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Three levels of abstraction in the study of the fossil record Aug 06 2021

Learning from the Fossil Record Sep 19 2022

Investigating heterochrony in the fossil record: a geochemical, morphometric, and phylogenetic study of Thecideida (Brachiopoda), Triassic-Recent Mar 01 2021

Paleobiology of the Polycystine Radiolaria Sep 26 2020 Polycystine radiolaria are exclusively marine protists and are found in all ocean waters, from polar regions to the tropics, and at all water depths. There are approximately 600 distinct described living species and several thousand fossil species of polycystines. Radiolarians in general, and polycystines in particular, have recently been shown to be a major component of the living plankton and important to the oceanic carbon cycle. As fossils radiolarians are also fairly common, and often occur in sediments where other types of fossils are absent. This has made them very valuable for certain types of geologic research, particularly estimating the geologic age of the sediments containing them, and as guides to past oceanic water conditions. As our current understanding of the biology, and even taxonomy of the living fauna is still very incomplete, evolutionary studies based on living polycystines are still rare. However, the common occurrence of numerous specimens for many species, and in a wide variety of oceanic environments, provides an excellent opportunity to study the processes of biologic evolution in the fossil record. Paleobiology of the Polycystine Radiolaria is the first major book on radiolarians to appear in the western literature since 2001. Focusing on living and fossil siliceous shelled radiolarians, it is notable for its emphasis not upon morphologic or taxonomic detail but on concepts and applications. The book attempts to provide a balanced, critical review of what is known of the biology, ecology, and fossil record of the group, as well as their use in evolutionary, biostratigraphic and paleoceanographic research. Full chapters on the history of study, and molecular biology, are the first ever in book form. Written for an audience of advanced undergraduate to doctoral students, as well as for a broad range of professionals in the biological and Earth sciences, Paleobiology of the Polycystine Radiolaria summarizes current understanding of the marine planktonic protist group polycystine radiolaria, both in living and fossil form.

The Fossil Evidence for Human Evolution Feb 18 2020

An Integrated Study of Echinoid Taphonomy Nov 28 2020

The Human Fossil Record, Craniodental Morphology of Genus Homo (Africa and Asia) May 03 2021 The Human Fossil Record series is the most authoritative and comprehensive documentation of the fossil evidence relevant to the study of our evolutionary past. This second volume covers the craniodental remains from Africa and Asia attributed to the genus Homo. In this monumental and groundbreaking new series, the authors use clearly defined terminology and descriptive protocols that are applied uniformly throughout. Organized alphabetically by site name with detailed morphological descriptions and original, expertly taken photographs, each entry features: Location information History of discovery Previous systematic assessments of the fossils Geological, archaeological, and faunal contexts Dating References to the primary literature

Introduction to Paleobiology and the Fossil Record Jun 04 2021 This book presents a comprehensive overview of the science of the history of life. Paleobiologists bring many analytical tools to bear in interpreting the fossil record and the book introduces the latest techniques, from multivariate investigations of biogeography and biostratigraphy to engineering analysis of dinosaur skulls, and from homeobox genes to cladistics. All the well-known fossil groups are included, including microfossils and invertebrates, but an important feature is the thorough coverage of plants, vertebrates and trace fossils together with discussion of the origins of both life and the metazoans. All key related subjects are introduced, such as systematics, ecology, evolution and development, stratigraphy and their roles in understanding where life came from and how it evolved and diversified. Unique features of the book are the numerous case studies from current research that lead students to the primary literature, analytical and mathematical explanations and tools, together with associated problem sets and practical schedules for instructors and students. "...any serious student of geology who does not pick this book off the shelf will be putting themselves at a huge disadvantage. The material may be complex, but the text is extremely accessible and well organized, and the book ought to be essential reading for palaeontologists at undergraduate, postgraduate and more advanced levels both in Britain as well as in North America." Falcon-Lang, H., Proc. Geol. Assoc. 2010 "...this is an excellent introduction to palaeontology in general. It is well structured, accessibly written and pleasantly informative ....I would recommend this as a standard reference text to all my students without hesitation." David Norman Geol Mag 2010 Companion website This book includes a companion website at: [www.blackwellpublishing.com/paleobiology](http://www.blackwellpublishing.com/paleobiology) The website includes: · An ongoing database of additional Practical's prepared by the authors · Figures from the text for downloading · Useful links for each chapter · Updates from the authors

