This is Charles Darwin's chronicle of his five-year journey, beginning in 1831, around the world as a naturalist on the H.M.S. Beagle. A compelling portrait of a unique moment in American history when the ideas of Charles Darwin reshaped American notions about nature, religion, science and race. "A lively and informative history." - The New York Times Book Review

Throughout its history America has been torn in two by debates over ideals and beliefs. Randall Fuller takes us back to one of those turning points, in 1860, with the story of the influence of Charles Darwin's just-published On the Origin of Species on five American intellectuals, including Bronson Alcott, Henry David Thoreau, the child welfare reformer Charles Loring Brace, and the abolitionist Franklin Sanborn. Each of these figures seized on the book's assertion of a common ancestry for all creatures as a powerful argument against slavery, one that helped provide scientific credibility to the cause of abolition. Darwin's depiction of constant struggle and endless competition described America on the brink of civil war. But some had difficulty aligning the new theory to their religious convictions and their faith in a higher power. Thoreau, perhaps the most profoundly affected all, absorbed Darwin's views into his mysterious final work on species migration and the interconnectedness of all living things. Creating a rich tableau of nineteenth-century American intellectual culture, as well as providing a fascinating biography of perhaps the single most important idea of that time, The Book That Changed America is also an account of issues and concerns still with us today, including racism and the enduring conflict between science and religion. From the primordial soup to meteorite impact zones, the Manhattan Project to the latest research, this book is the first full history of the scientists who strive to explain the genesis of life. How did life begin? Why are we here? These are some of the most profound questions we can ask. For almost a century, a small band of eccentric scientists has struggled to answer these questions and explain one of the greatest mysteries of all: how and why life began on Earth. There are many different proposals, and each idea has attracted passionate believers who promote it with an almost religious fervor, as well as detractors who reject it with equal passion. But the quest to unravel life's genesis is not just a story of big ideas. It is also a compelling human story, rich in personalities, conflicts, and surprising twists and turns. Along the way, the journey takes in some of the greatest discoveries in modern biology, from evolution and cells to DNA and life's family tree. It is also a search whose end may finally be in sight. In The Genesis Quest, Michael Marshall shows...
how the quest to understand life’s beginning is also a journey to discover the true nature of life, and by extension our place in the universe. A steady course in which something changes into a diverse and unambiguously a more composite form can be described as evolution. Evolution is the method by which an organism converts to a more erudite form over time and in retort to its milieu. The Theory of Evolution is presently the most widely held conception of how life touched its present state. Evolution as a biotic mechanism is driven by natural selection. This theory is favoured by many researchers to elucidate occurrences in nature, so much so that it is usually presumed as actual in most lessons. Evolution is not without dispute, besides religious oppositions, study of evolution in detail advances suspicions which science is bound to answer. Radically, evolution has never been verified and scientists too don’t deny this fact. Paradoxically many evolutionists shield the theory using the arguments once accredited to fundamentalist Christians like, “because I choose to believe”. These scientists bung up in the fissures in the evolutionary model using rational suppositions, something for which non-evolutionists are often carped. "Quammen brilliantly and powerfully re-creates the 19th century naturalist's intellectual and spiritual journey."—Los Angeles Times Book Review Twenty-one years passed between Charles Darwin's epiphany that "natural selection" formed the basis of evolution and the scientist's publication of On the Origin of Species. Why did Darwin delay, and what happened during the course of those two decades? The human drama and scientific basis of these years constitute a fascinating, tangled tale that elucidates the character of a cautious naturalist who initiated an intellectual revolution. In a book that is both groundbreaking and accessible, Daniel C. Dennett, whom Chet Raymo of The Boston Globe calls “one of the most provocative thinkers on the planet,” focuses his unerringly logical mind on the theory of natural selection, showing how Darwin's great idea transforms and illuminates our traditional view of humanity's place in the universe. Dennett vividly