Definition And Basic Concept Of Biosystematics Taxonomy And Classification

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Phylogenetics - E. O. Wiley 2011-10-11
The long-awaited revision of the industry standard on phylogenetics Since the publication of the first edition of this landmark volume more than twenty-five years ago, phylogenetic systematics has taken its place as the dominant paradigm of systematic biology. It has profoundly influenced the way scientists study evolution, and has seen many theoretical and technical advances as the field has continued to grow. It goes almost without saying that the next twenty-five years of phylogenetic research will prove as fascinating as the first, with many exciting developments yet to come. This new edition of Phylogenetics captures the very essence of this rapidly evolving discipline. Written for the practicing systematist and phylogeneticist, it addresses both the philosophical and technical issues of the field, as well as surveys general practices in taxonomy. Major sections of the book deal with the nature of species and higher taxa, homology and characters, trees and tree graphs, and biogeography—the purpose being to develop biologically relevant species, character, tree, and biogeographic concepts that can be applied fruitfully to phylogenetics. The book then turns its focus to phylogenetic trees, including an in-depth guide to tree-building algorithms. Additional coverage includes: Parsimony and parsimony analysis Parametric phylogenetics including maximum likelihood and Bayesian approaches Phylogenetic classification Critiques of evolutionary taxonomy, phenetics, and transformed cladistics Specimen selection, field collecting, and curating Systematic publication and the rules of nomenclature Providing a thorough synthesis of the field, this important update to Phylogenetics is essential for students and researchers in the areas of

evolutionary biology, molecular evolution, genetics and evolutionary genetics, paleontology, physical anthropology, and zoology.

Isopod Systematics and Evolution - Brian Frederick Kensley 2001

A look at isopod systematics and evolution, topics confronted include the influence of genetic and extrachromasomal factors on their population rate and a comparison of different species in different habitats.

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.

Plant Systematics - Michael G. Simpson 2019-11-10

Plant Systematics, Third Edition, has made substantial contributions to plant systematics courses at the upper-undergraduate and first year graduate level, with the first edition winning The New York Botanical Garden's Henry Allan Gleason Award for outstanding recent publication in plant taxonomy, plant ecology or plant geography. This third edition continues to provide the basis for teaching an introduction to the morphology, evolution and classification of land plants. A foundation of the approach, methods, research goals, evidence and terminology of plant systematics are presented, along with the most recent knowledge of evolutionary relationships of plants and practical information vital to the field. In this new edition, the author includes greatly expanded treatments on families of flowering plants, as well as tropical trees (all with full-color plates), and an updated explanation of maximum likelihood and Bayesian inference algorithms. Chapters on morphology and plant nomenclature have also been enhanced with new material. Covers research developments in plant molecular biology Features clear, detailed cladograms, drawings and photos Includes major revisions to chapters on phylogenetic systematics and plant morphology

Evaluating the Taxonomic Status of the Mexican Gray Wolf and the Red Wolf - National Academies of Sciences, Engineering, and Medicine 2019-05-01

Scientists strive to develop clear rules for naming and grouping living organisms. But taxonomy, the scientific study of biological classification and evolution, is often highly debated. Members of a species, the fundamental unit of taxonomy and evolution, share a common evolutionary history and a common evolutionary path to the future. Yet, it can be difficult to determine whether the evolutionary history or future of a population is sufficiently distinct to designate it as a unique species. A species is not a fixed entity â€" the relationship among the members of the same species is only a snapshot of a moment in time. Different populations of the same species can be in different

stages in the process of species formation or dissolution. In some cases hybridization and introgression can create enormous challenges in interpreting data on genetic distinctions between groups. Hybridization is far more common in the evolutionary history of many species than previously recognized. As a result, the precise taxonomic status of an organism may be highly debated. This is the current case with the Mexican gray wolf (Canis lupus baileyi) and the red wolf (Canis rufus), and this report assesses the taxonomic status for each.