Sedimentation and the Fossil Record Dec 22 2022

Old Stellar Populations Apr 14 2022 The book discusses the theoretical path to decoding the information gathered from observations of old stellar systems. It focuses on old stellar systems because these are the fossil record of galaxy formation and provide invaluable information on the evolution of cosmic structures and the universe as a whole. The aim is to present results obtained in the past few years for theoretical developments in low mass star research and in advances in our knowledge of the evolution of old stellar systems. A particularly representative case is the recent discovery of multiple stellar populations in galactic globular clusters that represents one of the hottest topics in stellar and galactic astrophysics and is discussed in detail. Santi Cassisi has authored about 270 scientific papers, 150 of them in peer-reviewed journals, and the title Evolution of Stars and Stellar Populations.

The Human Fossil Record: Craniodental morphology of genus Homo (Africa and Asia) Jun 23 2020 The Human Fossil Record Volume one Terminology and Craniodental Morphology of Genus Homo (Europe) Jeffrey H. Schwartz Ian Tattersall The Human Fossil Record series is the most authoritative and comprehensive documentation of the fossil evidence relevant to the study of our evolutionary past. This first volume covers the craniodental remains from Europe that have been attributed to the genus Homo. Here the authors also clearly define the terminology and descriptive protocol that is applied uniformly throughout the series. Organized alphabetically by site name, each entry includes clear descriptions and original, expertly taken photographs, as well as: Morphology Location information History of discovery Previous systematic assessments of the fossils Geological, archaeological, and faunal contexts Dating References to the primary literature The Human Fossil Record series is truly a must-have reference for anyone seriously interested in the study of human evolution.

Bringing Fossils To Life: An Introduction To Paleobiology Dec 18 2019 This is the first text to combine both

paleontology and paleobiology. Traditional textbooks treat these separately, despite the recent trend to combine them in teaching. It bridges the gap between purely theoretical paleobiology and purely descriptive invertebrate paleontology books. The text is targeted at undergraduate geology and biology majors, with the emphasis on organisms, rather than dead objects to be described and catalogued. Current ideas from modern biology, ecology, population genetics, and many other concepts will be applied to the study of the fossil record.

**Paleontologists** Nov 09 2021 The Earth buries its past. Living things that die and then slowly become part of the Earth are called fossils. This is where the skills of a paleontologist come into play. Their job is to find fossils and study them in order to make sense of what was going on here on Earth for billions of years before there were ever human beings. Learn all about the fossil record, the amazing discoveries and where they were found, and what it takes to become one of these amazing scientists. Put on your gloves and get ready to dig into the world of paleontology! This title will allow students to identify evidence from patterns in rock formations and fossils in rock layers to identify past life of animals or human existence. □ Text based questions □ Content sidebars □ Diagrams □ Bold keywords with phonetic glossary

**Mammalian Paleoecology** Jan 19 2020 What can the interactions of ancient mammals and their environments tell us about the present—and the future? Classic paleontology has focused on the study of fossils and the reconstruction of lineages of extinct species. But as diverse fossils of animals and plants were unearthed and catalogued, it became possible to reconstruct more elaborate ecosystems, tying together plants, animals, and geology. By the second half of the twentieth century, this effort gave birth to the field of paleoecology: the study of the interactions between organisms and their environments across geologic timescales. In *Mammalian Paleoecology*, Felisa Smith broadly considers extinct mammals in an ecological context. Arguing that the past has much to teach us and that mammals, which display an impressive array of diverse life history and ecological characteristics, are the ideal organism through which to view the fossil record, Smith □ reviews the history, major fossil-hunting figures, and fundamental principles of paleoecology, including stratigraphy, dating, and taphonomy □ discusses the importance of mammal body size, how to estimate size, and what size and shape reveal about long-dead organisms □ explains the structure, function, and utility of different types of mammal teeth □ highlights other important methods and proxies used in modern paleoecology, including stable isotopes, ancient DNA, and paleomidden analyses □ assesses nontraditional fossils □ presents readers with several case studies that describe how the fossil record can help inform the scientific discussion on anthropogenic climate change *Mammalian Paleoecology* is an approachable overview of how we obtain information from fossils and what this information can tell us about the environments of the distant past. It will profoundly affect the way paleontologists and climatologists view the lives of ancient mammals.