describes the theory itself and then extends Darwin's vision with impeccable arguments to their often surprising conclusions, challenging the views of some of the most famous scientists of our day. Chronicles the life and career of the scientist who revolutionized scientific thought with his theory of evolution. World-changing events unfold before your eyes in these amazing tales of inventions and discovery. Inventors, scientists, and businesspeople shape our world through their will and determination. See their captivating stories come to life with vivid illustrations and easy-to-read text. An additional information section provides key facts and further understanding. With insight and wit, Robert J. Richards focuses on the development of evolutionary theories of mind and behavior from their first distinct appearance in the eighteenth century to their controversial state today. Particularly important in the nineteenth century were Charles Darwin’s ideas about instinct, reason, and morality, which Richards considers against the background of Darwin’s personality, training, scientific and cultural concerns, and intellectual community. Many critics have argued that the Darwinian revolution stripped nature of moral purpose and ethically neutered the human animal. Richards contends, however, that Darwin, Herbert Spencer, and their disciples attempted to reanimate moral life, believing that the evolutionary process gave heart to unselfish, altruistic behavior. "Richards's book is now the obvious introduction to the history of ideas about mind and behavior in the nineteenth century."—Mark Ridley, Times Literary Supplement “Not since the publication of Michael Ghiselin's The Triumph of the Darwinian Method has there been such an ambitious, challenging, and methodologically self-conscious interpretation of the rise and development and evolutionary theories and Darwin's role therein.”—John C. Greene, Science "His book . . . triumphantly achieves the goal of all great scholarship: it not only informs us, but shows us why becoming thus informed is essential to understanding our own issues and projects."—Daniel C. Dennett, Philosophy of Science Specialist scientific fields are developing at incredibly swift speeds, but what can they really tell us about how the universe began and how we as humans evolved to play such a dominant role on Earth? John Hands' extraordinarily ambitious book merges scientific knowledge from multiple disciplines and evaluates without bias or preconception all the theories and evidence about the origin and evolution of matter, consciousness, and mankind. The result, a “pearl of dialectical reasoning†? (Publishers Weekly, starred
review), provides the most comprehensive account yet of current ideas such as cosmic inflation, dark energy, the selfish gene, and neurogenetic determinism. In the clearest possible prose it differentiates the firmly established from the speculative and examines the claims of various fields to approach a unified theory of everything. In doing so it challenges the orthodox consensus in those branches of cosmology, biology, and neuroscience that have ossified into dogma. Its “shocking and invigorating” analysis (Daily Telegraph, A Best Science Book of 2015) reveals underlying patterns of cooperation, complexification, and convergence that lead to the unique emergence in humans of a self-reflective consciousness that enables us to determine our future evolution. This groundbreaking book is destined to become a classic of scientific thinking.

In The Selfish Gene, Richard Dawkins crystallized the gene's eye view of evolution developed by W.D. Hamilton and others. The book provoked widespread and heated debate. Written in part as a response, The Extended Phenotype gave a deeper clarification of the central concept of the gene as the unit of selection; but it did much more besides. In it, Dawkins extended the gene's eye view to argue that the genes that sit within an organism have an influence that reaches out beyond the visible traits in that body - the phenotype - to the wider environment, which can include other individuals. So, for instance, the genes of the beaver drive it to gather twigs to produce the substantial physical structure of a dam; and the genes of the cuckoo chick produce effects that manipulate the behaviour of the host bird, making it nurture the intruder as one of its own. This notion of the extended phenotype has proved to be highly influential in the way we understand evolution and the natural world. It represents a key scientific contribution to evolutionary biology, and it continues to play an important role in research in the life sciences. The Extended Phenotype is a conceptually deep book that forms important reading for biologists and students. But Dawkins' clear exposition is accessible to all who are prepared to put in a little effort. Oxford Landmark Science books are 'must-read' classics of modern science writing which have crystallized big ideas, and shaped the way we think.