Plant Taxonomy and Biosystematics - Clive A. Stace 1991-10-03

A concise, up-to-date and fully-integrated discussion of present-day plant taxonomy.

Plant Taxonomy - Tod F. Stuessy 2009-01-01

The field of plant taxonomy has transformed rapidly over the past fifteen years, especially with regard to improvements in cladistic analysis and the use of new molecular data. The second edition of this popular resource reflects these far-reaching and dramatic developments with more than 3,000 new references and many new figures. Synthesizing current research and trends, Plant Taxonomy now provides the most up-to-date overview in relation to monographic, biodiversity, and evolutionary studies, and continues to be an essential resource for students and scholars. This text is divided into two parts: Part 1 explains the principles of taxonomy, including the importance of systematics, characters, concepts of categories, and different approaches to biological classification. Part 2 outlines the different types of data used in plant taxonomic studies with suggestions on their efficacy and modes of presentation and evaluation. This section also lists the equipment and financial resources required for gathering each type of data. References throughout the book illuminate the historical development of taxonomic terminology and philosophy while citations offer further study. Plant Taxonomy is also a personal story of what it means to be a practicing taxonomist and to view these activities within a meaningful conceptual framework. Tod F. Stuessy recalls the progression of his own work and shares his belief that the most creative taxonomy is done by those who have a strong conceptual grasp of their own research.

Systematics in Prehistory - Robert C. Dunnell 1971

In evaluating introductory and higher level courses in archaeology, one is struck with the absence of any general text which treats the units employed by the discipline, though all texts are cast in terms of peculiar archaeological units. This book is an attempt to record the use and classification of archaeological units.

Plant Systematics - Michael G. Simpson 2010-07-19

Plant Systematics, Second Edition, provides the basis for teaching an introduction to the morphology, evolution, and classification of land plants. It presents a foundation of the approach, methods, research goals, evidence, and terminology of plant systematics, along with the most recent knowledge of evolutionary relationships of plants and practical information vital to the field. This updated edition has been expanded to include 15 fern families, 9 gymnosperm families, and increased angiosperm family treatments from 100 to 129. Each family description includes a plate of full color photographs, illustrating exemplars of the group along with dissected and labeled material to show diagnostic features. The book includes a new chapter on species

concepts and the role and impact of plant systematics in conservation biology, and a new appendix on statistical and morphometric techniques in plant systematics. It also contains more detailed explanations of maximum likelihood and Bayesian phylogeny inference methods, an expanded coverage and glossary of morphological terms, and an updated chapter on botanical nomenclature. This book is recommended for graduate and undergraduate students in botany, plant taxonomy, plant systematics, plant pathology, plant anatomy, and ecology as well as scientists and researchers in any of the plant sciences. The second edition of Plant Systematics has been expanded to include: Fifteen fern families, 9 gymnosperm families, and an increase of angiosperm family treatments from 100 to 129. Each family description includes a plate of full color photographs, illustrating exemplars of the group along with dissected and labeled material to show diagnostic features A new chapter on species concepts and the role and impact of plant systematics in conservation biology A new appendix on statistical and morphometric techniques in plant systematics In addition, the second edition contains more detailed explanations of maximum likelihood and Bayesian phylogeny inference methods, an expanded coverage and glossary of morphological terms, and an updated chapter on botanical nomenclature

Bats in the Anthropocene: Conservation of Bats in a Changing World - Christian C. Voigt 2015-12-07

This book focuses on central themes related to the conservation of bats. It details their response to land-use change and management practices, intensified urbanization and roost disturbance and loss. Increasing interactions between humans and bats as a result of hunting, disease relationships, occupation of human dwellings, and conflict over fruit crops are explored in depth. Finally, contributors highlight the roles that taxonomy, conservation networks and conservation psychology have to play in conserving this imperilled but vital taxon. With over 1300 species, bats are the second largest order of mammals, yet as the Anthropocene dawns, bat populations around the world are in decline. Greater understanding of the anthropogenic drivers of this decline and exploration of possible mitigation measures are urgently needed if we are to retain global bat diversity in the coming decades. This book brings together teams of international experts to provide a global review of current understanding and recommend directions for future research and mitigation.

