

Sedimentary Geology By Donald R Prothero Pdf

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Greenhouse of the Dinosaurs - Donald R. Prothero 2009-07-01

Donald R. Prothero's science books combine leading research with first-person narratives of discovery, injecting warmth and familiarity into a profession that has much to offer nonspecialists. Bringing his trademark style and wit to an increasingly relevant subject of concern, Prothero links the climate changes that have occurred over the past 200 million years to their effects on plants and animals. In particular, he contrasts the extinctions that ended the Cretaceous period, which wiped out the dinosaurs, with those of the later Eocene and Oligocene epochs. Prothero begins with the "greenhouse of the dinosaurs," the global-warming episode that dominated the Age of Dinosaurs and the early Age of Mammals. He describes the remarkable creatures that once populated the earth and draws on his experiences collecting fossils in the Big Badlands of South Dakota to sketch their world. Prothero then discusses the growth of the first Antarctic glaciers, which marked the Eocene-Oligocene transition, and shares his own anecdotes of excavations and controversies among colleagues that have shaped our understanding of the contemporary and prehistoric world. The volume concludes with observations about Nisqually Glacier and other locations that show how global warming is happening much quicker than previously predicted, irrevocably changing the balance of the earth's thermostat. Engaging scientists and general readers alike, *Greenhouse of the Dinosaurs* connects events across thousands of millennia to make clear the human threat to natural climate change.

The Story of the Dinosaurs in 25 Discoveries - Donald R. Prothero 2019-07-16

Today, any kid can rattle off the names of dozens of dinosaurs. But it took centuries of scientific effort—and a lot of luck—to discover and establish the diversity of dinosaur species we now know. How did we learn that Triceratops had three horns? Why don't many paleontologists consider Brontosaurus a valid species? What convinced scientists that modern birds are relatives of ancient Velociraptor? In *The Story of the Dinosaurs in 25 Discoveries*, Donald R. Prothero tells the fascinating stories behind the most important fossil finds and the intrepid researchers who unearthed them. In twenty-five vivid vignettes, he weaves together dramatic tales of dinosaur discoveries with what modern science now knows about the species to which they belong. Prothero takes us from eighteenth-century sightings of colossal bones taken for biblical giants through recent discoveries of enormous predators even larger than Tyrannosaurus. He recounts the escapades of the larger-than-life personalities who made modern paleontology, including scientific rivalries like the nineteenth-century "Bone Wars." Prothero also details how to draw the boundaries between species and explores debates such as whether dinosaurs had feathers, explaining the findings that settled them or keep them going. Throughout, he offers a clear and rigorous look at what paleontologists consider sound interpretation of evidence. An essential read for any dinosaur lover, this book teaches us to see an ancient world ruled by giant majestic creatures anew.

Weird Earth - Donald R. Prothero 2020-07-14

Aliens. Ley lines. Water dowsing. Conspiracies and myths captivate imaginations and promise mystery and magic. Whether it's arguing about the moon landing hoax or a Frisbee-like Earth drifting through space, when held up to science and critical thinking, these ideas fall flat. In *Weird Earth: Debunking Strange Ideas About Our Planet*, Donald R. Prothero demystifies these conspiracies and offers answers to some of humanity's most outlandish questions. Applying his extensive scientific knowledge, Prothero corrects misinformation that con artists and quacks use to hoodwink others about geology—hollow earth, expanding earth, and bizarre earthquakes—and mystical and paranormal happenings—healing crystals, alien landings, and the gates of hell. By deconstructing wild claims such as prophecies of imminent natural disasters, Prothero provides a way for everyone to recognize dubious

assertions. Prothero answers these claims with facts, offering historical and scientific context in a light-hearted manner that is accessible to everyone, no matter their background. With a careful layering of evidence in geology, archaeology, and biblical and historical records, Prothero's *Weird Earth* examines each conspiracy and myth and leaves no question unanswered.

Principles of Paleontology - David Raup 1978-03-15

Explains in a clear and concise manner the factors involved in the description and classification of fossils and the practical applications of paleontologic data

Horns, Tusks, and Flippers - Donald R. Prothero 2002

Since the extinction of the dinosaurs, hoofed mammals have been the planet's dominant herbivores. Native to all continents except Australia and Antarctica, recent paleontological and biological discoveries have deepened understanding of their evolution. This text reveals their evolutionary history.

