

Protist Classification Saga Continues Answers

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Eight Little Piggies: Reflections in Natural History Stephen Jay Gould 2010-11-29 "There is no scientist today whose books I look forward to reading with greater anticipation of enjoyment and enlightenment than Stephen Jay Gould."—Martin Gardner Among scientists who write, no one illuminates as well as Stephen Jay Gould doesthe wonderful workings of the natural world. Now in a new volume of collected essays—his sixth since Ever Since Darwin—Gould speaks of the importance of unbroken connections within our own lives and to our ancestralgenerations. Along with way, he opens to us the mysteries of fish tails, frog calls, and other matters, and shows once and for all why we must take notice when a seemingly insignificant creature is threatened, like the land snail Partula from Moorea, whose extinction he movingly relates.

The Origin of Life Aleksandr Ivanovich Oparin 2003 This classic of biochemistry offered the first detailed exposition of the theory that living tissue was preceded upon Earth by a long and gradual evolution of nitrogen and carbon compounds. "Easily the most scholarly authority on the question...it will be a landmark for discussion for a long time to come." – New York Times.

Algae Based Polymers, Blends, and Composites Khalid Mahmood Zia 2017-06-19 Algae Based Polymers, Blends, and Composites: Chemistry, Biotechnology and Material Sciences offers considerable detail on the origin of algae, extraction of useful metabolites and major compounds from algal bio-mass, and the production and future prospects of sustainable polymers derived from algae, blends of algae, and algae based composites. Characterization methods and processing techniques for algae-based polymers and composites are discussed in detail, enabling researchers to apply the latest techniques to their own work. The conversion of bio-mass into high value chemicals, energy, and materials has ample financial and ecological importance, particularly in the era of declining petroleum reserves and global warming. Algae are an important source of biomass since they flourish rapidly and can be cultivated almost everywhere. At present the majority of naturally produced algal biomass is an unused resource and normally is left to decompose. Similarly, the use of this enormous underexploited biomass is mainly limited to food consumption and as bio-fertilizer. However, there is an opportunity here for materials scientists to explore its potential as a feedstock for the production of sustainable materials. Provides detailed information on the extraction of useful compounds from algal biomass Highlights the development of a range of polymers, blends, and composites Includes coverage of characterization and processing techniques, enabling research scientists and engineers to apply the information to their own research and development Discusses potential applications and future prospects of algae-based biopolymers, giving the latest insight into the future of these sustainable materials

50 Years of Ocean Discovery National Research Council 2000-01-03 This book describes the development of ocean sciences over the past 50 years, highlighting the contributions of the National Science Foundation (NSF) to the field's progress. Many of the individuals who participated in the exciting discoveries in biological oceanography, chemical oceanography, physical oceanography, and marine geology and geophysics describe in the book how the discoveries were made possible by combinations of insightful individuals, new technology, and in some cases, serendipity. In addition to describing the advance of ocean science, the book examines the institutional structures and technology that made the advances possible and presents visions of the field's future. This book is the first-ever documentation of the history of NSF's Division of Ocean Sciences, how the structure of the division evolved to its present form, and the individuals who have been responsible for ocean sciences at NSF as "rotators" and career staff over the past 50 years.

Assessing the Biological Weapons and Bioterrorism Threat Milton Leitenberg 2014-06-30 It is nearly 15 years since biological weapons (BW) have become a significant national security preoccupation. This occurred primarily due to four circumstances, all of which occurred within a short span of years. The first, beginning around 1990 and repeated many times in the years that followed, was the official U.S. Government suggestion that proliferation of offensive BW programs among states and even "nonstate actors"-terrorist groups-was an increasing trend. The second was the discovery, between 1989 and 1992, that the Union of Soviet Socialist Republics (USSR) had violated the Biological Weapons Convention (BWC) since its ratification in 1975 and had built a massive covert biological weapons program, the largest the world had ever seen. The third was the corroboration by the United Nations Special Commission (UNSCOM) in 1995 that Iraq had maintained a covert biological weapons program since 1974, and had produced and stockpiled large quantities of agents and delivery systems between 1988 and 1991.

