

The Evolution And History Of Supply Chain Management

An illustrated natural history of the Earth and its denizens combines paintings, drawings, and computer-generated images with a chronicle of the world's variegated organisms and species.

We tend to see history and evolution springing from separate roots, one grounded in the human world and the other in the natural world. Human beings have, however, become probably the most powerful species shaping evolution today, and human-caused evolution in other species has probably been the most important force shaping human history. This book introduces readers to evolutionary history, a new field that unites history and biology to create a fuller understanding of the past than either can produce on its own. Evolutionary history can stimulate surprising new hypotheses for any field of history and evolutionary biology. How many art historians would have guessed that sculpture encouraged the evolution of tuskless elephants? How many biologists would have predicted that human poverty would accelerate animal evolution? How many military historians would have suspected that plant evolution would convert a counter-insurgency strategy into a rebel subsidy? With examples from around the globe, this book will help readers see the broadest patterns of history and the details of their own life in a new light.

Although political and legal institutions are essential to any nation's economic development, the forces that have shaped these institutions are poorly understood. Drawing on rich evidence about the development of the American states from the mid-nineteenth to the late twentieth century, this book documents the mechanisms through which geographical and historical conditions--such as climate, access to water transportation, and early legal systems--impacted political and judicial institutions and economic growth. The book shows how a state's geography and climate influenced whether elites based their wealth in agriculture or trade. States with more occupationally diverse elites in 1860 had greater levels of political competition in their legislature from 1866 to 2000. The book also examines the effects of early legal systems. Because of their colonial history, thirteen states had an operational civil-law legal system prior to statehood. All of these states except Louisiana would later adopt common law. By the late eighteenth century, the two legal systems differed in their balances of power. In civil-law systems, judiciaries were subordinate to legislatures, whereas in common-law systems, the two were more equal. Former civil-law states and common-law states exhibit persistent differences in the structure of their courts, the retention of judges, and judicial budgets. Moreover, changes in court structures, retention procedures, and budgets occur under very different conditions in civil-law and common-law states. *The Evolution of a Nation* illustrates how initial geographical and historical conditions can determine the evolution of political and legal institutions and long-run growth.

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This 50th anniversary publication provides a comprehensive history of community development. Beginning in 1970 with the advent of the Community Development Society and its journal shortly thereafter, *Community Development*, the editors have placed the chapters in major themed areas or issues pertinent to both research and practice of community development. The evolution of community development as an area of scholarship and application, and the subsequent founding of the discipline, is vital to capture. At the 50-year mark, it is particularly relevant to revisit issues that reoccur throughout the last five decades and look at approaches to addressing them. These include issues and themes around equity and inclusion, collective impact, leadership and policy development, as well as resilience and sustainability. Community change over time has much to teach us, and this set will provide a foundation for fostering understanding of the history of community development and its focus on community change. The chapters in this book were originally published in the journal *Community Development*.

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.

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).

An introduction to evolutionary biology, with sixteen essays about the history and philosophy of the field, related empirical and theoretical questions about topics such as speciation, adaptation, and development, and articles on important figures, social and political issues, and related religious topics.

World-class palaeontologists and biologists summarise the state-of-the-art on fish evolution and development.

" ... Designed to present a readable, authoritative history of military operations -- in this instance, of operations in the Western world that best convey the American experience of warfare from the seventeenth century to the present."--Preface.

Life history theory seeks to explain the evolution of the major features of life cycles by analyzing the ecological factors that shape age-specific schedules of growth, reproduction, and survival and by investigating the trade-offs that constrain the evolution of these traits. Although life history theory has made enormous progress in explaining the diversity of life history strategies among species, it traditionally ignores the underlying proximate mechanisms. This novel book argues that many fundamental problems in life history evolution, including the nature of trade-offs, can only be fully resolved if we begin to integrate information on developmental, physiological, and genetic mechanisms into the classical life history framework. Each chapter is written by an established or up-and-coming leader in their respective field; they not only represent the state of the art but also offer fresh perspectives for future research. The text is divided into 7 sections that cover basic concepts (Part 1), the mechanisms that affect different parts of the life cycle (growth, development, and maturation; reproduction; and aging and somatic maintenance) (Parts 2-4), life history plasticity (Part 5), life history integration and trade-offs (Part 6), and concludes with a synthesis chapter written by a prominent leader in the field and an editorial postscript (Part 7).