The Story of the Earth in 25 Rocks - Donald R. Prothero 2018-01-02

Every rock is a tangible trace of the earth's past. *The Story of the Earth in 25 Rocks* tells the fascinating stories behind the discoveries that shook the foundations of geology. In twenty-five chapters—each about a particular rock, outcrop, or geologic phenomenon—Donald R. Prothero recounts the scientific detective work that shaped our understanding of geology, from the unearthing of exemplary specimens to tectonic shifts in how we view the inner workings of our planet. Prothero follows in the footsteps of the scientists who asked—and answered—geology's biggest questions: How do we know how old the earth is? What happened to the supercontinent Pangea? How did ocean rocks end up at the top of Mount Everest? What can we learn about our planet from meteorites and moon rocks? He answers these questions through expertly chosen case studies, such as Pliny the Younger's firsthand account of the eruption of Vesuvius; the granite outcrops that led a Scottish scientist to theorize that the landscapes he witnessed were far older than Noah's Flood; the salt and gypsum deposits under the Mediterranean Sea that indicate that it was once a desert; and how trying to date the age of meteorites revealed the dangers of lead poisoning. Each of these breakthroughs filled in a piece of the greater puzzle that is the earth, with scientific discoveries dovetailing with each other to offer an increasingly coherent image of the geologic past. Summarizing a wealth of information in an entertaining, approachable style, *The Story of the Earth in 25 Rocks* is essential reading for the armchair geologist, the rock hound, and all who are curious about the earth beneath their feet.

Geology and Paleontology of Five Cores from Screven and Burke Counties, Eastern Georgia - Lucy E. Edwards 2001

The Late Neogene - 2011-09-21

The Late Neogene

After the Dinosaurs - Donald R. Prothero 2006-07-13

A fascinating study of the thousands of new animal species that walked in the footsteps of the dinosaurs—and the climate changes that brought them forth. The fascinating group of animals called dinosaurs became extinct some 65 million years ago (except for their feathered descendants). In their place evolved an enormous variety of land creatures, especially mammals, which in their way were every bit as remarkable as their Mesozoic cousins. The Age of Mammals, the Cenozoic Era, has never had its Jurassic Park, but it was an amazing time in earth's history, populated by a wonderful assortment of bizarre animals. The rapid evolution of thousands of species of mammals brought forth many incredible creatures—including our own ancestors. Their story is part of a larger story of new life emerging from the greenhouse conditions of the Mesozoic, warming up dramatically about 55 million years ago, and then cooling rapidly so that 33 million years ago the glacial ice returned. The earth's vegetation went through equally

dramatic changes, from tropical jungles in Montana and forests at the poles. Life in the sea underwent striking evolution reflecting global climate change, including the emergence of such creatures as giant sharks, seals, sea lions, dolphins, and whales. Engaging and insightful, *After the Dinosaurs* is a book for everyone who has an abiding fascination with the remarkable life of the past.

[Bringing Fossils to Life](#) - Donald R. Prothero 2013-11-05

One of the leading textbooks in its field, *Bringing Fossils to Life* applies paleobiological principles to the fossil record while detailing the evolutionary history of major plant and animal phyla. It incorporates current research from biology, ecology, and population genetics, bridging the gap between purely theoretical paleobiological textbooks and those that describe only invertebrate paleobiology and that emphasize cataloguing live organisms instead of dead objects. For this third edition Donald R. Prothero has revised the art and research throughout, expanding the coverage of invertebrates and adding a discussion of new methodologies and a chapter on the origin and early evolution of life.

[Introduction to Geochemistry](#) - Kula C. Misra 2012-05-21

This book is intended to serve as a text for an introductory course in geochemistry for undergraduate/graduate students with at least an elementary-level background in earth sciences, chemistry, and mathematics. The text, containing 83 tables and 181 figures, covers a wide variety of topics — ranging from atomic structure to chemical and isotopic equilibria to modern biogeochemical cycles — which are divided into four interrelated parts: Crystal Chemistry; Chemical Reactions (and biochemical reactions involving bacteria); Isotope Geochemistry (radiogenic and stable isotopes); and The Earth Supersystem, which includes discussions pertinent to the evolution of the solid Earth, the atmosphere, and the hydrosphere. In keeping with the modern trend in the field of geochemistry, the book emphasizes computational techniques by developing appropriate mathematical relations, solving a variety of problems to illustrate application of the mathematical relations, and leaving a set of questions at the end of each chapter to be solved by students. However, so as not to interrupt the flow of the text, involved chemical concepts and mathematical derivations are separated in the form of boxes. Supplementary materials are packaged into ten appendixes that include a standard-state (298.15 K, 1 bar) thermodynamic data table and a listing of answers to selected chapter-end questions. Additional resources for this book can be found at: www.wiley.com/go/misra/geochemistry.