Child of the World Susan Mayclin Stephenson 2013-02 Stephenson's volume is a wonderful resource for parents seeking thoughtful, sound advice on raising well-grounded children in a chaotic world. Presenting Montessori principles in clear and eloquent prose, Stephenson's legacy will be a tremendous service to generations of parents to come. -Angeline Lillard, PhD, Professor of Psychology, U. of Virginia, author of Montessori, The Science behind the Genius *Systematics of the Green Algae* Systematics Association 1984 The systematics of the Chlorophyta: an historical review leading to some modern concepts - taxonomy of the Chlorophyta III; Cytosystematics of the green algae; Reviews of the systematics of selected higher groupings; Systematics and cytology of selected genera; Chemotaxonomy of the green algae; Extrinsic factors and green algal systematics.

Fossil Behavior Compendium Arthur J. Boucot 2010-04-12 In this complete and thorough update of Arthur Boucot's seminal work, *Evolutionary Paleobiology of Behavior and Coevolution*, Boucot is joined by George Poinar, who provides additional expertise and knowledge on protozoans and bacteria as applied to disease. Together, they make the *Fossil Behavior Compendium* wider in scope, covering all relevant animal and plant groups and all epochs, and providing a detailed review of animal and plant fossil behavior in terrestrial and aquatic environments. Fossil behavior encompasses not only past evidence of the life history of an organism but also behavioral, predation, and symbiotic interactions, including parasitism. This book compares patterns of behavior and coevolution in the past with those of the present-day

descendants. It also discusses how to evaluate the rates of evolution of behavior and coevolution at various taxonomic levels. The compendium emphasizes the interactions between fossils and compares these interactions with present-day counterparts. It also provides new discussions on topics related to fossils in amber. Keeping Boucot's trademark, easy-to-read style, the book includes new findings never published previously, reports not easily accessed, numerous examples, 40 tables, 285 illustrations—some published here for the first time—and a four-page color insert. The book provides a concise account of the evidence for varied disease types recognized to date in the fossil record.

Animal Eyes Michael F. Land 2012-03-01 *Animal Eyes* provides a comparative account of all known types of eye in the animal kingdom, outlining their structure and function with an emphasis on the nature of the optical systems and the physical principles involved in image formation. A universal theme throughout the book is the evolution and taxonomic distribution of each type of eye, and the roles of different eye types in the behaviour and ecology of the animals that possess them. In comparing the specific capabilities of eyes, it considers the factors that lead to good resolution of detail and the ability to function under a wide range of light conditions. This new edition is fully updated throughout, incorporating more than a decade of new discoveries and research.

Spatial Complexity, Informatics, and Wildlife Conservation Samuel A. Cushman 2009-12-21 As Earth faces the greatest mass extinction in 65 million years, the present is a moment of tremendous foment and emergence in ecological science. With leaps in advances in ecological research and the technical tools available, scientists face the critical task of challenging policymakers and the public to recognize the urgency of our global crisis. This book focuses directly on the interplay between theory, data, and analytical methodology in the rapidly evolving fields of animal ecology, conservation, and management. The mixture of topics of particular current relevance includes landscape ecology, remote sensing, spatial modeling, geostatistics, genomics, and ecological informatics. The greatest interest to the practicing scientist and graduate student will be the synthesis and integration of these topics to provide a composite view of the emerging field of spatial ecological informatics and its applications in research and management.

Fundamental Neuroscience Larry Squire 2008-04-02 *Fundamental Neuroscience*, 3rd Edition introduces graduate and upper-level undergraduate students to the full range of contemporary neuroscience. Addressing instructor and student feedback on the previous edition, all of the chapters are rewritten to make this book more concise and student-friendly than ever before. Each chapter is once again heavily illustrated and provides clinical boxes describing experiments, disorders, and methodological approaches and concepts. Capturing the promise and excitement of this fast-moving field, *Fundamental Neuroscience*, 3rd Edition is the text that students will be able to reference throughout their neuroscience careers! New to this edition: 30% new material including new chapters on Dendritic Development and Spine Morphogenesis, Chemical Senses, Cerebellum, Eye Movements, Circadian Timing, Sleep and Dreaming, and Consciousness Additional text boxes describing key experiments, disorders, methods, and concepts Multiple model system coverage beyond rats, mice, and monkeys Extensively expanded index for easier referencing

