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KEY=EDITION - BARKER AGUIRRE

PLANT SYSTEMATICS

A PHYLOGENETIC APPROACH

Sinauer Associates Fourth Edition of Plant Systematics reflects changes in the circumscription of many orders and families to represent monophyletic groups, following the most recent classification of the Angiosperm Phylogeny Group.

PLANT SYSTEMATICS

AN INTEGRATED APPROACH, FOURTH EDITION

CRC Press 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.

PLANT SYSTEMATICS

*Elsevier Plant Systematics is a comprehensive and beautifully illustrated text, covering the most up-to-date and essential paradigms, concepts, and terms required for a basic understanding of plant systematics. This book contains numerous cladograms that illustrate the evolutionary relationships of major plant groups, with an emphasis on the adaptive significance of major evolutionary novelties. It provides descriptions and classifications of major groups of angiosperms, including over 90 flowering plant families; a comprehensive glossary of plant morphological terms, as well as appendices on botanical illustration and plant descriptions. Pedagogy includes review questions, exercises, and references that complement each chapter. This text is ideal for graduate and undergraduate students in botany, plant taxonomy, plant systematics, plant pathology, ecology as well as faculty and researchers in any of the plant sciences. * The Henry Allan Gleason Award of The New York Botanical Garden, awarded for "Outstanding recent publication in the field of plant taxonomy, plant ecology, or plant geography" (2006) * Contains numerous cladograms that illustrate the evolutionary relationships of major plant groups, with an emphasis on the adaptive significance of major evolutionary novelties *Provides descriptions and classifications of major groups of angiosperms, including over 90 flowering plant families * Includes a comprehensive glossary of plant morphological terms as well as appendices on botanical illustration and plant description*

PHOTO GALLERY OF VASCULAR PLANTS, 6 MONTH ACCESS

PLANT SYSTEMATICS

Academic Press 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

MOLECULAR SYSTEMATICS AND PLANT EVOLUTION

CRC Press Molecular Systematics and Plant Evolution discusses the diversity and evolution of plants with a molecular approach. It looks at population genetics, phylogeny (history of evolution) and developmental genetics, to provide a framework from which to understand evolutionary patterns and relationships amongst plants. The international panel of contributors are all respected systematists and evolutionary biologists, who have brought together a wide range of topics from the forefront of research while keeping the text accessible to students. It has been written for senior undergraduates, postgraduates and researchers in the fields of botany, systematics, population / conservation genetics, phylogenetics and evolutionary biology.

PLANT SYSTEMATICS

Science Pub Incorporated Aiming to strike a balance between classical fundamental information and the developments in plant systematics, this book pays particular attention to information on botanical nomenclature, identification and phylogeny of angiosperms, with examples and explanations.

PLANT SYSTEMATICS

AN INTEGRATED APPROACH

Science Publishers "The book strikes a balance between classical fundamental information and the recent developments in plant systematics. Special attention has been devoted to the information on botanical nomenclature, identification and phylogeny of angiosperms with numerous relevant examples and detailed explanation of the important nomenclatural problems. An attempt has been made to present a continuity between orthodox and contemporary identification methods by working on a common example. The methods of identification using computers have been further explored to help better online identification. The chapter on cladistic methods has been totally revised, and molecular systematics discussed in considerable detail."--Jacket.

BIOLOGICAL APPROACHES AND EVOLUTIONARY TRENDS IN PLANTS

Elsevier Biological Approaches and Evolutionary Trends in Plants is a collection of papers presented at the Fourth International Symposium of Plant Biosystematics held on July 10-14, 1989 in Kyoto, Japan. Contributors, some are world's leading plant biologists, discuss the findings in evolutionary biology and issues in plant biosystematics in light of the evidence and ideas brought forward at various levels of biological organization, from molecule to cell, individual, population, species, and community levels. This volume is organized into four sections encompassing 22 chapters and begins with an overview of discoveries concerning parapatric differentiation of weed populations, including adaptive evolution in herbicide resistant biotypes and complex evolutionary patterns in weed-crop complexes of various groups. The next section explores molecular approaches in plant biosystematics, focusing on amino acid sequencing of proteins; restriction-site variations of cpDNA, mitDNA, rDNA, etc.; and chromosome-banding patterns revealed by differential staining. The discussion shifts to a wave of research in plant population biology and evolutionary ecology since the 1970s and its impact on biology and biosystematics. The book considers various aspects of reproductive biology and evolutionary changes in significant reproductive parameters and attempts to demographically quantify these parameters. The final chapter is devoted to the use of functional phylogenetic systematics for predictive ecology. This book will be of interest to plant biologists and scientists and researchers in fields such as biochemistry, botany, microbiology, ecology, and evolutionary biology.