A radical reappraisal of Charles Darwin from the bestselling author of Victoria: A Life. With the publication of On the Origin of Species, Charles Darwin—hailed as the man who "discovered evolution"—was propelled into the pantheon of great scientific thinkers, alongside Galileo, Copernicus, and Newton. Eminent writer A. N. Wilson challenges this long-held assumption. Contextualizing Darwin and his ideas, he offers a groundbreaking critical look at this revered figure in modern science. In this beautifully written, deeply erudite portrait, Wilson argues that Darwin was not an original scientific thinker, but a ruthless and determined self-promoter who did not credit the many great sages whose ideas he advanced in his book. Furthermore, Wilson contends that religion and Darwinism have much more in common than it would seem, for the acceptance of Darwin's theory involves a pretty significant leap of faith. Armed with an extraordinary breadth of knowledge, Wilson explores how Darwin and his theory were very much a product of their place and time. The "Survival of the Fittest" was really the Survival of Middle Class families like the Darwins—members of a relatively new economic strata who benefited from the rising Industrial Revolution at the expense of the working classes. Following Darwin's theory, the wretched state of the poor was an outcome of nature, not the greed and neglect of the moneyed classes. In a paradigm-shifting conclusion, Wilson suggests that it remains to be seen, as this class dies out, whether the Darwinian idea will survive, or whether it, like other Victorian fads, will become a footnote in our intellectual history. Brilliant, daring, and ambitious, Charles Darwin explores this legendary man as never before, and challenges us to reconsider our understanding of both Darwin and modern science itself. "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.

Learn about the great scientist Charles Darwin as he developed the theory of evolution. You'll read about his life, the science behind his studies, and the impact of his work on the world today. On the Origin of Species, published in 1859, is widely accepted as the seminal work in modern biology. Through careful observation, Charles Darwin explains how traits can be selected for within a population. This is easily observed in the artificial selection of farm animals, for instance. Darwin's theory caused an uproar that can still be heard today by refuting the Christian doctrine of created breeds, in which all species that exist now have always existed just as they are. It is the very publication of this work that gave Charles Darwin his place of prominence in the history of the theory of evolution, because while he was not the first to suggest such a mechanism, his book and its exhaustive studies made the information widely available.

English scientist, naturalist, and geologist CHARLES DARWIN (1809-1882) revolutionized science, especially biology, with his theory of evolution through natural selection. As a passenger aboard the Beagle, Darwin became intrigued by the existence of different species in different geographical locations, which aided in the development of his theory. In addition to The Origin of Species, he is also remembered for The Descent of Man, and Selection in Relation to Sex and The Expression of the Emotions in Man and Animals. In 1859, Charles Darwin proposed a mechanism for biological evolution in his most famous work, On the Origin of Species. However, Origin makes little mention of humans. Despite this, Darwin thought deeply about humans and in 1871 published The Descent of Man, his influential and controversial book in which he applied evolutionary theory to humans and detailed his theory of sexual selection. February 2021 will mark the 150th anniversary of it's publication. In A Most Interesting Problem, twelve leading anthropologists, biologists, and journalists revisit The Descent. Following the same organization as the first edition of Descent - less the large section on sexual selection -- each author reviews what Darwin wrote in Descent, comparing his words to what we now know now. There are chapters on evidence for human evolution, our place in the family tree, the origins of civilization, human races, intelligence, and sex differences. An introduction by Darwin biographer and historian Janet Browne provides context for Descent and a conclusion by Science magazine journalist Ann Gibbons looks to the future of the study of human evolution. All the chapters are written with a broad audience in mind. Ultimately, readers learn that Darwin was remarkably prophetic in some of his predictions, such as that the earliest human fossils would be discovered in Africa. But he was wrong in other areas, particularly in regards to variations between the sexes and races. Thus, A Most Interesting Problem is not so much a celebration of Darwin as it is a tribute to how science works, how scientific ideas are tested, and the role of evidence in helping structure narratives of human origins. The reader is left with a view of how far we have come in our quest for understanding human origins, biological