**Paleontological Collections of Germany, Austria and Switzerland** Nov 16 2019 This book is devoted to 250 years of collecting, organizing and preserving paleontological specimens by generations of scientists. Paleontological collections are a huge resource for modern research and should be available for national and international scientists and institutions, as well as prospective public and private customers. These collections are an important part of the scientific enterprise, supporting research, public education, and the documentation of past biodiversity. Much of what we are beginning to understand about our world, we owe to the collection, preservation, and ongoing study of natural specimens. Properly preserved collections of fossil marine or terrestrial plants and animals are archives of Earth's history and vital to our ability to learn about our place in its future. The approach employed by the editors involves not only an introduction to the paleontological collections in general, but also information on the international and national collection networks. Particular attention is given to new exhibition concepts and approaches of sorting, preserving and researching in paleontological collections and also their neglect and/or threat. In addition, the book provides information on all big public museums, on important state museums and regional Museums, and also on university collections. This is a highly informative and carefully presented book, providing scientific insight for readers with an interest in fossil record, biodiversity, taxonomy, or evolution, as well as natural history collections at large.

**Fossils at a Glance** Oct 28 2020 Fossils provide a powerful tool for the study of the nearly 4-billion-year history of life, and its role in the evolution of Earth systems. They also provide important data for evolutionary studies, and contribute to our understanding of the extinction of organisms and the origins of modern biodiversity. *Fossils At A Glance* is written for students taking an introductory level course in paleontology. Short chapters introduce

the main topics in the modern study of fossils. The most important fossil groups are discussed, from microfossils through invertebrates to vertebrates and plants, followed by a brief narrative of life on Earth. Diagrams are central to the book and allow the reader to see most of the important data [at a glance]. Each topic covers two pages and provides a self-contained suite of information or a starting point for future study. This second edition has been thoroughly revised and brought up to date. It includes new line diagrams as well as photographs of selected fossils

The Fossil Record Aug 18 2022 Evolutionists rely on the fossil record for support of their theory, but what does that record really reveal? ICR geologist Dr. John Morris and zoologist Frank Sherwin unearth the evidence of earth's history and conclude that the fossil record is incompatible with evolution, but remarkably consistent with the biblical account of creation and the great Flood of Noah's day.

Fossil Vertebrates of Greece Vol. 2 Oct 20 2022 This 2-volume set provides a state-of-the-art study of the fossil record and taxonomy of the main vertebrate groups from Greece. Greece stands between 3 continents and its vertebrate fossil record is of great importance for paleontological and evolutionary studies in Europe, Asia and Africa. Fossils from classic, world-famous localities (e.g., Pikermi, Samos) form an essential part of the collections of the most important museums in the world and have been studied by numerous scientists. Recent paleontological research led to the discovery and study of numerous new sites. The volumes contain a taxonomic review of all named and identified taxa, their taxonomic history and current status, as well as historical, phylogenetic and biogeographic information. Volume 2 contains a synopsis of the fossil record and taxonomy of important groups of mammals represented in the fossil record of Greece. The volume starts with specific chapters on laurasiatherians like insectivores and bats, moving on to the main part of the book that deals with three of the most important fossil groups in the country. The fossil record of even-toed animals is summarized with chapters on bovids, cervids, suoids, anthracotheres, hippos, giraffes, and tragulids. The fossil record of odd-toed animals is presented with special chapters on horses, tapirs, rhinos, and chalicotheres. The last part of this volume deals with meat-eating, carnivoran groups, like felids, viverrids, hyaenas, canids, bears, ailurids, mephitids and mustelids. The volume ends with a special chapter on insular endemic mammals from the various islands of Greece.

Classification & Adaptation: Evolution and the Fossil Record Gr. 5-8 Mar 13 2022 \*\*This is the chapter slice "Evolution and the Fossil Record" from the full lesson plan "Classification & Adaptation"\*\*. What Do We Classify? What is the difference between warm-blooded and cold-blooded animals? Students will also learn to distinguish between vertebrates and invertebrates, understand animal adaptation through a case study: The Koala and Its Adaptations. Even evolution and the fossil record making with hands-on activities including: How Important Are Thumbs? The Lake Habitat Thermometer and A Day in the Life of a Paleontologist! Our resource provides ready-to-use information and activities for remedial students using simplified language and vocabulary. Science concepts are presented in a way that makes them more accessible to students and easier to understand. Comprised of reading passages, student activities, test prep, and color mini posters, our resource can be used effectively for test prep, whole-class, small group and independent work. All of our content is aligned to your State Standards and are written to Bloom's Taxonomy and STEM initiatives.