Systematics and the Exploration of Life - Philippe Grandcolas 2021-03-31

This book's aim is to obtain and organize knowledge about the diversity of living things. Their epistomological and methodological fundamentals are explained in the framework of the biology of evolution. The methods of construction and use of phylogenetic trees are presented as well as the classification and description of taxa with the nomenclature rules.

Principles of Biosystematics - Judy Longley Lines 1970

The New Taxonomy - Quentin D. Wheeler 2008-04-09

Finalist for 2009 The Council on Botanical & Horticultural Libraries Literature Award! A Fresh Look at Taxonomy The most fundamental of all biological sciences, taxonomy underpins any long term strategies for reconstructing the great tree of life or salvaging as much biodiversity as possible. Yet we are still unable to say with any certainty how many species are living on the earth. The New Taxonomy describes how a

confluence of theory, cyberinfrastructure, and international teamwork can meet this unprecedented research challenge and marks an emerging field, cybertaxonomy. Taxonomy Meets the Challenges of the Biodiversity Crisis An in-depth discussion of the future of descriptive taxonomy, the book examines the efforts of several international groups to catalog the world's biodiversity and make it accessible. An answer to Julien Huxley's The New Systematics, the book marks the beginning of an upward trajectory of taxonomy to meet the unprecedented challenges of the biodiversity crisis. Contemporary taxonomists reclaim the unique mission, goals, and importance of taxonomy as an independent science. They cover technologies such as DNA evidence and its applications, computer-assisted species identification, digital morphology, and E-typification. The book also provides insight into effective ways of organizing taxonomic information and discusses what benefits can be leveraged from a rapid growth of taxonomic knowledge. A Vision and A Strategy for the Future Not much has changed since E.O. Wilson pointed out how little we know of Earth's species in 1985. This book offers a vision and a strategy for changing all that. The first current, unapologetic look at morphology and descriptive taxonomy that points out their incredible importance to science and society, this book frames one of the most constructive responses to biodiversity crises. It is a call to action for the taxonomy and museum communities to come together and to organize, plan, innovate, and initiate the most ambitious period of exploration in the long history of taxonomy.

Systematics and Taxonomy of Australian Birds - Les Christidis 2008-01-25

Systematics and Taxonomy of Australian Birds presents an up-to-date classification of Australian birds. Building on the authors' 1994 book, The Taxonomy and Species of Birds of Australia and its Territories, it incorporates the extensive volume of relevant systematic work since then. The findings of these studies are summarised and evaluated in the explanations for the taxonomic treatments adopted, and with the extensive citations, the book serves as a comprehensive introduction to the recent systematic literature of Australian birds. All species of birds that have been recorded from the Australian mainland, Tasmania, island territories and surrounding waters are treated and listed. Along with extant native species, all accepted vagrants, recently extinct (since 1800) native species and established introduced species are included.

Species Concepts in Biology - Frank E. Zachos 2016-10-05

Frank E. Zachos offers a comprehensive review of one of today's most important and contentious issues in biology: the species problem. After setting the stage with key background information on the topic, the book provides a brief history of species concepts from antiquity to the Modern Synthesis, followed by a discussion of the ontological status of species with a focus on the individuality thesis and potential means of reconciling it with other philosophical approaches. More than 30 different species concepts found in the literature are presented in an annotated list, and the most important ones, including the Biological, Genetic, Evolutionary and different versions of the Phylogenetic Species Concept, are discussed in more detail. Specific questions addressed include the problem of asexual and prokaryotic species, intraspecific categories like subspecies and Evolutionarily Significant Units, and a

potential solution to the species problem based on a hierarchical approach that distinguishes between ontological and operational species concepts. A full chapter is dedicated to the challenge of delimiting species by means of a discrete taxonomy in a continuous world of inherently fuzzy boundaries. Further, the book outlines the practical ramifications for ecology and evolutionary biology of how we define the species category, highlighting the danger of an apples and oranges problem if what we subsume under the same name ("species") is in actuality a variety of different entities. A succinct summary chapter, glossary and annotated list of references round out the coverage, making the book essential reading for all biologists looking for an accessible introduction to the historical, philosophical and practical dimensions of the species problem.

