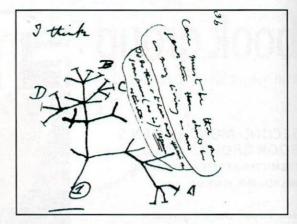
what one book

Expert Recommendations on a Selected Topic

Evolution

BY ANDREW BENEDICT-NELSON



Darwin's first sketch of an evolutionary tree from his First Notebook on Transmutation of Species (1837)

he book that established the theory of evolution, Charles
Darwin's On the Origin of Species (1859), is not just one of
the classics of Western science; it is also one of the classics
of English prose. In the century and a half since Darwin,
hundreds of great writers and scientists have explored the subject.
And while only about half of Americans believe in evolution,
most biologists claim that their discipline cannot be understood
without it.

Yet the reader hoping to learn the basics about evolution and its implications faces many problems. Textbook publishers, eager not to offend, offer texts written and edited for markets that don't want to hear too much about the "E word." On the shelves of many stores, there is no way to differentiate between books aimed at the layman, the specialist, and the skeptic. And many of the most popular books written from the evolutionary perspective attempt to further additional arguments about the nature of people or the universe—important subjects, but potentially distracting for the reader who simply wants to understand the theory. Then there is the nonscientist who already believes in evolution but wants to learn more without rehashing the rhetoric.

This list should aid these kinds of readers. For those uncertain about the theory, the books below present some of the best takes on the subject, from a variety of angles. Those who just want to learn more will find titles that entertain and that explore aspects of the subject they might not have considered. And even the determined creationist should find sincere writers who find the evolutionary world one of beauty, wonder, and awe.

Introductions to Evolution

Evolution

The Triumph of an Idea

By Carl Zimmer (2001)



This companion to PBS's 2001 series on evolution is one of the best overviews of the theory and its many implications. It covers it all: Darwin's ideas and the theory today, the best evidence for the theory from various disciplines, the history of Earth's plant and animal life, and

explanations of more recent phenomena like drug-resistant pathogens. You could think of it as the textbook you should have read in freshman biology, yet the writing is far better. Carl Zimmer is an editor for *Discover* magazine and the author of several other popular books on science. On its release, *Scientific American* called it "as fine a book as one will find on the subject," which may explain why HarperCollins has just issued another edition.

What Evolution Is

By Ernst Mayr (2001)



After seven decades as a working evolutionary biologist, Ernst Mayr felt he needed to write a survey of evolutionary thought for the lay reader. The result is an engaging, philosophical take on the subject. Mayr considers Darwin's theory as consisting of five main ideas; he then

relates the history and meaning of each. Drawing upon his own broad experience in the field, he also shows the essential place of evolution in modern biology. Mayr's book may be best for the believer in evolution who would like a refresher course or a reminder of its importance, though the book also includes an index that answers the best-known objections to the theory.

Science, Evolution, and Creationism

By the National Academy of Sciences and the Institute of Medicine (2008)



These two esteemed bodies of scientists published this concise (88 pages) book to "set the record straight" on evolution. Aimed primarily at educators, policymakers, and parents, it attempts to state the basics of the theory and the legal case for why evolution, and not

creationism or "intelligent design," should be taught in the nation's schools. The strengths of the book are its simplicity and its demonstration that evolution is the overwhelming consensus of modern scientists, but readers should also keep in mind that it was written by committee. The full text is also available online at http://www.nap.edu.

Origins of, and Updates on, On the Origin of Species

On the Origin of Species

By Charles Darwin (1859)



It never hurts to return to the source. While Charles Darwin first conceived of the idea of evolution by natural selection on the voyage of the now-famous HMS *Beagle*, he waited decades to publish his findings. During that time, he was gathering evidence, thinking through

objections, and consulting with colleagues. The result is a work that still presents the essence of the theory, still answers the most common objections, and still celebrates the beauty of curiosity about the natural world. At the same time, it also shows how Darwin was influenced by his culture and his era.

Annotations and Updates to Origin

The only information that cannot be found in *Origin* is the vast amount of data and thought that has been added to evolutionary theory since 1859, without which it might be misunderstood. Therefore, it might be best to try an annotated edition. The Harvard biologist Edward O. Wilson edited a collection called *From So Simple a Beginning: Darwin's Four Great Books* (2005), which includes *Origin* as well as several of Darwin's other well-known works (*Voyage of the Beagle, The Descent of Man*, and *The Expression of Emotions in Man and Animals*). Wilson's introductions put each book in context, and Wilson includes an index that compares 19th-century ideas with modern biological thought.

There are several other good annotated versions of Darwin as well. *Darwin* (Norton Critical Editions: 3rd edition, 2000), edited by Philip Appleman, adds contextual works from Darwin's contemporaries as well as modern commentary from a range of perspectives: Richard Dawkins, Edward O. Wilson, Steven Pinker, Daniel Dennett, Noretta Koertge, Stephen Jay Gould, Gillian Beer, and other heavy hitters in the field all weigh in. For a different approach, try the award-winning *Darwin's Ghost:* The Origin of Species *Updated* (2000) by the geneticist Steve Jones. Jones appropriates the title chapters and summaries from *Origin*, but then fills his book with 21st-century language and data—from biodiversity to AIDS.

Biographies of Darwin

Other readers may prefer to supplement *Origin* with a biography of Darwin. The definitive and most up-to-date biography is Janet Browne's prize-winning two-volume work: *Charles Darwin: Voyaging* (1995), which centers on the HMS *Beagle*, and *Charles Darwin: The Power of Place* (2002), which focuses on *Origin* and its aftermath. Other books explore Darwin from specific angles. *The Reluctant Mr. Darwin: An Intimate Portrait of Charles Darwin and the Making of His Theory of Evolution* by David Quammen (*** Nov/Dec 2006) tries to explain why Darwin

took so long to publish his theory. *Darwin: The Life of a Tormented Evolutionist* (1992) by Adrian Desmond explores the inner struggles that his theory engendered, religious and otherwise. Finally, Darwin's own autobiography, written for his wife and children, is also popular.