variation, behavior, and evolution"--Reveals how Darwin's study of fossils shaped his scientific thinking and led to his development of the theory of evolution. Darwin's Fossils is an accessible account of Darwin's pioneering work on fossils, his adventures in South America, and his relationship with the scientific establishment. While Darwin's research on Galápagos finches is celebrated, his work on fossils is less well known. Yet he was the first to collect the remains of giant extinct South American mammals; he worked out how coral reefs and atolls formed; he excavated and explained marine fossils high in the Andes; and he discovered a fossil forest that now bears his name. All of this research was fundamental in leading Darwin to develop his revolutionary theory of evolution. This richly illustrated book brings Darwin's fossils, many of which survive in museums and institutions around the world, together for the first time. Including new photography of many of the fossils--which in recent years have enjoyed a surge of scientific interest--as well as superb line drawings produced in the nineteenth century and newly commissioned artists' reconstructions of the extinct animals as
they are understood today, Darwin's Fossils reveals how Darwin's discoveries played a crucial role in the development of his groundbreaking ideas. This illuminating volume explores the effects of chance on evolution, covering diverse perspectives from scientists, philosophers, and historians. The evolution of species, from single-celled organisms to multicellular animals and plants, is the result of a long and highly chancy history. But how profoundly has chance shaped life on earth? And what, precisely, do we mean by chance? Bringing together biologists, philosophers of science, and historians of science, Chance in Evolution is the first book to untangle the far-reaching effects of chance, contingency, and randomness on the evolution of life. The book begins by placing chance in historical context, starting with the ancients and moving through Darwin to contemporary biology. It documents the shifts in our understanding of chance as Darwin's theory of evolution developed into the modern synthesis, and how the acceptance of chance in Darwinian theory affected theological resistance to it. Other chapters discuss how chance relates to the concepts of genetic drift, mutation, and parallel evolution—as well as recent work in paleobiology and the experimental evolution of microbes. By engaging in collaboration across biology, history, philosophy, and theology, this book offers a comprehensive overview both of the history of chance in evolution and of our current understanding of the impact of chance on life. From the conservative spokesperson and author of Slander and How to Talk to a Liberal comes an all new, timely, and thought-provoking study of American politics and religion that looks at the Left's attacks on the Judeo-Christian tradition. Reprint. 300,000 first printing. Offers an introduction that presents Darwin's theory. This title includes excerpts from Darwin's correspondence, commenting on the work in question, and its significance, impact, and reception. "I cannot think that the world, as we see it, is the result of chance; yet I cannot look at each separate thing as the result of design." English naturalist Charles Darwin wrote this in 1860, a year after publishing his theory of evolution. His words show the personal struggle of a man forced by his own observations to answer the fundamental question—Where do we come from?—in a revolutionary new way. Darwin's internal battle reflects a broader public struggle—the attempt to reconcile scientific fact with religious faith. Shaking the Foundation: Charles Darwin and the Theory of Evolution follows this battle, from the supporting theories of fellow scientists, to the opposing voices of clergymen, to twenty-first-century supporters of Intelligent Design. Through quotations from letters and other contemporary sources, you'll meet the personalities and ideas involved in the debate. You'll also examine some of the legal cases that brought evolution into the U.S. courtroom. These cases include the famous Scopes trial in 1925 and the Kitzmiller v. Dover Area School District case in 2005, which tested a school policy requiring the teaching of Intelligent Design. Through these and other debates, you'll learn more about the struggle over one of life's most profound questions. Jon Woolf presents information about the English naturalist Charles Robert Darwin (1809-1882) and his theory of evolution, expressed in his essay entitled "On the Origin of Species," which was published in 1859. Woolf provides access to a bibliography of works written by Darwin, biographical sketches of Darwin, an overview of the history of evolutionary theory, and more. In this New York Times bestseller and longlist nominee for the National Book Award, "our greatest living chronicler of the natural world" (The New York Times), David Quammen explains how recent discoveries in molecular biology affect our understanding of evolution and life's history. In the mid-1970s, scientists began using DNA sequences