PHYLOGENETIC SYSTEMATICS

University of Illinois Press 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.

MOLECULAR SYSTEMATICS OF PLANTS II

DNA SEQUENCING

Springer Science & Business Media In the five years since the publication of Molecular Systematics of Plants, the field of molecular systematics has advanced at an astonishing pace. This period has been marked by a volume of new empirical data and advances in theoretical and analytical issues related to DNA. Comparative DNA sequencing, facilitated by the amplification of DNA via the polymerase chain reaction (PCR), has become the tool of choice for molecular systematics. As a result, large portions of the Molecular Systematics of Plants have become outdated. Molecular Systematics of Plants II summarizes these recent achievements in plant molecular systematics. Like its predecessor, this completely revised work illustrates the potential of DNA markers for addressing a wide variety of phylogenetic and evolutionary questions. The volume provides guidance in choosing appropriate techniques, as well as appropriate genes for sequencing, for given levels of systematic inquiry. More than a review of techniques and previous work, Molecular Systematics of Plants II provides a stimulus for developing future research in this rapidly evolving field. Molecular Systematics of Plants II is not only written for systematists (faculty, graduate students, and researchers), but also for evolutionary biologists, botanists, and paleobotanists interested in reviewing current theory and practice in plant molecular systematics.

THE PHYLOGENETIC HANDBOOK

A PRACTICAL APPROACH TO PHYLOGENETIC ANALYSIS AND HYPOTHESIS TESTING

Cambridge University Press A broad, hands on guide with detailed explanations of current methodology, relevant exercises and popular software tools.

PHYLOGENETICS

THEORY AND PRACTICE OF PHYLOGENETIC SYSTEMATICS

John Wiley & Sons 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.

SYSTEMATIC BOTANY OF FLOWERING PLANTS

A NEW PHYTOGENETIC APPROACH OF THE ANGIOSPERMS OF THE TEMPERATE AND TROPICAL REGIONS

CRC Press The principle objective of this book is to describe a range of families of flowering plants in a sequence corresponding to current phylogenetic classification based on the most recent results of molecular systematics. The selection of families is large and comprises families of temperate European flora as well as tropical flora. They are integrated in their respective orders and keys are given to help the reader recognize them. Each family is richly illustrated, the identifying characters being shown as clearly as possible. A glossary complements the overall didactic qualities of this reference.

PLANT SYSTEMATICS

AN INTERGRATED APPROACH, THIRD EDITION

CRC Press 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.

BABOQUIVARI MOUNTAIN PLANTS

IDENTIFICATION, ECOLOGY, AND ETHNOBOTANY

University of Arizona Press The Baboquivari Mountains, long considered to be a sacred space by the Tohono OÕodham people who are native to the area, are the westernmost of the so-called Sky Islands. The mountains form the border between the floristic regions of Chihuahua and Sonora. This encyclopedic work describes the flora of this unique area in detail. It includes descriptions, identifications, ecology, and extensive etymologies of plant names in European and indigenous languages. Daniel Austin also describes pollination biology and seed dispersal and explains how plants in the area have been used by humans, beginning with Native Americans. The term Ôsky islandÓ was first used by Weldon Heald in 1967 to describe mountain ranges that are separated from each other by valleys of grassland or desert. The valleys create barriers to the spread of plant species in a way that is

similar to the separation of islands in an ocean. The 70,000-square-mile Sky Islands region of southeastern Arizona, southwestern New Mexico, and northwestern Mexico is of particular interest to botanists because of its striking diversity of plant species and habitats. With more than 3,000 species of plants, the region offers a surprising range of tropical and temperate zones. Although others have written about the region, this is the first book to focus exclusively on the plant life of the Baboquivari Mountains. The book offers an introduction to the history of the region, along with a discussion of human influences, and includes a useful appendix that lists all of the plants known to be growing in the Baboquivari Mountain chain.