[The Gulf of Mexico Sedimentary Basin](#) - John W. Snedden 2019-11-21

A comprehensive and richly illustrated overview of the Gulf of Mexico Basin, including its reservoirs, source rocks, tectonics and evolution.

[Why Evolution is True](#) - Jerry A. Coyne 2010-01-14

For all the discussion in the media about creationism and 'Intelligent Design', virtually nothing has been said about the evidence in question - the evidence for evolution by natural selection. Yet, as this succinct and important book shows, that evidence is vast, varied, and magnificent, and drawn from many disparate fields of science. The very latest research is uncovering a stream of evidence revealing evolution in action - from the actual observation of a species splitting into two, to new fossil discoveries, to the deciphering of the evidence stored in our genome. *Why Evolution is True* weaves together the many threads of modern work in genetics, palaeontology, geology, molecular biology, anatomy, and development to demonstrate the 'indelible stamp' of the processes first proposed by Darwin. It is a crisp, lucid, and accessible statement that will leave no one with an open mind in any doubt about the truth of evolution.

[Quaternary Climates, Environments and Magnetism](#) - Barbara A. Maher 1999-10-14

The Quaternary has been a period of major climatic and environmental oscillations, and our knowledge of these past variations is important for our understanding of the possible impact of human activity on the present-day environment. First published in 1999, *Quaternary Climates, Environments and Magnetism* presents an account of the rich variety of uses of magnetic measurements in the environmental geosciences. Ten chapters by leading world authorities describe the highlights of environmental magnetic work during the last decade and identify directions for future research. Emphasis is placed on a multidisciplinary approach to achieve a more thorough understanding of the environmental processes involved. This volume will be of interest to research scientists from a wide range of disciplines working on Quaternary environments, including earth and environmental sciences, physical geology, geography and palaeoclimatology. It will also be

valuable as a supplementary text for graduates and advanced undergraduates.

Power Up Your Mind - Bill Lucas 2011-07-12

Shows how everyone has the capacity to succeed and how most use only a small portion of their talents.

Vertebrate Evolution - Donald R. Prothero 2022-04-19

The first vertebrate animals appear in the fossil record over 520 million years ago. These lineages diversified and eventually crept ashore leading to further evolutionary divergence and the appearance of the familiar charismatic vertebrates of today. From the tiniest fishes, diminutive salamanders, and miniaturized lizards to gargantuan dinosaurs, enormous brontotheres, and immense whales, vertebrates have captured the imagination of the lay public as well as the most erudite academics. They are the among the best studied organisms. This book employs beautifully rendered illustrations of these diverse lineages along with informative text to document a rich evolutionary history. The prolific and best-selling author reveals much of the latest findings regarding the phylogenetic history of vertebrates without overwhelming the reader with pedantry and excessive jargon. Simultaneously, comprehensive and authoritative while being approachable and lucid, this book should appeal to both the scholar, the student, and the fossil enthusiast. Key Features Provides an up-to-date account of evolution of vertebrates Includes numerous beautiful color reconstructions of prehistoric vertebrates Describes extinct vertebrates and their evolutionary history Discusses and illustrates the first vertebrates, as well as familiar lineages of fishes, amphibians, reptiles, birds, and mammals Reviews mass extinctions and other important events in the diversification of vertebrates Related Titles Bard, J. *Evolution: The Origins and Mechanisms of Diversity* (ISBN 9780367357016) Böhmer, C., et al. *Atlas of Terrestrial Mammal Limbs* (ISBN 9781138705906) Diogo, R., et al. *Muscles of Chordates: Development, Homologies, and Evolution* (ISBN 9781138571167) Schweitzer, M. H., et al. *Dinosaurs: How We Know What We Know* (ISBN 9780367563813)