A fundamentally new approach to the history of science and technology This book presents a new way of thinking about the history of science and technology, one that offers a grand narrative of human history in which knowledge serves as a critical factor of cultural evolution. Jürgen Renn examines the role of knowledge in global transformations going back to the dawn of civilization while providing vital perspectives on the complex challenges confronting us today in the Anthropocene—this new geological epoch shaped by humankind. Renn reframes the history of science and technology within a much broader history of knowledge, analyzing key episodes such as the evolution of writing, the emergence of science in the ancient world, the Scientific Revolution of early modernity, the globalization of knowledge, industrialization, and the profound transformations wrought by modern science. He investigates the evolution of knowledge using an array of disciplines and methods, from cognitive science and experimental psychology to earth science and evolutionary biology. The result is an entirely new framework for understanding structural changes in systems of knowledge—and a bold new approach to the history and philosophy of science. Written by one of today's preeminent historians of science, *The Evolution of Knowledge* features discussions of historiographical themes, a glossary of key terms, and practical insights on global issues ranging from climate change to digital capitalism. This incisive book also serves as an invaluable introduction to the history of knowledge.

Based on the classic *History of Broadcasting in the United States*, *Tube of Plenty* represents the fruit of several decades' labor. When Erik Barnouw--premier chronicler of American broadcasting and a participant in the industry for fifty years--first undertook the project of recording its history, many viewed it as a light-weight literary task concerned mainly with "entertainment" trivia. Indeed, trivia such as that found in quiz programs do appear in the book, but Barnouw views them as part of a complex social tapestry that increasingly defines our era. To understand our century, we must fully comprehend the evolution of television and its newest extraordinary offshoots. With this fact in mind, Barnouw's new edition of *Tube of Plenty* explores the development and impact of the latest dramatic phases of the communications revolution. Since the first publication of this invaluable history of television and how it has shaped, and been shaped by, American culture and society, many significant changes have occurred. Assessing the importance of these developments in a new chapter, Barnouw specifically covers the decline of the three major networks, the expansion of cable and satellite television and film channels such as HBO (Home Box Office), the success of channels catering to special audiences such as ESPN (Entertainment and Sports Programming Network) and MTV (Music Television), and the arrival of VCRs in America's living rooms. He also includes an appendix entitled "questions for a new millennium," which will challenge readers not only to examine the shape of television today, but also to envision its future.

This edition of *Evolution: The History of an Idea* is augmented by the most recent contributions to the history and study of evolutionary theory. It includes an updated bibliography that offers an unparalleled guide to further reading. As in the original edition, Bowler's evenhanded approach not only clarifies the history of his controversial subject but also adds significantly to our understanding of contemporary debates over it. The idea of evolution continued to evolve. - Back cover.

What does it mean to be human? There are many theories of the evolution of human behavior which seek to explain how our brains evolved to support our unique abilities and personalities. Most of these have focused on the role of brain size or specific genetic adaptations of the brain. In contrast, Fred Previc presents a provocative theory that high levels of dopamine, the most widely studied neurotransmitter, account for all major aspects of modern human behavior. He further emphasizes the role of epigenetic rather than genetic factors in the rise of dopamine. Previc contrasts the great achievements of the dopaminergic mind with the harmful effects of rising dopamine levels in modern societies and concludes with a critical examination of whether the dopaminergic mind that has evolved in humans is still adaptive to the health of humans and to the planet in general.