PLANT SYSTEMATICS

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FLOWERING PLANTS

Springer Science & Business Media Armen Takhtajan is among the greatest authorities in the world on the evolution of plants. This book culminates almost sixty years of the scientist's research of the origin and classification of the flowering plants. It presents a continuation of Dr. Takhtajan's earlier publications including "Systema Magnoliophytorum" (1987), (in Russian), and "Diversity and Classification of Flowering Plants" (1997), (in English). In his latest book, the author presents a concise and significantly revised system of plant classification ('Takhtajan system') based on the most recent studies in plant morphology, embryology, phytochemistry, cytology, molecular biology and palynology. Flowering plants are divided into two classes: class Magnoliopsida (or Dicotyledons) includes 8 subclasses, 126 orders, c. 440 families, almost 10,500 genera, and no less than 195,000 species; and class Liliopsida (or Monocotyledons) includes 4 subclasses, 31 orders, 120 families, more than 3,000 genera, and about 65,000 species.This book contains a detailed description of plant orders, and descriptive keys to plant families providing characteristic features of the families and their differences.

FLOWERING PLANTS. EUDICOTS

AQUIFOLIALES, BORAGINALES, BRUNIALES, DIPSACALES, ESCALLONIALES, GARRYALES, PARACRYPHIALES, SOLANALES (EXCEPT CONVOLVULACEAE), ICACINACEAE, METTENIUSACEAE, VAHLIACEAE

Springer This volume covers the orders Boraginales, Garryales and Solanales (except Convolvulaceae) of the Lamiids (Asterids I) as well as three unplaced families of that clade, i.e. Vahliaceae, Icacinaceae and Metteniusaceae, and the orders Aquifoliales, Escalloniales, Bruniales, Dipsacales and Paracryphiales of the Campanulids (Asterids II). It is the first of two final volumes to (almost) complete the treatment of the Asterids, which started with Vol. VI (Cornales, Ericales, 2004) and continued with Vol. VII (Lamiales, 2004) and Vol. VIII (Asterales, 2007). The present volume provides descriptions for 35 families and altogether 340 genera, including three genera of somewhat uncertain family affiliation. It provides identification keys for families within orders and for all genera within families, and also discusses probable phylogenetic relationships. The wealth of information contained in this volume makes it an indispensable source for all those working in pure and applied plant sciences.

PHYLONYMS

A COMPANION TO THE PHYLOCODE

CRC Press Phylonyms is an implementation of PhyloCode, which is a set of principles, rules, and recommendations governing phylogenetic nomenclature. Nearly 300 clades - lineages of organisms - are defined by reference to hypotheses of phylogenetic history rather than by taxonomic ranks and types. This volume will document the Real World uses of PhyloCode and will govern and apply to the names of clades, while species names will still be governed by traditional codes. Key Features Provides clear regulations for implementing new guidelines for naming lineages of organisms incorporates expressly evolutionary and phylogenetic principles Works with existing codes of nomenclature Eliminates the reliance on rank-based classification in favor of phylogenetic relationships Related Titles: Rieppel, O. Phylogenetic Systematics: Haeckel to Hennig (ISBN 978-1-4987-5488-0) Cantino, P. D. and de Queiroz, K. International Code of Phylogenetic Nomenclature (PhyloCode) (ISBN 978-1-138-33282-9).

DEMOGRAPHIC METHODS ACROSS THE TREE OF LIFE

Oxford University Press Demography is everywhere in our lives: from birth to death. Indeed, the universal currencies of survival, development, reproduction, and recruitment shape the performance of all species, from microbes to humans. The number of techniques for demographic data acquisition and analyses across the entire tree of life (microbes, fungi, plants, and animals) has drastically increased in recent decades. These developments have been partially facilitated by the advent of technologies such as GIS and drones, as well as analytical methods including Bayesian statistics and high-throughput molecular analyses. However, despite the universality of demography and the significant research potential that could emerge from unifying: (i) questions across taxa, (ii) data collection protocols, and (iii) analytical tools, demographic methods to date have remained taxonomically siloed and methodologically disintegrated. This is the first book to attempt a truly unified approach to demography and population ecology in order to address a wide range of questions in ecology, evolution, and conservation biology across the entire spectrum of life. This novel book provides the reader with the fundamentals of data collection, model construction, analyses, and interpretation across a wide repertoire of demographic techniques and protocols. It introduces the novice demographer to a broad range of demographic methods, including abundance-based models, life tables, matrix population models, integral projection models, integrated population models, individual based models, and more. Through the careful integration of data collection methods, analytical approaches, and applications, clearly guided throughout with fully reproducible R scripts, the book provides an up-to-date and authoritative overview of the most popular and effective demographic tools. Demographic Methods across the Tree of Life is aimed at graduate students and professional researchers in the fields of demography, ecology, animal behaviour, genetics, evolutionary biology, mathematical biology, and wildlife management.