to reexamine the history of all life. Perhaps the most startling discovery to come out of this new field—the study of life's diversity and relatedness at the molecular level—is horizontal gene transfer (HGT), or the movement of genes across species lines. It turns out that HGT has been widespread and important; we now know that roughly eight percent of the human genome arrived sideways by viral infection—a type of HGT. In The Tangled Tree, "the grandest tale in biology....David Quammen presents the science—and the scientists involved—with patience, candor, and flair" (Nature). We learn about the major players, such as Carl Woese, the most important little-known biologist of the twentieth century; Lynn Margulis, the notorious maverick whose wild ideas about "mosaic" creatures proved to be true; and Tsutomu Wantanabe, who discovered that the scourge of antibiotic-resistant bacteria is a
direct result of horizontal gene transfer, bringing the deep study of genome histories to bear on a global crisis in public health. “David Quammen proves to be an immensely well-informed guide to a complex story” (The Wall Street Journal). In The Tangled Tree, he explains how molecular studies of evolution have brought startling recognitions about the tangled tree of life—including where we humans fit upon it. Thanks to new technologies, we now have the ability to alter even our genetic composition—through sideways insertions, as nature has long been doing. “The Tangled Tree is a source of wonder...Quammen has written a deep and daring intellectual adventure” (The Boston Globe).Charles Darwin's Theory of Evolution Overthrown By: Dr. Nyonbeor A. Boley Sr. The first criterion for accepting a theory as being scientific is that the theory must never contradict empirical facts. Charles Darwin's Theory of Evolution Overthrown was written to prove that Darwin's “theory of evolution” is not, in fact, a scientific theory at all. Absolutely essential to all science is the agreement between theory and experimental facts. The opinion that man evolved from molecules contradicts archeological evidence on the origin of the human race. Discover for yourself what problems – even problems in today's society – can be traced back to the promotion of Darwin's “theory.”The publication of Charles Darwin's On the Origin of Species in 1859 is widely regarded as a turning point in knowledge of the natural world. But Darwin's theory of natural selection was not developed in a vacuum; rather, it represents the culmination of an enormous shift in scientific and popular opinion on the subject of species mutability from the late eighteenth century onward. Through her insightful introduction and engaging collection of documents, Sandra Herbert examines this era of scientific thought and the startling discoveries that led Darwin and others to the conclusion that life has evolved. A wide range of documents from over a dozen authors -- including letters, illustrations, scientific tracts, and excerpts from Darwin's own notebooks and On the Origin of Species -- offer a fascinating glimpse into this crucial era of scientific thought. Thoughtful document headnotes, questions for consideration, a chronology, and a selected bibliography provide students with additional context and pedagogical support.This book examines the display of emotions by humans and animals. (PsycINFO Database Record (c) 2004 APA, all rights reserved)Science has revolutionized our lives and continues to show inexorable progress today. It may seem obvious that this must be because its theories are steadily getting better and approaching the truth about the world. After all, what could science be progressing toward, if not the truth? But scholarship in the history, philosophy, and sociology of science offers little support for such a sanguine view. Those opposed to specific conclusions of the scientific community-nonbelievers in vaccinations, climate change, and evolution, for example-have been able to use a superficial understanding of the nature of science to sow doubt about the scientific consensus in those areas, leaving the general public confused as to whom to trust, with damaging effects for the health of individuals and the planet. The Great Paradox of Science argues that to better counter such anti-science efforts requires us to understand the nature of scientific knowledge at a much deeper level and dispel many myths and misconceptions. It is the use of scientific logic, the characteristics of which are elaborated on in the book, that enables the scientific community to arrive at reliable consensus judgments in which the public can retain a high degree of confidence. This scientific logic is applicable not just in science but can be used in all areas of life. Scientists, policymakers, and members of the general public will not only better understand why science works: They will also acquire the tools they need to make sound, rational decisions in all areas of their lives. On the Origin of Species (or, more completely, On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life), [3] published on 24 November 1859, is a work of scientific literature by Charles Darwin which is considered to be the foundation of evolutionary biology. [4] Darwin's book introduced the scientific theory that populations evolve over the course of generations through a process of natural selection. It presented a body of evidence that the diversity of life arose by common descent through a branching pattern of evolution. Darwin included evidence that he had gathered on the Beagle expedition in the 1830s and his subsequent findings from research, correspondence, and experimentationThis book explains Charles Darwin's theory of evolution through natural selection