No fight over what gets taught in American classrooms is more heated than the battle over humanity's origins. For more than a century we have argued about evolutionary theory and creationism (and its successor theory, intelligent design), yet we seem no closer to a resolution than we were in Darwin's day. In this thoughtful examination of how we teach origins, historian Adam Laats and philosopher Harvey Siegel offer crucial new ways to think not just about the evolution debate but how science and religion can make peace in the classroom. Laats and Siegel agree with most scientists: creationism is flawed, as science. But, they argue, students who believe it nevertheless need to be accommodated in public school science classes. Scientific or not, creationism maintains an important role in American history and culture as a point of religious dissent, a sustained form of protest that has weathered a century of broad—and often dramatic—social changes. At the same time, evolutionary theory has become a critical building block of modern knowledge. The key to accommodating both viewpoints, they show, is to disentangle belief from knowledge. A student does not need to believe in evolution in order to understand its tenets and evidence, and in this way can be fully literate in modern scientific thought and still maintain contrary religious or cultural views. Altogether, Laats and Siegel offer the kind of level-headed analysis that is crucial to finding a way out of our culture-war deadlock.

Humanity today functions as a gigantic, world-encompassing system. Renowned world historian, Patrick Manning traces how this human system evolved from *Homo Sapiens*' beginnings over 200,000 years ago right up to the present day. He focuses on three great shifts in the scale of social organization - the rise of syntactical language, of agricultural society, and today's newly global social discourse - and links processes of social evolution to the dynamics of biological and cultural evolution. Throughout each of these shifts, migration and social diversity have been central, and social institutions have existed in a delicate balance, serving not just their own members but undergoing regulation from society. Integrating approaches from world history, environmental studies, biological and cultural evolution, social anthropology, sociology, and evolutionary linguistics, Patrick Manning offers an unprecedented account of the evolution of humans and our

complex social system and explores the crises facing that human system today.

Principles of Evolution covers all aspects of the subject. Following an introductory section that provides necessary background, it has chapters on the evidence for evolution that cover the fossil record, DNA-sequence homologies, and protein homologies (evo-devo). It also includes a full history of life from the first universal common ancestor, through the rise of the eukaryote and on to the major groups of phyla. This section is followed by one on the mechanism of evolution with chapters on variation, selection and speciation. The main part of the book ends with a chapter on human evolution and this is followed by appendices that expand on the making of fossils, the history of the subject and creationism. What marks this book as different from others on evolution is its systems-biology perspective. This new area focuses on the role of protein networks and on multi-level complexity, and is used in three contexts. First, most biological activity is driven by such networks and this has direct implications for understanding evo-devo and for seeing how variation is initiated, mainly during embryogenesis. Second, it provides the natural language for discussing phylogenetics. Third, evolutionary change involves events at levels ranging from the genome to the ecosystem and systems biology provides a context for integrating material of this complexity. The book assumes a basic grounding in biology but little mathematics as the difficult subject of evolutionary population genetics is mainly covered qualitatively, with major results being discussed and used rather than derived. Principles of Evolution will be an interesting and thought-provoking text for undergraduates and graduates across the biological sciences.

“Rutherford describes [The Book of Humans] as being about the paradox of how our evolutionary journey turned ‘an otherwise average ape’ into one capable of creating complex tools, art, music, science, and engineering. It’s an intriguing question, one his book sets against descriptions of the infinitely amusing strategies and antics of a dizzying array of animals.”—The New York Times Book Review Publisher's Note: The Book of Humans was previously published in hardcover as *Humanimal*. In this new evolutionary history, geneticist Adam Rutherford explores the profound paradox of the human animal. Looking for answers across the animal kingdom, he finds that many things once considered exclusively human are not: We aren't the only species that “speaks,” makes tools, or has sex outside of procreation. Seeing as our genome is 98 percent identical to a chimpanzee's, our DNA doesn't set us far apart, either. How, then, did we develop the most complex culture ever observed? The Book of Humans proves that we are animals indeed—and reveals how we truly are extraordinary.

The theory of evolution unites the past, present, and future of living things. It puts humanity's place in the universe into necessary perspective. Despite a history of controversy, the evidence for evolution continues to accumulate as a result of many separate strands of amazing scientific sleuthing. In *The Story of Evolution in 25 Discoveries*, Donald R. Prothero explores the most fascinating breakthroughs in piecing together the evidence for evolution. In twenty-five vignettes, he recounts the dramatic stories of the people who made crucial discoveries, placing each moment in the context of what it represented for the progress of science. He tackles topics like what it means to see evolution in action and what the many transitional fossils show us about evolution, following figures from Darwin to lesser-known researchers as they unlock the mysteries of the fossil record, the earth, and the universe. The book also features the stories of animal species strange and familiar, including humans—and our ties to some of our closest relatives and more distant cousins. Prothero's wide-ranging tales showcase awe-inspiring and bizarre aspects of nature and the powerful insights they give us into the way that life works. Brisk and entertaining while firmly grounded in fundamental science, *The Story of Evolution in 25 Discoveries* is a captivating read for anyone curious about the evidence for evolution and what it means for humanity.