MONOCOTS: SYSTEMATICS AND EVOLUTION

SYSTEMATICS AND EVOLUTION

CSIRO PUBLISHING Monocots: Systematics and Evolution presents leading work from around the world on non-grass monocotyledons and includes reviews and current research into their comparative biology, phylogeny and classification. The papers are based on presentations at the Second International Conference on the Comparative Biology of the Monocotyledons, Monocots II, held in Sydney, Australia in late 1998. Many were subsequently updated or extended to take into account new information. All 72 papers have been peer-reviewed.

PLANT SYSTEMATICS

THE ORIGIN, INTERPRETATION, AND ORDERING OF PLANT BIODIVERSITY

Deals with biodiversity from evolution and interpretation of evolution as well as taxonomy. The relationships of Plant Systematics to Biodiversity is in the conclusion has an index to Taxa Index to subjects

ISSUES IN LIFE SCIENCES: BOTANY AND PLANT BIOLOGY RESEARCH: 2011 EDITION

ScholarlyEditions Issues in Life Sciences: Botany and Plant Biology Research: 2011 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Life Sciences—Botany and Plant Biology Research. The editors have built Issues in Life Sciences: Botany and Plant Biology Research: 2011 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Life Sciences—Botany and Plant Biology Research in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Life Sciences: Botany and Plant Biology Research: 2011 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written,

assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

THE YEASTS

A TAXONOMIC STUDY

Elsevier The Yeasts: A Taxonomic Study is a three-volume book that covers the taxonomic aspect of yeasts. The main goal of this book is to provide important information about the identification of yeasts. It also discusses the growth tests that can be used to identify different species of yeasts, and it examines how the more important species of yeasts provide information for the selection of species needed for biotechnology. • Volume 1 discusses the identification, classification and importance of yeasts in the field of biotechnology. • Volume 2 focuses on the identification and classification of ascomycetous yeasts. • Volume 3 deals with the identification and classification of basidiomycetous yeasts, along with the genus Prototheca. High-quality photomicrographs and line drawings Detailed phylogenetic trees Up-to-date, clearly presented yeast taxonomy and systematic, easy-to-use reference sequence accession numbers to allow for correct identification

BIODIVERSITY CONSERVATION AND PHYLOGENETIC SYSTEMATICS

PRESERVING OUR EVOLUTIONARY HERITAGE IN AN EXTINCTION CRISIS

Springer This book is about phylogenetic diversity as an approach to reduce biodiversity losses in this period of mass extinction. Chapters in the first section deal with questions such as the way we value phylogenetic diversity among other criteria for biodiversity conservation; the choice of measures; the loss of phylogenetic diversity with extinction; the importance of organisms that are deeply branched in the tree of life, and the role of relict species. The second section is composed by contributions exploring methodological aspects, such as how to deal with abundance, sampling effort, or conflicting trees in analysis of phylogenetic diversity. The last section is devoted to applications, showing how phylogenetic diversity can be integrated in systematic conservation planning, in EDGE and HEDGE evaluations. This wide coverage makes the book a reference for academics, policy makers and stakeholders dealing with biodiversity conservation.

UTILIZATION OF PHYLOGENETIC SYSTEMATICS, MOLECULAR EVOLUTION, AND COMPARATIVE TRANSCRIPTOMICS TO ADDRESS ASPECTS OF NEMATODE AND BACTERIAL EVOLUTION