Dogs Aug 26 2020 Two noted paleontologists present a detailed portrait of the family Canidae across 40 million years of evolution in this illustrated volume. After decades of research and analysis, paleontologists Xiaoming Wang and Richard H. Tedford established the modern framework for understanding the evolutionary relationship of canids. Combining their work with Mauricio Antón's reconstructions of both extinct and extant species, Wang and Tedford now present a nuanced and visually stunning portrait of the origin and evolution of canids. The fossil record of the Canidae, particularly those from their birthplace in North America, are the strongest of their kind among known groups of carnivorans. Such a wonderfully detailed evolutionary history makes the canid an ideal model organism for the mapping of predator behavior and morphological specializations. With its innovative illustrated approach to this important branch of animal and fossil study, Dogs provides an unprecedented reference for anyone interested in the evolution of these fascinating animals.

Fossil Vertebrates of Greece Vol. 1 May 15 2022 This 2-volume set provides a state-of-the-art study of the fossil record and taxonomy of the main vertebrate groups from Greece. Greece stands between 3 continents and its vertebrate fossil record is of great importance for paleontological and evolutionary studies in Europe, Asia and Africa. Fossils from classic, world-famous localities (e.g., Pikermi, Samos) form an essential part of the collections of the most important museums in the world and have been studied by numerous scientists. Recent

paleontological research led to the discovery and study of numerous new sites. The volumes contain a taxonomic review of all named and identified taxa, their taxonomic history and current status, as well as historical, phylogenetic and biogeographic information. Volume 1 contains a synopsis of the fossil record and taxonomy of important groups of vertebrates represented in the fossil record of Greece. The volume deals with some of the early splitting clades, including the basal and enigmatic conodonts and basal tetrapods like fishes, amphibians, and reptiles like lizards, snakes, crocodiles, turtles and tortoises. The second part of the volume deals with basal mammalian clades, some of which are quite characteristic for the fossil record of the country: aardwarks, hyraxes, proboscideans, elephants and mammoths, sea cows, rodents, and lagomorphs. The volume ends with special chapters on the primate fossil record of the country, including some of our most recent and distant relatives.

The Primate Fossil Record Jan 23 2023 A comprehensive treatment of primate paleontology. Profusely illustrated and up to date, it captures the complete history of the discovery and interpretation of primate fossils. The chapters range from primate origins to the advent of anatomically modern humans. Each emphasizes three key components of the record of primate evolution: history of discovery, taxonomy of the fossils, and evolution of the adaptive radiations they represent. The Primate Fossil Record summarizes objectively the many intellectual debates surrounding the fossil record and provides a foundation of reference information on the last two decades of astounding discoveries and worldwide field research for physical anthropologists, paleontologists and evolutionary biologists.

The Human Fossil Record: Brain endocasts : the paleoneurological evidence Jan 11 2022 The Human Fossil Record Volume one Terminology and Craniodental Morphology of Genus Homo (Europe) Jeffrey H. Schwartz Ian Tattersall The Human Fossil Record series is the most authoritative and comprehensive documentation of the fossil evidence relevant to the study of our evolutionary past. This first volume covers the craniodental remains from Europe that have been attributed to the genus Homo. Here the authors also clearly define the terminology and descriptive protocol that is applied uniformly throughout the series. Organized alphabetically by site name, each entry includes clear descriptions and original, expertly taken photographs, as well as: Morphology Location information History of discovery Previous systematic assessments of the fossils Geological, archaeological, and faunal contexts Dating References to the primary literature The Human Fossil Record series is truly a must-have reference for anyone seriously interested in the study of human evolution.

Life in Deep Time Oct 08 2021 When Darwin wrote his Origin of Species, one of his main concerns was with the perceived shortness of the fossil record of life. Until the work of J. William Schopf and his colleagues, much of this history was thought to be unknowable. This book, through a memoir of Schopf's personal recollections, documents astonishing discoveries revealing the first 85% of the history of life. These earliest periods of life on Earth emerge as a tale of individual and internationally collaborative exploration told by a scholar whose 60 years of research contributed to the recognition of the richness and diversity which forms the foundation of today's biodiversity. Key Features Documents, through personal narrative, a paradigm shift is the study of the earliest life Summarizes a fossil record largely unknown until relatively recently Addresses one of Darwin's most troubling concerns about his theory of natural selection Predicts future developments in the study of first life