Species

The Beak of the Finch

A Story of Evolution in Our Time

By Jonathan Weiner (1994)

→ PULITZER PRIZE



Evolution is often discussed in such abstract or argumentative terms that we lose track of its most wonderful outcome: the many plant and animal species of the world. Jonathan Weiner brings the story back to animals by exploring the creatures that inspired Darwin in the first

place: the finches of the Galapagos Islands. Following the work of ornithologists Peter and Rosemary Grant, who have observed 20 generations of finches in the Galapagos, Weiner presents evolution on a human (and avian) scale. For discussion of another famous bird, see *Taking Wing: Archaeopteryx and the Evolution of Bird Flight* (1999) by Pat Shipman.

At the Water's Edge

Fish with Fingers, Whales with Legs, and How Life Came Ashore but Then Went Back to Sea

By Carl Zimmer (1999)



One of the greatest mysteries of evolution is how species evolve entirely new organs and abilities; the evidence is there, but it's hard to picture in the mind. Carl Zimmer helps us along with this story of two of biology's most exciting episodes: the transition of life from sea

to land, and the evolution of land mammals into dolphins and whales.

Wonderful Life

The Burgess Shale and the Nature of History

By Stephen Jay Gould (1989)

- ◆ PULITZER PRIZE FINALIST
- ◆ THE AVENTIS PRIZES FOR SCIENCE BOOKS



A sobering fact about the story of evolution is the number of species that have gone extinct—indeed, that *must* go extinct for natural selection to do its job. A great number of them were recorded in a famous fossil that was discovered in Canada in 1909, though only recently were

they understood. Stephen Jay Gould uses these preserved fossil fauna, about 530 million years old, to think about how life on Earth could have evolved differently and to celebrate the uniqueness of our world. Gould's essay collections include dozens of additional insights into evolution. Readers in search of a challenge could try his more tech-

nical magnum opus, The Structure of Evolutionary Theory (★★ Summer 2002), which weighs in at over 1,400 pages.

Genes

The Selfish Gene

By Richard Dawkins (1976)



One of the key problems Darwin faced when he was formulating his theory was that he did not know how biological information was transferred between generations. We now understand that DNA does the job. Richard Dawkins takes that argument a step further,

writing that genes (rather than species) should be seen as the central units in evolution. While The Selfish Gene is considered a modern scientific classic, it is not without its critics; see Ernst Mayr (above) or the work of Richard Lewontin.

The Red Queen

Sex and the Evolution of Human Nature

By Matt Ridley (1994)



Many people know Matt Ridley for his book Genome: The Autobiography of a Species in 23 Chapters (2000), which includes plenty of insight into evolution itself as the author journeys through the human chromosomes. In The Red Queen, Ridley considers how sexual reproduc-

tion reshuffles our genes in the constant game of catch-up we play against diseases. Of course, Ridley's open approach to exploring human sexuality will also keep readers engaged.

Humans

The Third Chimpanzee

The Evolution and Future of the Human Animal By Jared Diamond (1992)

- ROYAL SOCIETY PRIZES FOR SCIENCE BOOKS
- LOS ANGELES TIMES BOOK PRIZE



For many people, Jared Diamond's Guns, Germs, and Steel is the only science book they've ever read. But before trying to explain the rise and fall of societies, Diamond examined the people who built them. The Third Chimpanzee starts by looking at the small

genetic divergences from apes that enabled human beings to expand to every part of the world. Then Diamond considers how some of those same genetic divergences enable risky, self-destructive, and immoral behaviors. Other good books on evolution and what it means to be human include Evolution for Everyone by David Sloan Wilson (*** SELEC-TION July/Aug 2007) and Your Inner Fish: A Journey into the 3.5-Billion-Year History of the Human Body by Neil Shubin (★★★★ SELECTION Mar/Apr 2008).

The Ancestor's Tale

A Pilgrimage to the Dawn of Evolution

By Richard Dawkins (2004)



While evolution may have the fossils on its side, it's hard to match the elegance of Genesis. But Dawkins does his best in this book, which weaves a sort of evolutionary mythology by moving backwards in time through the many generations of species that preceded humans.

Besides including an engaging and up-to-date account of human evolution, each of Dawkins's "tales," told by 30 "pilgrims" and loosely modeled after Geoffrey Chaucer's Canterbury Tales, illustrates an aspect of evolutionary theory. (*** Jan/Feb 2005)

Creation

Summer for the Gods

The Scopes Trial and America's Continuing Debate Over Science and Religion

By Edward Larson (2004)

◆ PULITZER PRIZE



Many people think they know the story of the most famous courtroom battle over evolution, the Scopes "Monkey" Trial, because they read (or saw) Jerome Lawrence and Robert E. Lee's Inherit the Wind (1955). But the play romanticizes a complicated historical episode. Edward

Larson separates the fact from the fiction and analyzes the continuing consequences of the trial for Americans' understanding of evolution and themselves.

Finding Darwin's God

A Scientist's Search for Common Ground Between God and Evolution

By Kenneth Miller (2007)



According to the prevailing discourse on the subject, as well as many people on both sides of the debate, evolution and organized religion are incompatible. Not so, argues Kenneth Miller, a Roman Catholic biologist working in a world where most scientists are atheists or agnostics.

While rebuking creationists, Miller tries to open everyone's minds to new ideas about the role of a Creator in a world where life evolved.