The Evolving Earth - Donald R. Prothero 2020

"'The Evolving Earth' is a higher education geology textbook, aiming to teach evolution to non-majors. The book will emphasize popular topics such as dinosaurs, mass extinctions, ice ages, climate change, and the origins of Earth and life"--

[Vertebrate Paleontology in Utah](#) - David D. Gillette 1999

The 52 papers in this vary in content from summaries or state-of-knowledge treatments, to detailed contributions that describe new species. Although the distinction is subtle, the title (*Vertebrate Paleontology in Utah*) indicates the science of paleontology in the state of Utah, rather than the even more ambitious intent if it were given the title "*Vertebrate Paleontology of Utah*" which would promise an encyclopedic treatment of the subject. The science of vertebrate paleontology in Utah is robust and intense. It has grown prodigiously in the past decade, and promises to continue to grow indefinitely. This research benefits everyone in the state, through Utah's museums and educational institutions, which are the direct beneficiaries.

Petrology of Sedimentary Rocks - Sam Boggs, Jr 2009-02-19

Advanced textbook outlining the physical, chemical, and biological properties of sedimentary rocks through petrographic microscopy, geochemical techniques, and field study.

[Sedimentology and Sedimentary Basins](#) - Mike R. Leeder 1999-09-27

Sedimentology is a core discipline of earth and environmental sciences. It enquires the origins, transport and deposition of mineral sediment on the Earth's surface. The subject is a link between positive effects arising from the building of relief by tectonics and the negative action of denudation in drainage catchments and tectonic subsidence in sedimentary basins. The author addresses the principles of the subject, emphasising the advantages of a general science approach and the importance of understanding modern processes. *Sedimentology and Sedimentary Basins* is not an encyclopaedia, but attempts to stimulate interdisciplinary thought across the whole subject area and related disciplines. The book has been designed to meet the needs of earth and environmental science undergraduates.

Earth Materials - Cornelis Klein 2013

Key concepts in mineralogy and petrology are explained alongside beautiful full-color illustrations, in this concisely written textbook.

[Sedimentary Geology](#) - Bernard Biju-Duval 2002

In this work, the reader will find the basic concepts and vocabulary of sedimentary geology, along with a presentation of the new ideas that are in current use in petroleum exploration. This abundantly illustrated book will serve as an excellent educational tool and remain a valuable

resource and handy reference work in any petroleum geology library. Contents: 1. Basics of dynamic geology. 2. Continental and oceanic basins. 3. Sedimentary driving mechanisms and environments. 4. Time evolution: Sedimentary sequences, stratigraphy. 5. From sediments to sedimentary basin rocks and mountain chains. 6. Petroleum systems. Index. State of Strain. 2. State of Stress. 3. Thermodynamics of Continuous Media. II. Mechanism of Material Strain. 4. Linear Elasticity. General Theory. 5. Plane Theory of Elasticity. 6. Behaviour of a Material Containing Cavities. 7. Thermodynamics of Saturated Porous Media. 8. Infinitesimal Thermoporoelasticity. 9. The Triaxial Test and the Measurement of Thermoporoelastic Properties. 10. Thermoporoelastoplasticity. General Theory and Application. III. Mechanisms of Material Cohesion Loss. 11. Fissuring. 12. Introduction to Damage Theory. 13. Appearance of Shearing Bands in Geomaterials. Petrography of Igneous and Metamorphic Rocks - Anthony Robert Philpotts 2003

A laboratory manual for introductory courses in optical mineralogy. The illustrations are bandw, but available in color on a video cassette from the author. Annotation copyrighted by Book News, Inc., Portland, OR **Engineering Geology for Society and Territory - Volume 5** - Giorgio Lollino 2014-08-25

This book is one out of 8 IAEG XII Congress volumes, and deals with the theme of urban geology. Along with a rapidly growing world population, the wave of urban growth continues, causing cities to swell and new metropolitan centers to emerge. These global trends also open new ventures for underground city development. Engineering geology plays a major role in facing the increasing issues of the urban environment, such as: finding aggregates for construction works; providing adequate water supply and waste management; solving building problems associated to geological and geomorphological conditions; evaluating host rock conditions for underground constructions; preventing or mitigating geological and seismic hazards. Furthermore, this book illustrates recent advancements in sustainable land use planning, which includes conservation, protection, reclamation and landscape impact of open pit mining and alternative power generation. The Engineering Geology for Society and Territory volumes of the IAEG XII Congress held in Torino from September 15-19, 2014, analyze the dynamic role of engineering geology in our changing world and build on the four main themes of the congress: environment, processes, issues and approaches. The congress topics and subject areas of the 8 IAEG XII Congress volumes are: 1. Climate Change and Engineering Geology 2. Landslide Processes River Basins 3. Reservoir Sedimentation and Water Resources 4. Marine and Coastal Processes Urban Geology 5. Sustainable Planning and Landscape Exploitation 6. Applied Geology for Major Engineering Projects 7. Education, Professional Ethics and Public Recognition of Engineering Geology 8. Preservation of Cultural Heritage