A world-famous scientist presents a synthesis of modern views on the principles of evolution. The result of twenty-five years of research, *The Meaning of Evolution* follows the rise and fall of the dynasties of life through the 2,000,000,000 years of the history of earth. It explains what forces have been acting to bring about evolution and re-examines human aims, values, and duties in the light of what science discloses of the nature of man and of his place in the history of life. The clearest and soundest exposition of the nature of the evolutionary process that has yet been written...The book may be read with equal profit and pleasure by the general reader, the student, and the expert.—Ashley Montagu, *Isis*

This book is, without question, the best general work on the meaning of evolution to appear in our time.—The New York Times
Engineer, manager, executive, author and lecturer, Dr. Joseph M. Juran compiles the first-ever international history on managing for quality. Focusing on the elements of quality management common to all industries, this volume illustrates the immense effect that quality, and its evolution, has had on civilization over the centuries. Juran brings together a richly diverse group of authors, each one a renowned authority in the field of quality management. Each of the 17 stand-alone chapters describes how managing for quality evolved in a specific geographical area and during a specific time frame of human history. Juran summarizes this historical profile with a final chapter that identifies and traces worldwide trends, derives lessons learned over history, and suggests likely directions in managing for quality for the next century.

Human beings may share 98 percent of their genetic makeup with their nonhuman primate cousins, but they have distinctive life histories. When and why did these uniquely human patterns evolve? To answer that question, this volume brings together specialists in hunter-gatherer behavioral ecology and demography, human growth, development, and nutrition, paleodemography, human paleontology, primatology, and the genomics of aging. The contributors identify and explain the peculiar features of human life histories, such as the rate and timing of processes that directly influence survival and reproduction. Drawing on new evidence from paleoanthropology, they question existing arguments that link human's extended childhood dependency and long 'post-reproductive' lives to brain development, learning, and distinctively human social structures. The volume reviews alternative explanations for the distinctiveness of human life history and incorporates multiple lines of evidence in order to test them.

This comprehensive history of cell evolution “deftly discusses the definition of life” as well as cellular organization, classification and more (San Francisco Book Review). The origin of cells remains one of the most fundamental mysteries in biology, one that has spawned a large body of research and debate over the past two decades. With *In Search of Cell History*, Franklin M. Harold offers a comprehensive, impartial take on that research and the controversies that keep the field in turmoil. Written in accessible language and complemented by a glossary for easy reference, this book examines the relationship between cells and genes; the central role of bioenergetics in the origin of life; the status of the universal tree of life with its three stems and viral outliers; and the controversies surrounding the last universal common ancestor. Harold also discusses the evolution of cellular organization, the origin of complex cells, and the incorporation of symbiotic organelles. *In Search of Cell History* shows us just how far we have come in understanding cell evolution—and the evolution of life in general—and how far we still have to go. “Wonderful...A loving distillation of connections within the incredible diversity of life in the biosphere, framing one of biology's most important remaining questions: how did life begin?”—Nature

In the 1890s, several initiatives in American botany converged. The creation of new institutions, such as the New York Botanical Garden, coincided with radical reforms in taxonomic practice and the emergence of an experimental program of research on evolutionary problems. Sharon Kingsland explores how these changes gave impetus to the new field of ecology that was defined at exactly this time. She argues that the creation of institutions and research laboratories, coupled with new intellectual directions in science, were crucial to the development of ecology as a discipline in the United States. The main concern of ecology -- the relationship between organisms and environment -- was central to scientific studies aimed at understanding and controlling the evolutionary process. Kingsland considers the evolutionary context in which ecology arose, especially neo-Lamarckian ideas and the new mutation theory, and explores the relationship between scientific research and broader theories about social progress and the evolution of human civilization. By midcentury, American ecologists were leading the rapid development of ecosystem ecology. At the same time, scientists articulated a sharp critique of modern science and society in the postwar context, foreshadowing the environmental critiques of the 1960s. As the ecosystem concept evolved, so too did debates about

how human ecology should be incorporated into the biological sciences. Kingsland concludes with an examination of ecology in the modern urban environment, reflecting on how scientists are now being challenged to overcome disciplinary constraints and produce innovative responses to pressing problems. *The Evolution of American Ecology, 1890--2000* offers an innovative study not only of the scientific landscape in turn-of-the-century America, but of current questions in ecological science.