Foundations of Paleoparasitology Adauto Araújo 2014-01-01 Unprecedented initiative in the world, the book compiles the available knowledge on the subject and presents the state-of-the-art in paleoparasitology – term coined about 30 years ago by Brazilian Fiocruz researcher Luiz Fernando Ferreira, pioneer in this science which is concerned with the study of parasites in the past. Multidisciplinary by essence, paleoparasitology gathers contributions from social scientists, biologists, historians, archaeologists, pharmacists, doctors and many other professionals, either in biomedical or humanities fields. With varied applications such as in evolutionary or migration studies, their results often depend on the association between laboratory findings and cultural remains. The book is divided into four parts - Parasites, Hosts, and Human Environment; Parasites Remains Preserved in Various Materials and Techniques in Microscopy and Molecular Diagnostics; Parasite Findings in Archeological Remains: a paleographic view; and Special Studies and Perspectives. Signed by authors from various countries such as Argentina, USA, Germany and France, the book has chapters devoted to the discoveries of paleoparasitology on all continents.

Lost Sex Isa Schön 2009-09-22 Sex is the queen of problems in evolutionary biology. Generations of researchers have investigated one of the last remaining evolutionary paradoxes: why sex exists at all. Given that sexual reproduction is costly from an evolutionary point of view, one could wonder why not all animals and plants reproduce asexually. Dozens of contemporary hypotheses attempt to explain the prevalence of sex and its advantages and predict the early extinction of fully asexual lineages. The major theme of this book is: what is the fate of animal and plant groups in which sex is lost? Initial chapters discuss theory behind asexual life: what major disadvantages do asexual groups have to face, what are the genetic and ecological consequences and what does this theory predict for more applied aspects of asexual life, for example in agricultural pests, diseases as well as in cultural crops such as grapes. Cases studies in many animals (focusing on both invertebrates and vertebrates) and plants reveal parallel, but also singularly novel adaptations to the absence of meiosis and syngamy. And last but not least, are asexuals really doomed to early extinction or do genuine ancient asexuals exist? This book assembles contributions from the most important research groups dealing with asexual evolution in eukaryotes. It is a milestone in research on parthenogenesis and will be useful to undergraduate as well as graduate students and to senior researchers in all fields of evolutionary biology, as the paradox of sex remains its queen of problems.

Generation and Applications of Extra-Terrestrial Environments on Earth Daniel A. Beysens 2015-05-31 This book has been prepared under the auspice of the European Low Gravity Research Association (ELGRA). The main task of ELGRA is to foster the scientific community in Europe and beyond in conducting gravity and space-related research. This publication is dedicated to the science community, and especially to the next generation of scientists and engineers interested in space research and in the means to use Earth to reproduce the space environment. ELGRA provides a comprehensive description of space conditions and the means that have been developed on Earth to perform space environmental and (micro-) gravity related research. . The book covers ground-based research instruments and environments for both life

and physical sciences research. It discusses the opportunities and limitations of protocols and instruments to compensate gravity or simulate microgravity, such as clinostats, random positioning machines, levitating magnets, electric fields, vibrations, tail suspension or head down tilt, as well as centrifuges for hyper-g studies. Other space environmental conditions are addressed too, like cosmic radiation or Mars atmospheric and soil properties to be replicated and simulated on Earth. Future long duration of manned missions, personal well-being and crew interaction are major issues dealt with.

The Reception of Darwinism in the Iberian World T.F. Glick 2012-12-06 I Twenty-five years ago, at the Conference on the Comparative Reception of Darwinism held at the University of Texas in 1972, only two countries of the Iberian world—Spain and Mexico—were represented.' At the time, it was apparent that the topic had attracted interest only as regarded the "mainstream" science countries of Western Europe, plus the United States. The Eurocentric bias of professional history of science was a fact. The sea change that subsequently occurred in the historiography of science makes 1972 appear something like the antediluvian era. Still, we would like to think that that meeting was prescient in looking beyond the mainstream science countries—as then perceived—in order to test the variation that ideas undergo as they pass from center to periphery. One thing that the comparative study of the reception of ideas makes abundantly clear, however, is the weakness of the center/periphery dichotomy from the perspective of the diffusion of scientific ideas. Catholics in mainstream countries, for example, did not handle evolution much better than did their correligionaries on the fringes. Conversely, Darwinians in Latin America were frequently better placed to advance Darwin's ideas in a social and political sense than were their fellow evolutionists on the Continent. The Texas meeting was also a marker in the comparative reception of scientific ideas, Darwinism aside. Although, by 1972, scientific institutions had been studied comparatively, there was no antecedent for the comparative history of scientific ideas.