Fundamentals of Plant Systematics - Albert E. Radford 1986

The Biology of Biodiversity - M. Kato 2012-12-06
Biological diversity, or biodiversity, refers to the universal attribute of all living organisms that each individual being is unique - that is, no two organisms are identical. The biology of biodiversity must include all the aspects of evolutionary and ecological sciences analyzing the origin, changes, and maintenance of the di versity of living organisms. Today biodiversity, which benefits human life in vari ous ways, is threatened by the expansion of human activities. Biological research in biodiversity contributes not only to understanding biodiversity itself but also to its conservation and utilization. The Biology of Biodiversity was the specialty area of the 1998 International Prize for Biology. The International Prize for Biology was established in 1985 in commemoration of the sixty-year reign of the Emperor Showa and his longtime devotion to biological research. The 1998 Prize was awarded to Professor Otto Thomas Solbrig, Harvard University, one of the authors of this book. In conjunction with the awarding of the International Prize for Biology, the 14th International Symposium with the theme of The Biology of Biodiversity was held in Hayama on the 9th and 10th of December 1998, with financial support by an international symposium grant from the Ministry of Education, Science, Sports and Culture of Japan. The invited speakers were chosen so as to cover four basic aspects of biodiversity: species diversity and phylogeny, ecological biodiversity, development and evolution, and genetic diversity of living organisms including human beings.

Biological Systematics - Randall T. Schuh 2011-04-15
Biological Systematics: Principles and Applications draws equally from examples in botany and zoology to provide a modern account of cladistic principles and techniques. It is a core systematics textbook with a focus on parsimony-based approaches for students and biologists interested in systematics and comparative biology. Randall T. Schuh and Andrew V. Z. Brower cover: -the history and philosophy of systematics and nomenclature; -the mechanics and methods of analysis and evaluation of results; -the practical applications of results and wider relevance within biological classification, biogeography, adaptation and coevolution, biodiversity, and conservation; and -software applications. This new and thoroughly revised edition reflects the exponential growth in the use of DNA sequence data in systematics. New data techniques

and a notable increase in the number of examples from molecular systematics will be of interest to students increasingly involved in molecular and genetic work.

Molecular Markers, Natural History and Evolution - J. C. Avise 2012-12-06

Molecular approaches have opened new windows on a host of ecological and evolutionary disciplines, ranging from population genetics and behavioral ecology to conservation biology and systematics. Molecular Markers, Natural History and Evolution summarizes the multi-faceted discoveries about organisms in nature that have stemmed from analyses of genetic markers provided by polymorphic proteins and DNAs. The first part of the book introduces rationales for the use of molecular markers, provides a history of molecular phylogenetics, and describes a wide variety of laboratory methods and interpretative tools in the field. The second and major portion of the book provides a cornucopia of biological applications for molecular markers, organized along a scale from micro-evolutionary topics (such as forensics, parentage, kinship, population structure, and intra-specific phylogeny) to macro-evolutionary themes (including species relationships and the deeper phylogenetic structure in the tree of life). Unlike most prior books in molecular evolution, the focus is on organismal natural history and evolution, with the macromolecules being the means rather than the ends of scientific inquiry. Written as an intellectual stimulus for the advanced undergraduate, graduate student, or the practicing biologist desiring a wellspring of research ideas at the interface of molecular and organismal biology, this book presents material in a manner that is both technically straightforward, yet rich with concepts and with empirical examples from the world of nature.

