. Feynman



This autobiography—really a series of anecdotes—by the Nobel Prize-winning physicist has remained popular since its publication. Feynman, known for his work on the Manhattan Project, covers the serious and the not-so-serious—from gambling and bongo drums to his love of topless bars, the process of discovery, and his work on the atomic bomb and quantum mechanics. Hilarious, rebellious, and at times offensive, this memoir offers some real lessons on knowledge, understanding, and problem solving. Endearing and passionate, it is not only for anyone interested in math and physics but also for general readers fascinated by scientific creativity. See also James Gleick's *Genius: The Life and Science of Richard Feynman* (1992) and Lawrence M. Krauss's *Quantum Man: Richard Feynman's Life in Science* (2011).

### The Double Helix

**A Personal Account of the Discovery of the Structure of DNA (1968)**

By James D. Watson



Watson, along with Francis Crick and Maurice Wilkins, won the Nobel Prize in Physiology or Medicine in 1962. Despite this highest of accolades, Watson writes, "science seldom proceeds in the straightforward logical manner imagined by outsiders." In this memoir, Watson recounts the not-so-straight path to his discovery (with Crick) of the structure of DNA, the building block of life.

Besides providing plenty of scientific lore and sterile laboratories, Watson also describes the competition and the melodrama inherent in scientific endeavors as well as the true personalities of his fellow scientists and their many rivalries.

### Gorillas in the Mist

By Dian Fossey (1983)



In 1963, Fossey—an occupational therapist from Kentucky—traveled to Africa with the hopes of setting eyes on a mountain gorilla. After meeting primatologists Mary and Louis Leakey, she ended up spending 13 years in a remote, Rwandan rainforest with four gorilla families, working to ensure the survival of this endangered species. This memoir combines Fossey's passion and experience with scientific reporting as she recounts her time with the gorillas, their peaceful nature, and the poachers who hunted them to sell on the black market. Fossey was tragically murdered, probably by poachers, in 1985; *Gorillas in the Mist* stands as testament to her important work.

### John Muir

#### Nature Writings

By John Muir, ed. by William Cronon (1997)



This volume contains the 19th-century Scottish expatriate's major writings about his personal life and his life as a naturalist, inextricably intertwined. In each selection, Muir imparts his awe of people and nature and his growing understanding of America's geology, flora, and fauna—from life on his family's Wisconsin farm to his walk across America to the Sierra Mountains and his experience on an Alaskan glacier. The volume also contains informative notes on Muir's field journals and a chronology of his life, career, and extraordinary influence on the preservation of wilderness. Not dated, Muir's writings are as timely today as they were a century ago.

### The Demon-Haunted World

#### Science as a Candle in the Dark (1995)

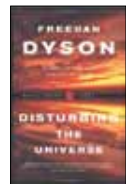
By Carl Sagan



Sagan, Cornell University astronomer and famed author, offers his thoughts on science and the scientific journey. In the process, he tells us about his childhood, relates UFO stories, and disdains the pitfalls of pseudoscience (and alien abduction, channeling, witches, ghosts, demons, Bigfoot, and the Loch Ness monster) while making links between science and spirituality. Though more a plea for scientific literacy (empiricism, rationalism, experimentation) than an autobiography, Sagan argues that this book “is a personal statement, reflecting my lifelong love affair with science.”

### Disturbing the Universe (1979)

By Freeman J. Dyson



Dyson, an American theoretical physicist known for his work in astronomy and quantum field theory, starts his memoir with his position as a statistician for the royal Air Force Bomber Command during World War II; he then moves on to his studies and his friendship and work with Richard Feynman, Edward Teller, and J. Robert Oppenheimer. Dyson conveys the excitement of scientific engagement, as well as his dedication as a citizen responsible for scientific discoveries and their consequences. This is also a tale of the often contradictory meetings of science and religion and of humanities and science. An eloquent writer, Dyson brings to life the wonder of scientific discovery, even for those with less than a passing interest in the subject.

### Reason for Hope

#### A Spiritual Journey (1999)

By Jane Goodall (with Phillip Berman)



Goodall described her groundbreaking, if controversial, work on African chimpanzee social and family life in *In the Shadow of Man* (1971),

*Through a Window* (1990), and other books. Here, she offers further insight into her life as a scientist—and the childhood callings and spiritual beliefs that led her to her work. Goodall covers her early years in England through her apprenticeship with Louis Leakey and her years in Gombe Stream National Park, Africa, as well as her work as an environmental and animal welfare activist. Above all, *Reason for Hope* is Goodall's compelling plea for the sacredness of all life. Poetic and even mystical in parts, if somewhat sentimental.