The smallest book on evolution asks big questions. Anticipating the 150th anniversary of Charles Darwin's *The Origin of Species* throughout 2009, *Evolution* explores the history of evolutionary theory from Lamarck to Darwin to today's large questions about life in the universe. With sections on the causes of genetic variation and natural selection, the success in species of altruistic strategies, and why sharks are the same shape in different seas, and with a rich array of rarely published period illustrations and examples of the latest genetic research, this is a timely and thought-provoking book.

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.

Over time the complex idea of "species" has evolved, yet its meaning is far from resolved. This comprehensive work is a fresh look at an idea central to the field of biology by tracing its history from antiquity to today. *Species* is a benchmark exploration and clarification of a concept fundamental to the past, present, and future of the natural sciences. In this edition, a section is added on the debate over species since the time of the New Synthesis, and brings the book up to date. A section on recent philosophical debates over species has also been added. This edition is better suited non-specialists in philosophy, so that it will be of greater use for scientists wishing to understand how the notion came to be that living organisms form species. Key Selling Features: Covers the philosophical and historical development of the concept of "species" Documents that variation was recognized by pre-Darwinian scholars Includes a section on the debates since the time of the New Synthesis Better suited to non-philosophers

Excerpt from Syllabus for a Course of Study in the History of the Evolution of of the Library in Europe and America Although courses in the history of the library have been offered in other institutions and possibly along somewhat similar lines, no attempt has been made, so far as is known, to collect the materials at hand, correlate them with the social and historical development in each country, reduce this mass of data to the convenient form of a syllabus and place the result at the service of future students. The motive which has prompted the writing of this syllabus, has been largely the desire to be of assistance to the students of the library school, by helping to lighten, to some extent, the labors of note-taking, always incidental to a course for which the text-book has not yet been evolved. The outline is therefore based upon a course of lectures presented to the senior class of the Illinois state library school during the academic years of 1901 and 1902, and is limited to those phases of an essentially comprehensive subject to which attention has been called during the progress of the course. About the Publisher Forgotten Books publishes hundreds of thousands of rare and classic books. Find more at www.forgottenbooks.com This book is a reproduction of an important historical work. Forgotten Books uses state-of-the-art technology to digitally reconstruct the work, preserving the original format whilst repairing imperfections present in the aged copy. In rare cases, an imperfection in the original, such as a blemish or missing page, may be replicated in our edition. We do, however, repair the vast majority of imperfections successfully; any imperfections that remain are intentionally left to preserve the state of such historical works.

Why aren't we more like other apes? How did we win the evolutionary race? Find out how "wise" *Homo sapiens* really are. Prehistory has never been more exciting: New discoveries are overturning long-held theories left and right. Stone tools in Australia date back 65,000 years—a time when, we once thought, the first *Sapiens* had barely left Africa. DNA sequencing has unearthed a new hominid group—the Denisovans—and confirmed that crossbreeding with them (and Neanderthals) made *Homo sapiens* who we are today. *A Pocket History of Human Evolution* brings us up-to-date on the exploits of all our ancient relatives. Paleoanthropologist Silvana Condemi and science journalist François Savatier consider what accelerated our evolution: Was it tools, our "large" brains, language, empathy, or something else entirely? And why are we the sole survivors among many early bipedal humans? Their conclusions reveal the various ways ancient humans live on today—from gossip as modern "grooming" to our gendered division of labor—and what the future might hold for our strange and unique species.