Concepts of Biology - Samantha Fowler 2018-01-07

Concepts of Biology is designed for the single-semester introduction to biology course for non-science majors, which for many students is their only college-level science course. As such, this course represents an important opportunity for students to develop the necessary knowledge, tools, and skills to make informed decisions as they continue with their lives. Rather than being mired down with facts and vocabulary, the typical non-science major student needs information presented in a way that is easy to read and understand. Even more importantly, the content should be meaningful. Students do much better when they understand why biology is relevant to their everyday lives. For these reasons, Concepts of Biology is grounded on an evolutionary basis and includes exciting features that highlight careers in the biological sciences and everyday applications of the concepts at hand.We also strive to show the interconnectedness of topics within this extremely broad discipline. In order to meet the needs of today's instructors and students, we maintain the overall organization and coverage found in most syllabi for this course. A strength of Concepts of Biology is that instructors can customize the book, adapting it to the approach that works best in their classroom. Concepts of Biology also includes an innovative art program that incorporates critical thinking and clicker questions to help students understand--and apply--key concepts.

Systematics, Evolution, and Biogeography of Compositae - Vicki A. Funk 2009

"This spectacular book does full justice to the Compositae (Asteraceae), the largest and most successful flowering plant family with some 1700 genera and 24,000 species. It is an indispensable reference, providing the

most up-to-date hypotheses of phylogenetic relationships in the family based on molecular and morphological characters, along with the corresponding subfamilial and tribal classification. The 2009 work not only integrates the extensive molecular phylogenetic analyses conducted in the last 25 years, but also uses these to produce a metatree for about 900 taxa of Compositae. The book contains 44 chapters, contributed by 80 authors, covering the history, economic importance, character variation, and systematic and phylogenetic diversity of the family. The emphasis of this work is phylogenetic; its chapters provide a detailed, current, and thoroughly documented presentation of the major (and not so major) clades in the family, citing some 2632 references. Like the Compositae, the book is massive, diverse, and fascinating. It is beautifully illustrated, with 170 figures, and an additional 108 cladograms (all consistently color-coded, based on the geographic range of the included taxa); within these figures are displayed 443 color photographs, clearly demonstrating the amazing array of floral and vegetative form expressed by members of the clade." --NHBS Environment Bookstore.

Phenetic and Phylogenetic Classification - Vernon Hilton Heywood 1964

Plant Systematics - Gurcharan Singh 2019-06-07

This fourth edition of Plant Systematics is completely revised and updated. It incorporates the updated International Code of Nomenclature for Algae, Fungi and Plants (Shenzhen Code, 2018), the new version of PhyloCode (Beta version of Phylocode 5, 2014), APweb version 14 (September, 2018), revised Angiosperm Phylogeny Group classification (APG IV, 2016), new Pteridophyte Phylogeny Group Classification (PPG I, 2016), besides the updates since the publication of third edition. The book is a blend of classical fundamental aspects and recent developments, especially in the field of molecular systematics, cladistics and computer identification. Special attention has been given to information on botanical nomenclature, identification, molecular systematics and phylogeny of angiosperms. The complicated concepts of phylogeny, taxometrics and cladistics have been explained with a view to providing a comparison between these diverse but interactive fields of study. An attempt has been made to build upon a common example when exploring different methods, especially in procedures of identification, taxometrics and cladistics. The major systems of classification are evaluated critically. Discussion on major families of Pteridophytes, Gymnosperms and Angiosperms, especially those of major phylogenetic interest, form a major portion of this edition. The ebook includes nearly 500 color photographs set out in 36 pages covering plants from different parts of the world. In addition, 305 black & white illustrations have been included to provide a better understanding of the plants covered in the book.

Systematics and Taxonomy of Australian Birds - Les Christidis 2008

Lists all those species of birds that have been recorded from the Australian mainland, Tasmania, island territories and surrounding waters. Based on theauthors' original book The Taxonomy and Species of Birds of Australia and its Territories, it includes any new species for which records have been accepted by the Records Appraisal Committee of Birds Australia. It also includes all extant and recently extinct (post-1800)

native species, as well as new species, accepted vagrants and introduced species that have become established and continue to survive in the wild.