### Born Free

#### A Lioness of Two Worlds

By Joy Adamson (1960)



In 1956, George Adamson, a game warden in Kenya, shot and killed a lioness in self-defense. He and his wife Joy later found the lioness's cubs and raised the three of them, eventually sending two to a zoo in Rotterdam and keeping Elsa. With the intent of setting Elsa free, they successfully trained the orphaned lioness to hunt and survive on her own and released her back into the wild three years later. *Born Free* (later turned into a hit film) relates the moving story of George and Joy's work with Elsa and remains an important work of environmental consciousness, even more relevant today than when it was first published.

## Fiction

### Oh Pure and Radiant Heart (2005)

By Lydia Millet



On July 16, 1945, the first atomic bomb was detonated in Los Alamos, New Mexico. At the moment of the explosion, three physicists responsible for the Manhattan Project disappeared. Sixty years later, a librarian spots the discombobulated Leo Szilard, Robert Oppenheimer, and Enrico Fermi near her home in Santa Fe. With her husband, she persuades



the time-traveling scientists to address the terrible legacies of their atomic creation. Together they start working for global disarmament and embark on a cross-country bus tour to spread their message and to try to prevent militaristic Christians, who believe Oppenheimer is the Second Coming, from destroying their call for world peace. (★★★★ Nov/Dec 2005)

### Arrowsmith (1925)

By Sinclair Lewis

◆ PULITZER PRIZE (REJECTED)



In one of the earliest novels to deal with the culture of science, Martin Arrowsmith, from a family of physicians, becomes a medical assistant at age 14 to a drunken doctor in his Midwestern hometown. He soon becomes a doctor in his own right and practices medicine until he receives recognition for a scientific paper he has authored; he then takes a job with a prestigious New York research institute, where he answers his true calling as a scientist and as a researcher. The novel also, of course, deals with marriage, morality, and death. Lewis had initially been awarded the Pulitzer Prize four years earlier for *Main Street*, but that decision was overturned by the award's Board of Trustees. When Lewis won the Pulitzer for *Arrowsmith*, he refused to accept it.

### Intuition (2006)

By Allegra Goodman



At the Philpott Institute, a small cancer research lab in Cambridge, Massachusetts, postdoc researcher Cliff makes an amazing breakthrough: he discovers that the R-7 virus has reversed cancer growth in mice. Or so he thinks. When oncologist Sandy Glass sidesteps protocol and publishes Cliff's preliminary results despite the warning of Philpott's codirector, the stakes become high. Robin, Cliff's ex-girlfriend and colleague, attempts to disprove Cliff's results, while Cliff cries innocent. Soon, unwanted controversy for the grants-driven lab

threatens its very existence. (★★★★ May/June 2006)

### The Gold Bug Variations (1991)

By Richard Powers



A novel by Powers is always complex, always dense, always brilliant. Here, the MacArthur genius grant author intertwines the search for the genetic code with musical notation, cartography, chemistry, the Dewey decimal system, and computer programming. But the main plot is relatively basic: in a first love story, set in the 1950s, two scientists strive to discover the mysteries of DNA; 30 years later, two lovers befriend one of the scientists. An enriching, if at times difficult, book.

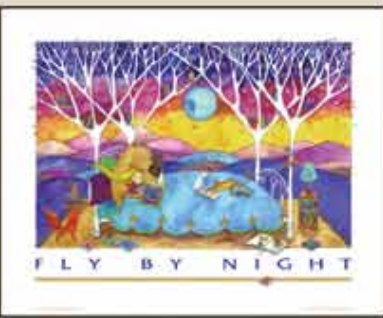
### Frankenstein

Or, the Modern Prometheus (1818)

By Mary Shelley




In this gothic classic, Swiss scientist Victor Frankenstein strives to overcome life's limitations and create an intelligent-life being. "I collected bones from charnel-houses and disturbed, with profane fingers, the tremendous secrets of the human frame," he says. But when he finally succeeds, Frankenstein realizes that he has created a gargantuan, hideous monster. After the monster kills his cousin (and wife) Elizabeth, Victor vengefully follows the monster to the ends of the earth. A chilling story of life created in the laboratory. ■




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