A large sophisticated telescope complex sits atop a dormant volcano in one of Earth's most remote locations. Some incredibly bright but fiercely independent folks operate it much of the time. They detect, map, and perform threat analysis of near-Earth objects. Shortly after the world narrowly escapes an extinction event, they start collecting pieces of a related cosmic puzzle. When they've connected enough of them, an intriguing and disturbing picture emerges. Yet the most revealing pieces don't reveal themselves until after all life on Earth already has begun marching in lockstep toward possible oblivion.

Prize-winning study traces the rise of the vector concept from the discovery of complex numbers through the systems of hypercomplex numbers to the final acceptance around 1910 of the modern system of vector analysis.

This book presents an evolutionary theory of technological change based upon recent scholarship in the history of technology and upon relevant material drawn from economic history and anthropology. It challenges the popular notion that technology advances by the efforts of a few heroic individuals who produce a series of revolutionary inventions owing little or nothing to the technological past. Therefore, the book's argument is shaped by analogies taken selectively from the theory of organic evolution, and not from the theory and practice of political revolution. Three themes appear, and reappear with variations, throughout the study. The first is diversity: an acknowledgment of the vast numbers of different kinds of made things (artifacts) that have long been available to humanity; the second is necessity: the belief that humans are driven to invent new artifacts in order to meet basic biological requirements such as food, shelter, and defense; and the third is technological evolution: an organic analogy that explains both the emergence of novel artifacts and their subsequent selection by society for incorporation into its material life without invoking either biological necessity or technological progress. Although the book is not intended to provide a strict chronological account of the development of technology, historical examples - including many of the major achievements of Western technology: the

waterwheel, the printing press, the steam engine, automobiles and trucks, and the transistor - are used extensively to support its theoretical framework. The Evolution of Technology will be of interest to all readers seeking to learn how and why technology changes, including both students and specialists in the history of technology and science.

The history of life on Earth is, in some form or another, known to us all--or so we think. A New History of Life offers a provocative new account, based on the latest scientific research, of how life on our planet evolved--the first major new synthesis for general readers in two decades. Charles Darwin's theories, first published more than 150 years ago, form the backbone of how we understand the history of the Earth. In reality, the currently accepted history of life on Earth is so flawed, so out of date, that it's past time we need a 'New History of Life.' In their latest book, Joe Kirschvink and Peter Ward will show that many of our most cherished beliefs about the evolution of life are wrong. Gathering and analyzing years of discoveries and research not yet widely known to the public, A New History of Life proposes a different origin of species than the one Darwin proposed, one which includes eight-foot-long centipedes, a frozen "snowball Earth", and the seeds for life originating on Mars. Drawing on their years of experience in paleontology, biology, chemistry, and astrobiology, experts Ward and Kirschvink paint a picture of the origins life on Earth that are at once too fabulous to imagine and too familiar to dismiss--and looking forward, A New History of Life brilliantly assembles insights from some of the latest scientific research to understand how life on Earth can and might evolve far into the future.

Although plants comprise more than 90% of all visible life, and land plants and algae collectively make up the most morphologically, physiologically, and ecologically diverse group of organisms on earth, books on evolution instead tend to focus on animals. This organismal bias has led to an incomplete and often erroneous understanding of evolutionary theory. Because plants grow and reproduce differently than animals, they have evolved differently, and generally accepted evolutionary views—as, for example, the standard models of speciation—often fail to hold when applied to them. Tapping such wide-ranging topics as genetics, gene regulatory networks, phenotype mapping, and multicellularity, as well as paleobotany, Karl J. Niklas's Plant Evolution offers fresh insight into these differences. Following up on his landmark book The Evolutionary Biology of Plants—in which he drew on cutting-edge computer simulations that used plants as models to illuminate key evolutionary theories—Niklas incorporates data from more than a decade of new research in the flourishing field of molecular biology, conveying not only why the study of evolution is so important, but also why the study of plants is essential to our understanding of evolutionary processes. Niklas shows us that investigating the intricacies of plant development, the diversification of early vascular land plants, and larger patterns in plant evolution is not just a botanical pursuit: it is vital to our comprehension of the history of all life on this green planet. Looks at how the case for evolution developed over time, covering Darwin and the Beagle, heredity and natural selection, DNA, and man's place in the natural world.

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