The New Systematics - Julian Huxley 1952

Code International de Nomenclature Zoologique - International Commission on Zoological Nomenclature 1985

Typologies and Taxonomies - Kenneth D. Bailey 1994-06-13
How do we group different subjects on a variety of variables? Should we use a classification procedure in which only the concepts are classified (typology), one in which only empirical entities are classified (taxonomy), or some combination of both? In this clearly written book, Bailey addresses these questions and shows how classification methods can be used to improve research. Beginning with an exploration of the advantages and disadvantages of classification procedures including those typologies that can be constructed without the use of a computer, the book covers such topics as clustering procedures (including agglomerative and divisive methods), the relationship among various classification techniques (including the relationship of monothetic, qualitative typologies to polythetic, quantitative taxonomies), a comparison of clustering methods and how these methods compare with related statistical techniques such as factor analysis, multidimensional scaling and systems analysis, and lists classification resources. This volume also discusses software packages for use in clustering techniques.Learn more about "The Little Green Book" - QASS Series! Click Here

Systematics - Ward C. Wheeler 2012-06-14
Systematics: A Course of Lectures is designed for use in anadvanced undergraduate or introductory graduate level course insystematics and is meant to present core systematic concepts andliterature. The book covers topics such as the history ofsystematic thinking and fundamental concepts in the field includingspecies concepts, homology, and hypothesis testing. Analyticalmethods are covered in detail with chapters devoted to sequencealignment, optimality criteria, and methods such as distance,parsimony, maximum likelihood and Bayesian approaches. Trees andtree searching, consensus and super-tree methods, support measures,and other relevant topics are each covered in their own sections. The work is not a bleeding-edge statement or in-depth review ofthe entirety of systematics, but covers the basics as broadly ascould be handled in a one semester course. Most chapters aredesigned to be a single 1.5 hour class, with those on parsimony,likelihood, posterior probability, and tree searching two classes(2 x 1.5 hours).

Biological Systematics - Igor Ya. Pavlinov 2021-03-26
This volume reviews the historical roots and theoretical foundations of biological systematics in an approachable text. The author outlines the structure and main tasks of systematics. Conceptual history is characterized as a succession of scientific revolutions. The philosophical foundations of systematic research are briefly reviewed as well as the structure and content of taxonomic theories. Most important research programs in systematics are outlined. The book includes analysis of the principal problematic issues as "scientific puzzles" in systematics. This volume is intended for professional taxonomists, biologists of various specialties, students, as well as all those interested in the history and theory of biology and natural sciences. Key Features

Considers the conceptual history of systematics as the framework of evolutionary epistemology Builds a hierarchically organized quasi-axiomatic system of taxonomic theory Contends that more reductionist taxonomic concepts are less objective Supports taxonomic pluralism by non-classic philosophy of science as a normal condition of systematics Documents that "taxonomic puzzles" result from conflict between monistic and pluralistic attitudes Related Titles de Queiroz, K. et al., eds. Phylonyms: A Companion to the PhyloCode (ISBN 978-1-1383-3293-5) Sigwart, J. D. What Species Mean: A User's Guide to the Units of Biodiversity (ISBN 978-1-4987-9937-9) Rieppel, O. Phylogenetic Systematics: Haeckel to Hennig (ISBN 978-1-4987-5488-0) Wilkins, J. S. Species: The Evolution of the Idea, 2nd ed. (ISBN 978-1-1380-5574-2)
Symposium on Biosystematics - Vernon Hilton Heywood 1963