Sedimentary Geology - Donald R. Prothero 2013-12-30

Written for a first course in sedimentary geology or sedimentary rocks and stratigraphy (with only an introductory geology/physical geology course as a prerequisite), Prothero and Schwab shows students how sedimentary strata serves geologists as a continuous record of Earth's history. The authors' conversational style, and focus on the important concepts make the book highly accessible to an undergraduate audience. *California's Amazing Geology* - Donald R. Prothero 2017-02-17 California has some of the most distinctive and unique geology in the United States. It is the only state with all three types of plate boundaries, an extraordinary history of earthquakes and volcanoes, and it has many rocks and minerals found nowhere else. The Golden State includes both the highest and lowest point in the continental US and practically every conceivable geological feature known. This book discusses not only the important geologic features of each region in California, but also the complex geologic four-dimensional puzzle of how California was assembled, beginning over 2 billion years ago. The author provides up-to-date and authoritative review of the geology and geomorphology of each geologic province, as well as recent revelations of tectonic history of California's past. There are separate chapters on some of California's distinctive geologic resources, including gold, oil, water, coastlines, and fossils. An introductory section describes basic rock and mineral types and fundamental aspects of plate tectonics, so that students and other readers can make sense of the bizarre, wild, and crazy jigsaw puzzle that is California's geological history.

Rare Earth - Peter D. Ward 2007-05-08

What determines whether complex life will arise on a planet, or even any life at all? Questions such as these are investigated in this groundbreaking book. In doing so, the authors synthesize information

from astronomy, biology, and paleontology, and apply it to what we know about the rise of life on Earth and to what could possibly happen elsewhere in the universe. Everyone who has been thrilled by the recent discoveries of extrasolar planets and the indications of life on Mars and the Jovian moon Europa will be fascinated by *Rare Earth*, and its implications for those who look to the heavens for companionship. Essentials of Igneous and Metamorphic Petrology - B. Ronald Frost 2019-10-10

A concise introduction to the mineralogy and petrology of igneous and metamorphic rocks for all Earth Science students.

Earth Materials - Kevin Hefferan 2010-11-09

Minerals and rocks form the foundation of geologic studies. This new textbook has been written to address the needs of students at the increasing number of universities that have compressed separate mineralogy and petrology courses into a one- or two-semester Earth materials course. Key features of this book include: equal coverage of mineralogy, sedimentary petrology, igneous petrology and metamorphic petrology; copious field examples and regional relationships with graphics that illustrate the concepts discussed; numerous case studies to show the uses of earth materials as resources and their fundamental role in our lives and the global economy, and their relation to natural and human-induced hazards; the integration of earth materials into a cohesive process-based earth systems framework; two color throughout with 48 pages of four color. Readership: students taking an earth materials, or combined mineralogy and petrology course in an earth science degree program. It will also be useful for environmental scientists, engineering geologists, and physical geographers who need to learn about minerals, rocks, soil and water in a comprehensive framework. A companion website for this book is available at: www.wiley.com/go/hefferan/earthmaterials.

The Story of Evolution in 25 Discoveries - Donald R. Prothero 2020-12-22

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.