Comparing the Geological and Fossil Records Nov 21 2022 The past decade has witnessed a major revival in attempts to separate biodiversity signals from biases imposed by sampling and the architecture of the rock record. How large a problem this poses to our understanding of biodiversity patterns remains debatable, and new approaches are being developed to investigate this question. Here palaeobiologists with widely differing approaches and interests explore the problems of extracting reliable information on biodiversity change from an imperfect geological record. Topics covered range from the application of information-theoretic approaches that identify directional causal relationships to an in-depth study of how geological biases could influence our understanding of dinosaur evolution.

Fossils, Rocks, and Time Feb 12 2022

Predator-Prey Interactions in the Fossil Record May 23 2020 From the Foreword: "Predator-prey interactions are among the most significant of all organism-organism interactions....It will only be by compiling and evaluating data on predator-prey relations as they are recorded in the fossil record that we can hope to tease apart their role in the tangled web of evolutionary interaction over time. This volume, compiled by a group of expert specialists on the evidence of predator-prey interactions in the fossil record, is a pioneering effort to collate the information now

accumulating in this important field. It will be a standard reference on which future study of one of the central dynamics of ecology as seen in the fossil record will be built." (Richard K. Bambach, Professor Emeritus, Virginia Tech, Associate of the Botanical Museum, Harvard University)

Investigating Heterochrony in the Fossil Record Jan 31 2021

Estimating Minimum Global Species Diversity for Groups with a Poor Fossil Record: a Case Study of Late Jurassic- Ocene Lissamphibians Mar 21 2020

The Human Fossil Record, Brain Endocasts--The Paleoneurological Evidence Feb 24 2023 The Human Fossil Record Volume one Terminology and Craniodental Morphology of Genus Homo (Europe) Jeffrey H. Schwartz Ian Tattersall The Human Fossil Record series is the most authoritative and comprehensive documentation of the fossil evidence relevant to the study of our evolutionary past. This first volume covers the craniodental remains from Europe that have been attributed to the genus Homo. Here the authors also clearly define the terminology and descriptive protocol that is applied uniformly throughout the series. Organized alphabetically by site name, each entry includes clear descriptions and original, expertly taken photographs, as well as: Morphology Location information History of discovery Previous systematic assessments of the fossils Geological, archaeological, and faunal contexts Dating References to the primary literature The Human Fossil Record series is truly a must-have reference for anyone seriously interested in the study of human evolution.

Evolution and the Origin of Species Jul 25 2020

The Human Fossil Record, Craniodental Morphology of Early Hominids (Genera Australopithecus, Paranthropus, Orrorin), and Overview Dec 30 2020 The Human Fossil Record Volume one Terminology and Craniodental Morphology of Genus Homo (Europe) Jeffrey H. Schwartz Ian Tattersall The Human Fossil Record series is the most authoritative and comprehensive documentation of the fossil evidence relevant to the study of our evolutionary past. This first volume covers the craniodental remains from Europe that have been attributed to the genus Homo. Here the authors also clearly define the terminology and descriptive protocol that is applied uniformly throughout the series. Organized alphabetically by site name, each entry includes clear descriptions and original, expertly taken photographs, as well as: Morphology Location information History of discovery Previous systematic assessments of the fossils Geological, archaeological, and faunal contexts Dating References to the primary literature The Human Fossil Record series is truly a must-have reference for anyone seriously interested in the study of human evolution.

The Human Fossil Record, Craniodental Morphology of Genus Homo (Africa and Asia) Sep 07 2021 The Human Fossil Record Volume one Terminology and Craniodental Morphology of Genus Homo (Europe) Jeffrey H. Schwartz Ian Tattersall The Human Fossil Record series is the most authoritative and comprehensive documentation of the fossil evidence relevant to the study of our evolutionary past. This first volume covers the craniodental remains from Europe that have been attributed to the genus Homo. Here the authors also clearly define the terminology and descriptive protocol that is applied uniformly throughout the series. Organized alphabetically by site name, each entry includes clear descriptions and original, expertly taken photographs, as well as: Morphology Location information History of discovery Previous systematic assessments of the fossils Geological, archaeological, and faunal contexts Dating References to the primary literature The Human Fossil Record series is truly a must-have reference for anyone seriously interested in the study of human evolution.