Rotting Strawberries

Genomics of Chloroplasts and Mitochondria Ralph Bock 2012-06-05 The past decade has witnessed an explosion of our knowledge on the structure, coding capacity and evolution of the genomes of the two DNA-containing cell organelles in plants: chloroplasts (plastids) and mitochondria. Comparative genomics analyses have provided new insights into the origin of organelles by endosymbioses and uncovered an enormous evolutionary dynamics of organellar genomes. In addition, they have greatly helped to clarify phylogenetic relationships, especially in algae and early land plants with limited morphological and anatomical diversity. This book, written by leading experts, summarizes our current knowledge about plastid and mitochondrial genomes in all major groups of algae and land plants. It also includes chapters on endosymbioses, plastid and mitochondrial mutants, gene expression profiling and methods for organelle transformation. The book is designed for students and researchers in plant molecular biology, taxonomy, biotechnology and evolutionary biology.

The Biology of Reproduction Giuseppe Fusco 2019-10-10 A look into the phenomena of sex and reproduction in all organisms, taking an innovative, unified and comprehensive approach.

Getting Started with R Andrew P. Beckerman 2017-01-26 R is rapidly becoming the standard software for statistical analyses, graphical presentation of data, and programming in the natural, physical, social, and engineering sciences. Getting Started with R is now the go-to introductory guide for biologists wanting to learn how to use R in their research. It teaches readers how to import, explore, graph, and analyse data, while keeping them focused on their ultimate goals: clearly communicating their data in oral presentations, posters, papers, and reports. It provides a consistent workflow for using R that is simple, efficient, reliable, and reproducible. This second edition has been updated and expanded while retaining the concise and engaging nature of its predecessor, offering an accessible and fun introduction to the packages dplyr and ggplot2 for data manipulation and graphing. It expands the set of basic statistics considered in the first edition to include new examples of a simple regression, a one-way and a two-way ANOVA. Finally, it introduces a new chapter on the generalised linear model. Getting Started with R is suitable for undergraduates, graduate students, professional researchers, and practitioners in the biological sciences.

The Exploration of Marine Biodiversity Carlos M. Duarte 2006

Protists and Fungi Gareth Editorial Staff 2003-07-03 Explores the appearance, characteristics, and behavior of protists and fungi, lifeforms which are neither plants nor animals, using specific examples such as algae, mold, and mushrooms.

Species Concepts and Phylogenetic Theory Quentin D. Wheeler 2000-06-22 No question in theoretical biology has been more perennially controversial or perplexing than "What is a species?" Recent advances in phylogenetic theory have called into question traditional views of species and spawned many concepts that are currently competing for general acceptance. Once the subject of esoteric intellectual exercises, the "species problem" has emerged as a critically important aspect of global environmental concerns. Completion of an inventory of biodiversity, success in conservation, predictive knowledge about life on earth, management of material resources, formulation of scientifically credible public policy and law, and more depend upon our adoption of the "right" species concept. Quentin D. Wheeler and Rudolf Meier present a debate among top systematic biology theorists to consider the strengths and weaknesses of five competing concepts. Debaters include (1) Ernst Mayr (Biological Species Concept), (2) Rudolf Meier and Rainer Willmann (Hennigian species concept), (3) Brent Mishler and Edward Theriot (one version of the Phylogenetic Species Concept), (4) Quentin Wheeler and Norman Platnick (a competing version of the Phylogenetic Species Concept), and (5) E. O. Wiley and Richard Mayden (the Evolutionary Species Concept). Each author or pair of authors contributes three essays to the debate: first, a position paper with an opening argument for their respective concept of species; second, a counterpoint view of the weakness of competing concepts; and, finally, a rebuttal of the attacks made by other authors. This unique and lively debate format makes the comparative advantages and disadvantages of competing species concepts clear and accessible in a single book for the first time, bringing to light numerous controversies in phylogenetic theory, taxonomy, and philosophy of science that are important to a wide audience. Species Concepts and Phylogenetic Theory will meet a need among scientists, conservationists, policy-makers, and students of biology for an explicit, critical evaluation of a large and complex literature on species. An important reference for professionals, the book will prove especially useful in classrooms and discussion groups where students may find a concise, lucid entrée to one of the most complex questions facing science and society.