The Princeton Field Guide to Prehistoric Mammals - Donald R. Prothero 2016-11-15

The ultimate illustrated guide to the lost world of prehistoric mammals. After the mass extinction of the dinosaurs 65 million years ago, mammals became the dominant terrestrial life form on our planet. Roaming the earth were spectacular beasts such as saber-toothed cats, giant mastodons, immense ground sloths, and gigantic giraffe-like rhinoceroses. Here is the ultimate illustrated field guide to the lost world of these weird and wonderful prehistoric creatures. A woolly mammoth probably won't come thundering through your vegetable garden any time soon. But if one did, this would be the book to keep on your windowsill next to the binoculars. It covers all the main groups of fossil mammals, discussing taxonomy and evolutionary history, and providing concise accounts of the better-known genera and species as well as an up-to-date family tree for each group. No other book presents such a wealth of new information about these animals—what they looked like, how they behaved, and how they were interrelated. In addition, this unique guide is stunningly illustrated throughout with full-color reconstructions of these beasts—many never before depicted—along with photographs of amazing fossils from around the world. Provides an up-to-date guidebook to hundreds of extinct species, from saber-toothed cats to giant mammoths. Features a wealth of color illustrations, including new

reconstructions of many animals never before depicted Demonstrates evolution in action—such as how whales evolved from hoofed mammals and how giraffes evolved from creatures with short necks Explains how mass extinctions and climate change affected mammals, including why some mammals grew so huge

Evolution - Donald R. Prothero 2017-08-22

Donald R. Prothero's *Evolution* is an entertaining and rigorous history of the transitional forms and series found in the fossil record. Its engaging narrative of scientific discovery and well-grounded analysis has led to the book's widespread adoption in courses that teach the nature and value of fossil evidence for evolution. *Evolution* tackles systematics and cladistics, rock dating, neo-Darwinism, and macroevolution. It includes extensive coverage of the primordial soup, invertebrate transitions, the development of the backbone, the reign of the dinosaurs, and the transformation from early hominid to modern human. The book also details the many alleged "missing links" in the fossil record, including some of the most recent discoveries that flesh out the fossil timeline and the evolutionary process. In this second edition, Prothero describes new transitional fossils from various periods, vividly depicting such bizarre creatures as the *Odontochelys*, or the "turtle on the half shell"; fossil snakes with legs; and the "Frogamander," a new example of amphibian transition. Prothero's discussion of intelligent design arguments includes more historical examples and careful examination of the "experiments" and observations that are exploited by creationists seeking to undermine sound science education. With new perspectives, Prothero reframes creationism as a case study in denialism and pseudoscience rather than a field with its own intellectual dynamism. The first edition was hailed as an exemplary exploration of the fossil evidence for evolution, and this second edition will be welcome in the libraries of scholars, teachers, and general readers who stand up for sound science in this post-truth era.

Sedimentary Geology - Donald R. Prothero 2004

This is an accessible introductory text which encompasses both sedimentary rocks and stratigraphy. The book utilizes current research in tectonics and sedimentation and focuses on crucial geological principles. It covers a wide range of topics, including trace fossils, mudrocks and diagenetic structures.

Origin of Carbonate Sedimentary Rocks - Noel P. James 2015-08-17

This textbook provides an overview of the origin and preservation of carbonate sedimentary rocks. The focus is on limestones and dolostones and the sediments from which they are derived. The approach is general and universal and draws heavily on fundamental discoveries, arresting interpretations, and keystone syntheses that have been developed over the last five decades. The book is designed as a teaching tool for upper level undergraduate classes, a fundamental reference for graduate and research students, and a scholarly source of information for practicing professionals whose expertise lies outside this specialty. The approach is rigorous, with every chapter being designed as a separate lecture on a specific topic that is encased within a larger scheme. The text is profusely illustrated with all colour diagrams and images of rocks, subsurface cores, thin sections, modern sediments, and underwater seascapes. Additional resources for this book can be found at:

www.wiley.com/go/james/carbonaterocks

The Story of Life in 25 Fossils - Donald R. Prothero 2015-08-25

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.

Evolution of the Earth - Donald R. Prothero 2004

Evolution of the Earth reveals the logical framework of geology, shows relations of the science to the totality of human knowledge, and gives some idea of what it is to be a participant in the discipline. In keeping with the preference for a "How do we know?" rather than "What do we know?" approach, the authors stress what assumptions are made by earth historians, what kinds of evidence (and tools for gathering that evidence), and what processes of reasoning and limitations of hypotheses are involved in reconstructing and interpreting the past. Each chapter begins with a list of highlights entitled "Major Concepts". Many chapters have a summary timeline that puts the entire sequence of events into a quick visual reference frame. The use of dioramas and reconstructions of extinct animals and plants has been greatly expanded, so that students can get a more vivid concept of typical life in any part of the geologic past. In many places, the authors have supplied a full page of color photos of classic fossils from each period to improve the visual recognition of the organisms that give life its distinctive history. The areas of hottest controversy, such as mass extinctions, dinosaur endothermy, the origin of life, and controversies over late Proterozoic tectonics and glaciation, have been given separate sections so that students can appreciate the different sides of the debates. (Electronic images are available on CD-ROM through your local McGraw-Hill Sales Representative.)

