Wonderful Life The Burgess Shale And Nature Of History Stephen Jay Gould

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The Cambrian Fossils of Chengjiang, China Routledge
This book examines the work of prominent South African geologist Alex Du Toit as a means of understanding the debate around continental drift both in segregation-era South Africa and internationally. It contextualises Du Toit's work within a particularly formative period of South African science, from the paleoanthropological discoveries that sparked debates about the origins of humankind to Jan Smuts' own theory of holism. Beyond South African scientific discoveries, the book sets Du Toit's work against a backdrop of ideological struggles over space, both domestically in terms of segregation and nationalism, as well as internationally as South Africa sought to assert its position within the Commonwealth. These debates were embodied by Du Toit's work on the theory of continental drift, which put Africa – and South Africa – at the centre geologically and geographically. The author also focuses on the divisions in geology caused by drift theory, tracing the vigorous intellectual debate and dissent indicative of the ideological milieu within which scientific thought is constructed. It traces the history of continental drift from its inception in the nineteenth century and later work of Alfred Wegener, which was both elaborated upon and substantiated by Du Toit. The study further focuses on Du Toit's research on continental drift in South African and South America, and the geological, fossil and climatological evidence used to bolster this theory.

Punctuated Equilibrium Infobase Publishing
A loving portrayal of our precious planet that offers easy-to-grasp discussions of scientific concepts and detailed examinations of Earth's tectonic, biological, and paleontological forces... Did you know that the history of Earth can be revealed by examining everything on it? From the esoteric science of minerals to the interactions between humans and their environment, our planet provides answers to every question we could ask about its history and what lies ahead. As climate change impacts everything we do on our planet, now is the time to take a closer look at what messages Earth has for us: what does it mean when the wind blows or the ground shifts? In this book, geologist Elisabeth Ervin-Blankenheim reveals the history of our planet through a geologic lens and explains why everyone should care about it. Song of the Earth is a thrilling biography of our planet that equips readers with the scientific, historical, and philosophical symbiosis between humans and Earth. Ervin-Blankenheim explores geologic principles of deep time, plate tectonics, and change in life forms in plain English. The book is illustrated with striking maps, diagrams, and pictures, allowing her to dissect everything from how a roiling, molten planet cooled to how the first cyanobacteria began to oxygenate the atmosphere to how the atmosphere has changed over time. Ervin-Blankenheim journeys through the science with ease and provides narrative sections about pioneering geologists and their groundbreaking discoveries. In viewing the planet as the integrated ecosystem it is, Ervin-Blankenheim showcases how land, water, life, and the atmosphere maintain an elegant yet delicate balance--one that, based on the author's evidence of current trends in the context of past planetary cataclysm, appears to be under imminent threat. At times both gripping and lovingly poetic, Song of the Earth shows not only how Earth has influenced life, but also how life has distinctly shaped our planet.

Early Life Wipf and Stock Publishers
"I read lots of books in which science education researchers tell science teachers how to teach. This book, refreshingly, is written the other way round.We read a number of accounts by outstanding science and technology teachers of how they use new approaches to teaching to motivate their students and maximise their learning. These accounts are then followed by some excellentanalyses from leading academics. I learnt a lot from reading this book." Professor Michael Reiss, Institute of Education, University of London "Provides an important new twist on one of the enduring problems of case-based learning... This is a book that deserves careful reading and re-reading, threading back and forwards from the immediate and practical images of excellence in the teachers ' cases to the comprehensive andscholarly analyses in the researchers ' thematic chapters." Professor William Louden, Edith Cowan University, Australia Through a celebration of teaching and research, this book explores exemplary practice in science education and fuses educational theory and classroom practice inunique ways. Analysing Exemplary Science Teaching brings together twelve academics, ten innovativeteachers and three exceptional students in a conversation about teaching and learning.Teachers and students describe some of their most noteworthy classroom practice,whilst scholars of international standing use educational theory to discuss, define andanalyse the documented classroom practice. Classroom experiences are directly linked with theory by a series of annotatedcomments. This distinctive web-like structure enables the reader to actively movebetween

practice and theory, reading about classroom innovation and then theorizingabout the basis and potential of this teaching approach. Providing an international perspective, the special lessons described and analysed aredrawn from middle and secondary schools in the UK, Canada and Australia. This bookis an invaluable resource for preservice and inservice teacher education, as well as forgraduate studies. It is of interest to a broad spectrum of individuals, including trainingteachers, teachers, researchers, administrators and curriculum coordinators in scienceand technology education.