Introduction to Fungi John Webster 1980-06-19 "This new edition of the universally acclaimed and widely used textbook on fungal biology has been completely rewritten, drawing directly on the authors' research and teaching experience. The text takes account of the rapid and exciting progress that has been made in the taxonomy, cell and molecular biology, biochemistry, pathology and ecology of the fungi. Features of taxonomic significance are integrated with natural functions, including their relevance to human affairs."--BOOK JACKET.

The Diversity of Life Edward O. Wilson 1992 An account of how the living world became diverse and how humans are destroying that diversity traces the processes that create new species and identifies the events that have disrupted

evolution over the past six hundred million years.

Saving Lives, Buying Time Institute of Medicine 2004-10-09 For more than 50 years, low-cost antimalarial drugs silently saved millions of lives and cured billions of debilitating infections. Today, however, these drugs no longer work against the deadliest form of malaria that exists throughout the world. Malaria deaths in sub-Saharan Africa—currently just over one million per year—are rising because of increased resistance to the old, inexpensive drugs. Although effective new drugs called artemisinins are available, they are unaffordable for the majority of the affected population, even at a cost of one dollar per course. Saving Lives, Buying Time: Economics of Malaria Drugs in an Age of Resistance examines the history of malaria treatments, provides an overview of the current drug crisis, and offers recommendations on maximizing access to and effectiveness of antimalarial drugs. The book finds that most people in endemic countries will not have access to currently effective combination treatments, which should include an artemisinin, without financing from the global community. Without funding for effective treatment, malaria mortality could double over the next 10 to 20 years and transmission will intensify.

Biology Neil A. Campbell 2006-04-30

Glencoe Earth Science Francisco J. Borrero 2012-01-01

Microbial Ecology of Activated Sludge R. J. Seviour 2010 "Microbial Ecology of Activated Sludge, written for both microbiologists and engineers, critically reviews our current understanding of the microbiology of activated sludge, the most commonly used process for treating both domestic and industrial wastes. The contributors are all internationally recognized as leading research workers in activated sludge microbiology, and all have made valuable contributions to our present understanding of the process. The book pays particular attention to how the application of molecular methods has changed our perceptions of the identity of the filamentous bacteria causing the operational disorders of bulking and foaming, and the bacteria responsible for nitrification and denitrification and phosphorus accumulation in nutrient removal processes. Special attention is given to how it is now becoming possible to relate the composition of the community of microbes present in activated sludge, and the in situ function of individual populations there, and how such information might be used to manage and control these systems better. Detailed descriptions of some of these molecular methods are provided to allow newcomers to this field of study an opportunity to apply them in their research. Comprehensive descriptions of organisms of interest and importance are also given, together with high quality photos of activated sludge microbes."--Publisher's description.

Modest Witness@Second Millennium. FemaleMan Meets OncoMouse Donna J. Haraway 2018-06-27 One of the founders of the posthumanities, Donna J. Haraway is professor in the History of Consciousness program at the University of California, Santa Cruz. Author of many books and widely read essays, including the now-classic essay "The Cyborg Manifesto," she received the J.D. Bernal Prize in 2000, a lifetime achievement award from the Society for Social Studies in Science. Thyra Nicholas Goodeve is a professor of Art History at the School of Visual Arts.

The Princeton Guide to Evolution David A. Baum 2013-11-04 The Princeton Guide to Evolution is a comprehensive, concise, and authoritative reference to the major subjects and key concepts in evolutionary biology, from genes to mass extinctions. Edited by a distinguished team of evolutionary biologists, with contributions from leading researchers, the guide contains some 100 clear, accurate, and up-to-date articles on the most important topics in seven major areas: phylogenetics and the history of life; selection and adaptation; evolutionary processes; genes, genomes, and phenotypes; speciation and macroevolution; evolution of behavior, society, and humans; and evolution and modern society. Complete with more than 100 illustrations (including eight pages in color), glossaries of key terms, suggestions for further reading on each topic, and an index, this is an essential volume for undergraduate and graduate students, scientists in related fields, and anyone else with a serious interest in evolution. Explains key topics in some 100 concise and authoritative articles written by a team of leading evolutionary biologists Contains more than 100 illustrations, including eight pages in color Each article includes an outline, glossary, bibliography, and cross-references Covers phylogenetics and the history of life; selection and adaptation; evolutionary processes; genes, genomes, and phenotypes; speciation and macroevolution; evolution of behavior, society, and humans; and evolution and modern society