When Humans Nearly Vanished - Donald R. Prothero 2018-10-16

The fascinating true story of the explosion of the Mount Toba supervolcano—the Earth's largest eruption in the past 28 million years—and its lasting impact on Earth and human evolution Some 73,000 years ago, the huge dome of Mount Toba, in today's Sumatra, Indonesia, began to rumble. A deep vibration shook the entire island. Jets of steam and ash emanated from the summit, followed by an explosion louder than any sound heard by *Homo sapiens* since our species evolved on Earth. The eruption of the Toba supervolcano released the energy of a million tons of explosives; seven hundred cubic miles of magma spewed outward in an explosion forty times larger than the largest hydrogen bomb and more than a thousand times as powerful as the Krakatau eruption in 1883. So much ash and debris was injected into the stratosphere that it partially blocked the sun's radiation and caused global temperatures to drop by five to nine degrees. It took a full decade for Earth to recover to its pre-eruption temperatures. *When Humans Nearly Vanished* presents the controversial argument that the Toba catastrophe nearly wiped out the human race, leaving only about a thousand to ten thousand breeding pairs of humans worldwide. Human genes today show evidence of a "genetic bottleneck," an effect seen when a population of organisms becomes so small that their genetic diversity is greatly reduced. This group of survivors could be the ancestors of all humans alive today. Donald R. Prothero explores the geological and biological evidence supporting the Toba bottleneck theory; reveals how the explosion itself was discovered; and offers insight into how the world changed afterward and what might happen if such an eruption occurred today. Prothero's riveting account of this calamitous supervolcanic explosion is not to be missed.

Evolution of the Earth - Robert H. Dott 1976

Rhinoceros Giants - Donald R. Prothero 2013

A book for everyone fascinated by the huge beasts that once roamed the earth, *Rhinoceros Giants: The Paleobiology of the Indricotheres*, introduces a prime candidate for the largest land mammal that ever lived - the giant hornless rhinoceros, *Indricotherium*. These massive animals lived in Asia and Eurasia for more than 14 million years, about 37 to 23 million years ago. They had skulls 2 metres long, stood over 7 meters at the shoulder, and were nearly twice as heavy as the largest elephant ever recorded, tipping the scales at 20,000 kg. Fortunately, the big brutes were vegetarians, although they must have made predators think twice before trying to bring them down. In this book for lovers of ancient creatures great and small, Donald R. Prothero tells their story, from their discovery by palaeontologists just a century ago to the latest research on how they lived and died, with some interesting side trips along the way. *Environmental and Low Temperature Geochemistry* - Peter Ryan 2014-04-21

Environmental and Low-Temperature Geochemistry presents conceptual and quantitative principles of geochemistry in order to foster understanding of natural processes at and near the earth's surface, as well as anthropogenic impacts on the natural environment. It provides

the reader with the essentials of concentration, speciation and reactivity of elements in soils, waters, sediments and air, drawing attention to both thermodynamic and kinetic controls. Specific features include: • An introductory chapter that reviews basic chemical principles applied to environmental and low-temperature geochemistry • Explanation and analysis of the importance of minerals in the environment • Principles of aqueous geochemistry • Organic compounds in the environment • The role of microbes in processes such as biomineralization, elemental speciation and reduction-oxidation reactions • Thorough coverage of the fundamentals of important geochemical cycles (C, N, P, S) • Atmospheric chemistry • Soil geochemistry • The roles of stable isotopes in environmental analysis • Radioactive and radiogenic isotopes as

environmental tracers and environmental contaminants • Principles and examples of instrumental analysis in environmental geochemistry The text concludes with a case study of surface water and groundwater contamination that includes interactions and reactions of naturally-derived inorganic substances and introduced organic compounds (fuels and solvents), and illustrates the importance of interdisciplinary analysis in environmental geochemistry. Readership: Advanced undergraduate and graduate students studying environmental/low T geochemistry as part of an earth science, environmental science or related program. Additional resources for this book can be found at: www.wiley.com/go/ryan/geochemistry.