Oracles of Science Univ of California Press

More than any other modern scientists, Stephen Jay Gould has opened up to millions the wonders of evolutionary biology. His genius as an essayist lies in his unmatched ability to use his knowledge of the world, including popular culture, to illuminate the realm of science. Ever Since Darwin, Stephen Jay Gould's first book, has sold more than a quarter of a million copies. Like all succeeding collections by this unique writer, it brings the art of the scientific essay to unparalleled heights.

Hen's Teeth and Horse's Toes Columbia University Press

Big History is a new field on a grand scale: it tells the story of the universe over time through a diverse range of disciplines that spans cosmology, physics, chemistry, astronomy, geology, evolutionary biology, anthropology, and archaeology, thereby reconciling traditional human history with environmental geography and natural history. Weaving the myriad threads of evidence-based human knowledge into a master narrative that stretches from the beginning of the universe to the present, the Big History framework helps students make sense of their studies in all disciplines by illuminating the structures that underlie the universe and the connections among them. Teaching Big History is a powerful analytic and pedagogical resource, and serves as a comprehensive guide for teaching Big History, as well for sharing ideas about the subject and planning a curriculum around it. Readers are also given helpful advice about the administrative and organizational challenges of instituting a general education program constructed around Big History. The book includes teaching materials, examples, and detailed sample exercises. This book is also an engaging first-hand account of how a group of professors built an entire Big History general education curriculum for first-year students, demonstrating how this thoughtful integration of disciplines exemplifies liberal education at its best and illustrating how teaching and learning this incredible story can be transformative for professors and students alike.

Fossils of the Burgess Shale Basic Books

Is Darwinian evolution really the most successful scientific theory ever proposed—or even the best idea anyone has ever had, as Daniel Dennett once put it? The Mystery of Evolutionary Mechanisms provides a comprehensive critical reading of the literature of evolutionary biology from Darwin to Dobzhansky to Dawkins, revealing this popular account of evolution to be a grand narrative of Darwinian triumph that greatly overstates the empirical validity of modern evolutionary theory. The mechanisms driving the evolutionary process truly remain a mystery more than one hundred fifty years after Origin of Species, a fact that can free religion scholars to think in more creative ways about the positive contributions religious reflection might make to our understanding of life’s origin and diversity. The Mystery of Evolutionary Mechanisms calls for an embrace of mystery, understood not as an abdication of the scientific quest for truth but as a courageous and humble acknowledgment of the limits of human reason and an openness to a fundamentally religious orientation toward life.

Rocks of Ages Little, Brown

"People of good will wish to see science and religion at peace. . . . I do not see how science and religion could be unified, or even synthesized, under any common scheme of explanation or analysis; but I also do not understand why the two enterprises should experience any conflict." So states internationally renowned evolutionist and bestselling author Stephen Jay Gould in the simple yet profound thesis of his brilliant new book. Writing with bracing intelligence and elegant clarity, Gould sheds new light on a dilemma that has plagued thinking people since the Renaissance. Instead of choosing between science and religion, Gould asks, why not opt for a golden mean that accords dignity and distinction to each realm? At the heart of Gould's penetrating argument is a lucid, contemporary principle he calls NOMA (for nonoverlapping magisteria)--a "blessedly simple and entirely conventional resolution" that allows science and religion to coexist peacefully in a position of respectful noninterference. Science defines the natural world; religion, our moral world, in recognition of their separate spheres of influence. In elaborating and exploring this thought-provoking concept, Gould delves into the history of science, sketching affecting portraits of scientists and moral leaders wrestling with matters of faith and reason. Stories of seminal figures such as Galileo, Darwin, and Thomas Henry Huxley make vivid his argument that individuals and cultures must cultivate both a life of the spirit and a life of rational inquiry in order to experience the fullness of being human. In his bestselling books Wonderful Life, The Mismeasure of Man, and Questioning the Millennium, Gould has written on the abundance of marvels in human history and the natural world. In Rocks of Ages, Gould's passionate humanism, ethical discernment, and erudition are fused to create a dazzling gem of contemporary cultural philosophy. As the world's preeminent Darwinian theorist writes, "I believe, with all my heart, in a respectful, even loving concordat between . . . science and religion."

UFOs, Chemtrails, and Aliens Wipf and Stock Publishers

UFOs. Aliens. Strange crop circles. Giant figures scratched in the desert surface along the coast of Peru. The amazing alignment of the pyramids. Strange lines of clouds in the sky. The paranormal is alive and well in the

American cultural landscape. In UFOs, Chemtrails, and Aliens, Donald R. Prothero and Tim Callahan explore why such demonstrably false beliefs thrive despite decades of education and scientific debunking. Employing the ground rules of science and the standards of scientific evidence, Prothero and Callahan discuss a wide range of topics including the reliability of eyewitness testimony, psychological research into why people want to believe in aliens and UFOs, and the role conspiratorial thinking plays in UFO culture. They examine a variety of UFO sightings and describe the standards of evidence used to determine whether UFOs are actual alien spacecraft. Finally, they consider our views of aliens and the strong cultural signals that provide the shapes and behaviors of these beings. While their approach is firmly based in science, Prothero and Callahan also share their personal experiences of Area 51, Roswell, and other legendary sites, creating a narrative that is sure to engross both skeptics and believers.