Liquid Life: On Non-Linear Materiality Rachel Armstrong 2019-12-11 If we lived in a liquid world, the concept of a "machine" would make no sense. Liquid life is metaphor and apparatus that discusses the consequences of thinking, working, and living through liquids. It is an irreducible, paradoxical, parallel, planetary-scale material condition, unevenly distributed spatially, but temporally continuous. It is what remains when logical explanations can no longer account for the experiences that we recognize as part of "being alive." Liquid life references a third-millennial understanding of matter that seeks to restore the agency of the liquid soul for an ecological era, which has been banished by reductionist, "brute" materialist discourses and mechanical models of life. Offering an alternative worldview of the living realm through a "new materialist" and "liquid" study of matter, it conjures forth examples of creatures that do not obey mechanistic concepts like predictability, efficiency, and rationality. With the advent of molecular science, an increasingly persuasive ontology of liquid technologies can be identified. Through the lens of lifelike dynamic droplets, the agency for these systems exists at the interfaces between different fields of matter/energy that respond to highly local effects, with no need for a central organizing system. Liquid Life seeks an alternative partnership between humanity and the natural world. It provokes a re-invention of the languages of the living realm to open up alternative spaces for exploration: Rolf Hughes' "angelology" of language explores the transformative invocations of prose poetry, and Simone Ferracina's graphical notations help shape our concepts of metabolism, upcycling, and designing with fluids. A conceptual and practical toolset for thinking and designing, Liquid Life reunites us with the irreducible "soul substance" of living things, which will neither be simply "solved," nor go away. Rachel Armstrong is Professor of Experimental Architecture at Newcastle University (UK), and has also been a Rising Waters II Fellow for the Robert Rauschenberg Foundation (April-May 2016), TWOTY futurist in 2015, Fellow of the British Interplanetary Society, and a Senior TED Fellow in 2010. She is also the coordinator of the Living Architecture project, an EU-funded project that establishes the principles for our buildings to share some of the properties of living things, e.g. metabolism, operating at the intersection of architecture, building construction, bio-energy and synthetic biology. She is also the author of Vibrant Architecture (De Gruyter, 2015), Star Ark: A Living, Self-Sustaining Spaceship (Springer, 2017), and Soft Living Architecture: An Alternative View of Bio-informed Design Practice (Bloomsbury, 2018).

The Species Problem Igor Pavlinov 2013-02-06 The book includes collection of theoretical papers dealing with the species problem, which is among most fundamental issues in biology. The principal topics are: consideration of the species problem from the standpoint of modern non-classical science paradigm, with emphasis on its conceptual status presuming its analysis within certain conceptual framework; evolutionary emergence of the species as discrete unit of

certain level of generality; epistemological consideration of the species as a particular explanatory hypotheses, with respective revised concepts of biodiversity and conservation; considerations of evolutionary and phylogenomic species concepts as candidates for the universal one; re-appraisal of the biological species concept based on the "friend-foe" recognition system; species delimitation approach using multi-locus coalescent-based method; a re-consideration of the Darwin's species concept.

What, if anything, are species? Brent D. Mishler 2021-04-01 This book is an extended argument for abandoning the species rank. Instead, the author proposes that the rank of "species" be replaced by a pluralistic and multi-level view. In such a view, all clades including the smallest identifiable one would be named and studied within a phylogenetic context. What are currently called "species" represent different sorts of things depending on the sort of organisms and processes being considered. This is already the case, but is not formally recognized by those scientists using the species rank in their work. Adopting a rankless taxonomy at all levels would enhance academic studies of evolution and ecology and yield practical benefits in areas of public concern such as conservation. The Open Access version of this book, available at <http://www.taylorfrancis.com/books/e/9781498714549>, has been made available under a Creative Commons Attribution-Non Commercial license. KEY FEATURES • Proposes the replacement of restrictive species concepts with a pluralistic view • Suggests abandoning the formal taxonomic rank of "species" • Considers zoological, botanical, and microbiological aspects of the species level • Deals with practical issues such as conservation, inventories, and field guides