The Human Fossil Record: Brain endocasts : the paleoneurological evidence Jul 05 2021

Events of Increased Biodiversity Dec 10 2021 The fossil record offers a surprising image: that of evolutionary radiations characterized by intense increases in cash or by the sudden diversification of a single species group, while others stagnate or die out. In a modern world, science carries an often pessimistic message, surrounded by studies of global warming and its effects, extinction crisis, emerging diseases and invasive species. This book fuels frequent "optimism" of the sudden increase in biodiversity by exploring this natural phenomenon. Events of Increased Biodiversity: Evolutionary Radiations in the Fossil Record explores this natural phenomenon of adaptive radiation including its effect on the increase in biodiversity events, their contribution to the changes and limitations in the fossil record, and examines the links between ecology and paleontology's study of radiation. Details examples of evolutionary radiations Explicitly addresses the effect of adaptation driven by ecological opportunity Examines the link between ecology and paleontology's study of adaptive radiation

Prehistoric Life Apr 21 2020 Prehistoric life is the archive of evolution preserved in the fossil record. This book

focuses on the meaning and significance of that archive and is designed for introductory college science students, including non-science majors, enrolled in survey courses emphasizing paleontology, geology and biology. From the origins of animals to the evolution of rap music, from ancient mass extinctions to the current biodiversity crisis, and from the Snowball Earth to present day climate change this book covers it, with an eye towards showing how past life on Earth puts the modern world into its proper context. The history of life and the patterns and processes of evolution are especially emphasized, as are the interconnections between our planet, its climate system, and its varied life forms. The book does not just describe the history of life, but uses actual examples from life's history to illustrate important concepts and theories.

[The Meaning of Fossils](#) Oct 16 2019 Examines the way in which the study of fossils in five historical periods since the Renaissance reflects man's changing view of nature

[Species and Speciation in the Fossil Record](#) Apr 02 2021 The literature of paleobiology is brimming with qualifiers and cautions about using species in the fossil record, or equating such species with those recognized among living organisms. *Species and Speciation in the Fossil Record* digs through this literature and surveys the recent research on species in paleobiology. In these pages, experts in the field examine what they think species are - in their particular taxon of specialty or more generally in the fossil record. They also reflect on what the answers mean for thinking about species in macroevolution. The first step in this approach is an overview of the Modern Synthesis, and paleobiology's development of quantitative ways of documenting and analyzing variation with fossil assemblages. Following that, this volume's central chapters explore the challenges of recognizing and defining species from fossil specimens, and show how with careful interpretation and a clear species concept, fossil species may be sufficiently robust for meaningful paleobiological analyses. Tempo and mode of speciation over time are also explored, exhibiting how the concept of species, if more refined, can reveal enormous amounts about the interplay between species origins and extinction and local and global climate change.

[The Human Fossil Record: Brain endocasts : the paleoneurological evidence](#) Jun 16 2022 The Human Fossil Record Volume one Terminology and Craniodental Morphology of Genus Homo (Europe) Jeffrey H. Schwartz Ian Tattersall The Human Fossil Record series is the most authoritative and comprehensive documentation of the fossil evidence relevant to the study of our evolutionary past. This first volume covers the craniodental remains from Europe that have been attributed to the genus Homo. Here the authors also clearly define the terminology and descriptive protocol that is applied uniformly throughout the series. Organized alphabetically by site name, each entry includes clear descriptions and original, expertly taken photographs, as well as: Morphology Location information History of discovery Previous systematic assessments of the fossils Geological, archaeological, and faunal contexts Dating References to the primary literature The Human Fossil Record series is truly a must-have reference for anyone seriously interested in the study of human evolution.

[Systematics and the Fossil Record](#) Jul 17 2022 This new text sets out to establish the key role played by systematics in deciphering patterns of evolution from the fossil record. It begins by considering the nature of the species in the fossil record and then outlines recent advances in the methodology used to establish phylogenetic relationships, stressing why fossil evidence can be crucial. The way species are grouped into higher taxa, and how this affects their utility in evolutionary studies is also discussed. Because the fossil record abounds with sampling and preservational biases, the book emphasizes that observed patterns can rarely be taken at face value. It is argued that evolutionary trees, constructed from combining phylogenetic and biostratigraphic data, provide the best approach for investigating patterns of evolution through geologic time. The only integrated text covering the study of evolutionary patterns from a phylogenetic stance.