FOSSILS OF BURGESS SHALE PB Oxford University Press

What are the things that God values in the creative process? How does one define God's activity in such a world? How is God's involvement different from a contingent--what this author labels contingentist--instance? Why do we need a God-idea at all? Herein, Bradford McCall addresses how divine, amorepotent love works with and within a contingentist (i.e., radically contingent) evolutionary theory and worldview. Within the course of this project, he reaches a via media between the (somewhat) radical formalist position of Simon Conway Morris and the veritably radical contingent position of Stephen Jay Gould. But . . . how is the contingentist amorepotent and uncontrolling love of God understood as purposeful? McCall argues in detail that there in fact is some sort of purposiveness that is nevertheless working in a chastened Gouldian position, and he distinguishes between contingency and veritable divine involvement. He contends that God does not insist upon a particular outcome but merely allows propensities to work themselves out. God amorepotently loves the population of the natural world into greater forms of complexity, relationality, and beauty in varied and multifarious forms, along with the extension of diversity.

The Story of Life in 25 Fossils Breakwater Books

The celebrated lower Cambrian Chengjiang biota of Yunnan Province, China, represents one of the most significant ever paleontological discoveries. Deposits of ancient mudstone, about 520 million years old, have yielded a spectacular variety of exquisitely preserved fossils that record the early diversification of animal life. Since the discovery of the first specimens in 1984, many thousands of fossils have been collected, exceptionally preserving not just the shells and carapaces of the animals, but also their soft tissues in fine detail. This special preservation has produced fossils of rare beauty; they are also of outstanding scientific importance as sources of evidence about the origins of animal groups that have sustained global biodiversity to the present day. Much of the scientific documentation of the Chengjiang biota is in Chinese, and the first edition of this book was the first in English to provide fossil enthusiasts with a comprehensive overview of the fauna. The second edition has been fully updated and includes a new chapter on other exceptionally preserved fossils of Cambrian age, exciting new fossil finds from Chengjiang, and a phylogenetic framework for the biota. Displaying some 250 figures of marvelous specimens, this book presents to professional and amateur paleontologists, and all those fascinated by evolutionary biology, the aesthetic and scientific quality of the Chengjiang fossils.

Life in Stone Harvard University Press

A groundbreaking argument for why alien life will evolve to be much like life here on Earth We are all familiar with the popular idea of strange alien life wildly different from life on earth inhabiting other planets. Maybe it's made of silicon! Maybe it has wheels! Or maybe it doesn't. In The Equations of Life, biologist Charles S. Cockell makes the forceful argument that the laws of physics narrowly constrain how life can evolve, making evolution's outcomes predictable. If we were to find on a distant planet something very much like a lady bug eating something like an aphid, we shouldn't be surprised. The forms of life are guided by a limited set of rules, and as a result, there is a narrow set of solutions to the challenges of existence. A remarkable scientific contribution breathing new life into Darwin's theory of evolution, The Equations of Life makes a radical argument about what life can -- and can't -- be.

Ever Since Darwin: Reflections in Natural History Harvard University Press

A major new book overturning our assumptions about how evolution works Earth’s natural history is full of fascinating instances of convergence: phenomena like eyes and wings and tree-climbing lizards that have evolved independently, multiple times. But evolutionary biologists also point out many examples of contingency, cases where the tiniest change—a random mutation or an ancient butterfly sneeze—caused evolution to take a completely different course. What role does each force really play in the constantly changing natural world? Are the plants and animals that exist today, and we humans ourselves, inevitabilities or evolutionary flukes? And what does that say about life on other planets? Jonathan Losos reveals what the latest breakthroughs in evolutionary biology can tell us about one of the greatest ongoing debates in science. He takes us around the globe to meet the researchers who are solving the deepest mysteries of life on Earth through their work in experimental evolutionary science. Losos himself is one of the leaders in this exciting new field, and he illustrates how experiments with guppies, fruit flies, bacteria, foxes, and field mice, along with his own work with anole lizards on Caribbean islands, are rewinding the tape of life to reveal just how rapid and predictable evolution can be. Improbable Destinies will change the way we think and talk about evolution. Losos's insights into natural selection and evolutionary change have far-reaching applications for protecting ecosystems, securing our food supply, and fighting off harmful viruses and bacteria. This compelling narrative offers a new understanding of ourselves and our role in the natural world and the cosmos.