Cladistics - David M. Williams 2020-08-06
This new edition of a foundational text presents a contemporary review of cladistics, as applied to biological classification. It provides a comprehensive account of the past fifty years of discussion on the relationship between classification, phylogeny and evolution. It covers cladistics in the era of molecular data, detailing new advances and ideas that have emerged over the last twenty-five years. Written in an accessible style by internationally renowned authors in the field, readers are straightforwardly guided through fundamental principles and terminology. Simple worked examples and easy-to-understand diagrams also help readers navigate complex problems that have perplexed scientists for centuries. This practical guide is an essential addition for advanced undergraduates, postgraduates and researchers in taxonomy, systematics, comparative biology, evolutionary biology and molecular biology.
Entomology - Cedric Gillott 2005-12-27
Gillott’s thorough yet clear writing style continues to keep Entomology near the top of the class as a text for senior undergraduates, and for graduate students and professionals seeking an introduction to specific entomological topics. The author’s long-held belief that an introductory entomology course should present a balanced treatment of the subject is reflected in the continued arrangement of the book in four sections: Evolution and Diversity, Anatomy and Physiology, Reproduction and Development, and Ecology. For the third edition, all chapters have been updated. This includes not only the addition of new information and concepts but also the reduction or exclusion of material no longer considered "mainstream", so as to keep the book at a reasonable size. Based on exciting discoveries made during the previous decade, the topics of insect evolutionary relationships, semiochemicals, gas exchange, immune responses (including those of parasites and parasitoids), flight, and the management of pests have received particular attention in the preparation of the third edition. Overall, more than 30 new or significantly revised figures have been incorporated.
Descriptive Taxonomy - Mark F. Watson 2015-01-08
"Department of Life Sciences, Natural History Museum, London, UK. We are living in an age where biodiversity is being lost at an unprecedented rate, with the well-documented problems of habitat destruction being compounded by the largely unknown future effects of Climate Change. High quality, accurate and reliable biodiversity data are needed by biologists,

conservationists and environmental modellers to understand and assess the ecosystems in which they work, to produce effective conservation strategies, and to feed computer-generated models which predict what environments and habitats we might face"--

Plant Systematics - G Singh 2016-04-19

The focus of the present edition has been to further consolidate the information on the principles of plant systematic, include detailed discussion on all major systems of classification, and significantly, also include discussion on the selected families of vascular plants, without sacrificing the discussion on basic principles. The families included for discussion are largely those which have wide representation, as also those that are less known but significant in evaluating the phylogeny of angiosperms. The discussion of the families also has a considerable focus on their phylogenetic relationships, as evidenced by recent cladistic studies, with liberal citation of molecular data. Several additional families have been included for detailed discussion in the present volume.

Treatise on Zoology - Anatomy, Taxonomy, Biology. The Crustacea, Volume 9 Part C (2 vols) - Peter Castro 2015-11-24

This volume, 9C, covers the Brachyura.

Phylogenetic Systematics - Willi Hennig 1999

Phylogenetic Systematics, first published in 1966, marks a turning point in the history of systematic biology. Willi Hennig's influential synthetic work, arguing for the primacy of the phylogenetic system as the general reference system in biology, generated significant controversy and opened possibilities for evolutionary biology that are still being explored.

Plant Systematics - Arun K. Pandey 2021-06-01

This book is designed to introduce the fundamentals of systematics in a simple, concise and balanced manner. The book aims to equip the students with the basics of plant taxonomy and at the same time also update them with the most recent advances in the field of plant systematics. The book has been organized into 21 chapters that introduce and explain different concepts in a stimulating manner. The text is supplemented with relevant illustrations and photographs. Relevant literature has been added to provide a better picture of the most recent updates in the field of plant systematics. Note: T&F does not sell or distribute the Hardback in India, Pakistan, Nepal, Bhutan, Bangladesh and Sri Lanka.

Vascular Plant Systematics - Albert E. Radford 1974

Organizational Systematics - Bill McKelvey 2022-05-13

This title is part of UC Press's Voices Revived program, which commemorates University of California Press’s mission to seek out and cultivate the brightest minds and give them voice, reach, and impact. Drawing on a backlist dating to 1893, Voices Revived makes high-quality, peer-reviewed scholarship accessible once again using print-on-demand technology. This title was originally published in 1982.

Species Concepts and Phylogenetic Theory - Quentin D. Wheeler 2000

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.