while telling how a hypothesis became not merely a theory but the foundation of an entire science. Argues that ecologist Charles Darwin's understanding of competition describes economic reality far more accurately than economist Adam Smith's theories ever did. Today many school students are shielded from one of the most important concepts in modern science: evolution. In engaging and conversational style, Teaching About Evolution and the Nature of Science provides a well-structured framework for understanding and teaching evolution. Written for teachers, parents, and community officials as well as scientists and educators, this book describes how evolution reveals both the great diversity and similarity among the Earth's organisms; it explores how scientists approach the question of evolution; and it illustrates the nature of science as a way of knowing about the natural world. In addition, the book provides answers to frequently asked questions to help readers understand many of the issues and misconceptions about evolution. The book includes sample activities for teaching about evolution and the nature of science. For example, the book includes activities that investigate fossil footprints and population growth that teachers of science can use to introduce principles of evolution. Background information, materials, and step-by-step presentations are provided for each activity. In addition, this volume: Presents the evidence for evolution, including how evolution can be observed today. Explains the nature of science through a variety of examples. Describes how science differs from other human endeavors and why evolution is one of the best avenues for helping students understand this distinction. Answers frequently asked questions about evolution. Teaching About Evolution and the Nature of Science builds on the 1996 National Science Education Standards released by the National Research Council—and offers detailed guidance on how to evaluate and choose instructional materials that support the standards. Comprehensive and practical, this book brings one of today's educational challenges into focus in a balanced and reasoned discussion. It will be of special interest to teachers of science, school administrators, and interested members of the community. Darwin's theory of natural selection is also a humane and inspirational vision of ecological inter-relatedness revealing the almost unthinkably complex and mutual inter-dependencies between animal and plant life, climate and physical environment and - by implication - the human world. In this innovative celebration of diversity and affirmation of individuality in animals and humans, Joan Roughgarden challenges accepted wisdom about gender identity and sexual orientation. A distinguished evolutionary biologist, Roughgarden takes on the medical establishment, the Bible, social science—and even Darwin himself. She leads the reader through a fascinating discussion of diversity in gender and sexuality among fish, reptiles, amphibians, birds, and mammals, including primates. Evolution's Rainbow explains how this diversity develops from the action of genes and hormones and how people come to differ from each other in all aspects of body and behavior. Roughgarden reconstructs primary science in light of feminist, gay, and transgender criticism and redefines our understanding of sex, gender, and sexuality. Witty, playful, and daring, this book will revolutionize our understanding of sexuality. Roughgarden argues that principal elements of Darwinian sexual selection theory are false and suggests a new theory that emphasizes social inclusion and control of access to resources and mating opportunity. She disputes a range of scientific and medical concepts, including Wilson's genetic determinism of behavior, evolutionary psychology, the existence of a gay gene, the role of parenting in determining gender identity, and Dawkins's "selfish gene" as the driver of natural selection. She dares social science to respect the agency and rationality of diverse people; shows that many cultures across the world and throughout history accommodate people we label today as lesbian, gay, and transgendered; and calls on the Christian religion to acknowledge the Bible's many passages endorsing diversity in gender and sexuality. Evolution's Rainbow concludes with bold recommendations for improving education in biology, psychology, and medicine; for democratizing genetic engineering and medical practice; and for building a public monument to affirm diversity as one of our nation's defining principles.