Skin Barrier Function T. Agner 2016-02-04 Although a very fragile structure, the skin barrier is probably one of the most important organs of the body. Inward/out it is responsible for body integrity and outward/in for keeping microbes, chemicals, and allergens from penetrating the skin. Since the role of barrier integrity in atopic dermatitis and the relationship to filaggrin mutations was discovered a decade ago, research focus has been on the skin barrier, and numerous new publications have become available. This book is an interdisciplinary update offering a wide range of information on the subject. It covers new basic research on skin markers, including results on filaggrin and on methods for the assessment of the barrier function. Biological variation and aspects of skin barrier function restoration are discussed as well. Further sections are dedicated to clinical implications of skin barrier integrity, factors influencing the penetration of the skin, influence of wet work, and guidance for prevention and saving the barrier. Distinguished researchers have contributed to this book, providing a comprehensive and thorough overview of the skin barrier function. Researchers in the field, dermatologists, occupational physicians, and related industry will find this publication an essential source of information.

Molecular Identification of Fungi Youssuf Gherbawy 2010-03-03 Fungi enjoy great popularity in pharmaceutical, agricultural, and biotechnological applications. Recent advances in the decipherment of whole fungal genomes promise an acceleration of these trends. This timely book links scientists from different parts of the world who are interested in the molecular identification of fungi combined with the exploration of the fungal biodiversity in different ecosystems. It provides a compendium for scientists who rely on a rapid and reliable detection of fungal specimens in environmental as well as clinical resources in order to ensure the benefit of industrial and clinical applications. Chapters focus on the opportunities and limits of the molecular marker-mediated identification of fungi. Various methods, procedures and strategies are outlined. Furthermore, the book offers an update of the current progress in the development of fungal molecular techniques, and draws attention to potential and associated problems, as well as integrating theory and practice.

The Living Earth Dr Tracey Greenwood 2018-08

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.

The Metaphysics of Biology John Dupré 2021-06-03 This Element is an introduction to the metaphysics of biology, a very general account of the nature of the living world. The first part of the Element addresses more traditionally philosophical questions - whether biological systems are reducible to the properties of their physical parts, causation and laws of nature, substantialist and processualist accounts of life, and the nature of biological kinds. The second half will offer an understanding of important biological entities, drawing on the earlier discussions. This division should not be taken too seriously, however: the topics in both parts are deeply interconnected. Although this does not claim to be a scientific work, it does aim to be firmly grounded in our best scientific knowledge; it is an exercise in naturalistic metaphysics. Its most distinctive feature is that argues throughout for a view of living systems as processes rather than things or, in the technical philosophical sense, substances.

The Species Problem Richard A. Richards 2010-07-01 There is long-standing disagreement among systematists about how to divide biodiversity into species. Over twenty different species concepts are used to group organisms, according to criteria as diverse as morphological or molecular similarity, interbreeding and genealogical relationships. This, combined with the implications of evolutionary biology, raises the worry that either there is no single kind of species, or that species are not real. This book surveys the history of thinking about species from Aristotle to modern systematics in order to understand the origin of the problem, and advocates a solution based on the idea of the division of conceptual labor, whereby species concepts function in different ways - theoretically and operationally. It also considers related topics such as individuality and the metaphysics of evolution, and how scientific terms get their meaning. This important addition to the current debate will be essential for philosophers and historians of science, and for biologists.

Biology of Hevea Rubber P. M. Priyadarshan 2011 Rubber is an economically important material that occurs naturally and can be produced synthetically. Many advances have been made in the understanding of the cultivation and biology of the rubber tree, *Hevea brasiliensis*, and this book covers the essential elements of rubber breeding and physiology to provide a guide for cultivators and researchers of this vital crop. It provides an in-depth analysis of plant structure and crop physiology, climatic requirements, latex production, genetics and breeding, biotechnology, molecular biology, soil tillage and crop establishment, nutrition, weed cont.