Earth's Evolving Systems Arrow

A major new book overturning our assumptions about how evolution works Earth’s natural history is full of fascinating instances of

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Voyages: Canada's Heritage Rivers (soft cover) Ballantine Books
Paleontologist Simon Conway Morris provides a guided tour of the world's richest treasure trove of fossils--a fantastically rich deposit of bizarre and bewildering Cambrain fossils, located in Western Canada. 4 plates. 90 linecuts.

The Mountain Mystery Field, B.C. : Burgess Shale Geoscience Foundation
Fifty years ago, no one could explain mountains. Arguments about their origin were spirited, to say the least. Progressive scientists were ridiculed for their ideas. Most geologists thought the Earth was shrinking. Contracting like a hot ball of iron, shrinking and exposing ridges that became mountains. Others were quite sure the planet was expanding. Growth widened sea basins and raised mountains. There was yet another idea, the theory that the world's crust was broken into big plates that jostled around, drifting until they collided and jarred mountains into existence. That idea was invariably dismissed as pseudo-science. Or "utter damned rot" as one prominent scientist said. But the doubtful theory of plate tectonics prevailed. Mountains, earthquakes, ancient ice ages, even veins of gold and fields of oil are now seen as the offspring of moving tectonic plates. Just half a century ago, most geologists sternly rejected the idea of drifting continents. But a few intrepid champions of plate tectonics dared to differ. The Mountain Mystery tells their story.

'Africa Forms the Key' UBC Press
Discusses the Cambrian era in Earth's history, when the first forms of life appeared and began to flourish and evolve.

Wonderful Life [sound Recording] : the Burgess Shale and the Nature of History W. W. Norton & Company
Lively and fascinating. . . . Gould] writes beautifully about science and the wonders of nature. Tracy Kidder

Bartlett's Familiar Quotations Natural Resources Canada
More than 150 years after its original publication, Bartlett's Familiar Quotations has been completely revised and updated for its eighteenth edition. Bartlett's showcases a sweeping survey of world history, from the times of ancient Egyptians to present day. New authors include Warren Buffett, the Dalai Lama, Bill Gates, David Foster Wallace, Emily Post, Steve Jobs, Jimi Hendrix, Paul Krugman, Hunter S. Thompson, Jon Stewart, Elizabeth Kubler-Ross, Barack Obama, Che Guevara, Randy Pausch, Desmond Tutu, Julia Child, Fran Leibowitz, Harper Lee, Nassim Nicholas Taleb, Patti Smith, William F. Buckley, and Robert F. Kennedy. In the classic Bartlett's tradition, the book offers readers and scholars alike a vast, stunning representation of those words that have influenced and molded our language and culture.

The Flamingo's Smile: Reflections in Natural History W. W. Norton & Company
"Provocative and delightfully discursive essays on natural history. . . . Gould is the Stan Musial of essay writing. He can work himself into a corkscrew of ideas and improbable allusions paragraph after paragraph and then, uncoiling, hit it with such power that his fans know they are experiencing the game of essay writing at its best."--John Noble Wilford, New York Times Book Review

The Equations of Life Penguin
Every fossil tells a story. Best-selling paleontology author Donald R. Prothero describes twenty-five famous, beautifully preserved fossils in a gripping scientific history of life on Earth. Recounting the adventures behind the discovery of these objects and fully interpreting their significance within the larger fossil record, Prothero creates a riveting history of life on our planet. The twenty-five fossils portrayed in this book catch animals in their evolutionary splendor as they transition from one kind of organism to another. We witness extinct plants and animals of microscopic and immense size and thrilling diversity. We learn about fantastic land and sea creatures that have no match in nature today. Along the way, we encounter such fascinating fossils as the earliest trilobite, Olenellus; the giant shark Carcharocles; the "fishibian" Tiktaalik; the "Frogamander" and the "Turtle on the Half-Shell"; enormous marine

reptiles and the biggest dinosaurs known; the first bird, Archaeopteryx; the walking whale Ambulocetus; the gigantic hornless rhinoceros Paraceratherium, the largest land mammal that ever lived; and the Australopithecus nicknamed "Lucy," the oldest human skeleton. We meet the scientists and adventurers who pioneered paleontology and learn about the larger intellectual and social contexts in which their discoveries were made. Finally, we find out where to see these splendid fossils in the world's great museums. Ideal for all who love prehistoric landscapes and delight in the history of science, this book makes a treasured addition to any bookshelf, stoking curiosity in the evolution of life on Earth.