Both insect parasitic/entomopathogenic nematodes and plant parasitic nematodes are of great economic importance. Insect parasitic/entomopathogenic nematodes provide an environmentally safe and effective method to control numerous insect pests worldwide. Alternatively, plant parasitic nematodes cause billions of dollars in crop loss worldwide. Because of these impacts, it is important to understand how these nematodes evolve, and, in the case of entomopathogenic nematodes, how their bacterial symbionts evolve. This dissertation contains six chapters. Chapter one is a review of DNA markers and their use in the phylogenetic systematics of entomopathogenetic and insect-parasitic nematodes as well as a review of phylogenetic, co-phylogenetic and population genetic methodologies. Chapter two characterizes positive destabilizing selection on the luxA gene of bioluminescent bacteria. Our data suggests that bacterial ecology and environmental osmolarity are likely driving the evolution of the luxA gene in bioluminescent bacteria. Chapter 3 examines relationships among bacteria within the genus Photorhabdus. Our analyses produced the most robust phylogenetic hypothesis to date for the genus Photorhabdus. Additionally, we show that glnA is particularly useful in resolving specific and intra-specific relationships poorly resolved in other studies. We conclude that P. asymbiotica is the sister group to P. luminescens and that the new strains HIT and JUN should be given a new group designation within P. asymbiotica. Chapter 4 characterizes the morphology of the head and feeding apparatus of fungal feeding and insect infective female morphs of the nematode Deladenus siricidicola using scanning electron microscopy. Results showed dramatic differences in head, face, and stylet morphology between the two D. siricidicola female morphs that were not detected in previous studies using only light microscopy. Chapter five utilizes comparative transciptomics to identify putative plant and insect parasitism genes in the nematode Deladenus siricidicola. Results from this study provide the first transcriptomic characterization for the nematode Deladenus siricidicola and for an insect parasitic member of the nematode infraorder Tylenchomorpha. Additionally, numerous plant parasitism gene homologues were discovered in both D. siricidicola libraries suggesting that this nematode has co-opted these plant parasitism genes for other functions. Chapter six utilizes a phylogenomic approach to estimate the phylogeny of the nematode infraorder Tylenchomorpha.

BIOLOGICAL SYSTEMATICS: THE STATE OF THE ART

Springer Biological Systematics provides a critical overview of the state of the art in biological systematics and presents a broad perspective of the subject, covering its history, theory and practice. The most improtant current theoretical issues are reviewed with the emphasis on the species concept, the methodology of phylogenetic reconstruction and contrasting views on the relationships between phylogenetics and systematics. A large part of the book is devoted to a review of the current state of taxonomy of the main groups, concluding with a discussion of evolutionary patterns.

PLANT MOLECULAR EVOLUTION

Springer Science & Business Media Plant molecular biology has produced an ever-increasing flood of data about genes and genomes. Evolutionary biology and systematics provides the context for synthesizing this information. This book brings together contributions from evolutionary biologists, systematists, developmental geneticists, biochemists, and others working on diverse aspects of plant biology whose work touches to varying degrees on plant molecular evolution. The book is organized in three parts, the first of which introduces broad topics in evolutionary biology and summarizes advances in plant molecular phylogenetics, with emphasis on model plant systems. The second segment presents a series of case studies of gene family evolution, while the third gives overviews of the evolution of important plant processes such as disease resistance, nodulation, hybridization, transposable elements and genome evolution, and polyploidy.

EVOLUTION AND DIVERSIFICATION OF LAND PLANTS

Springer Science & Business Media A modern approach to understanding the evolution and diversification of land plants, one of the most exciting areas of plant systematics. It consists of three sections - origin and diversification of primitive land plants; origin and diversification of angiosperms; speciation and mechanisms of diversification - each section corresponding to a major area in plant evolution. In each case, data from molecular, morphological, and paleontological approaches are presented, backed by recent progress and new findings, together with proposals for future research. A guide to the latest in plant systematics, heightening awareness of prospective future problems.

MOLECULAR SYSTEMATICS OF PLANTS

Springer Science & Business Media The application of molecular techniques is rapidly transforming the study of plant systematics. The precision they offer enables researchers to classify plants that have not been subject to rigorous classification before and thus allows them to obtain a clearer picture of evolutionary relationships. Plant Molecular Systematics is arranged both conceptually and phylogenetically to accommodate the interests not only of general systematists, but also those of people interested in a particular plant family. The first part discusses molecular sequencing; the second reviews restriction site analysis and the sequencing of mitochondrial DNA. A third section details the analysis of ribosomal DNA and chloroplast DNA. The following section introduces model studies involving well-studied families such as the Onagraceae, Compositae and Leguminosae. The book concludes with a section addressing theoretical topics such as data analysis and the question of morphological vs. molecular data.

CLADISTICS

Cambridge University Press 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.

AUSTRALIAN SYSTEMATIC BOTANY

SPECIES, SPECIES CONCEPTS AND PRIMATE EVOLUTION

Springer Science & Business Media A world of categones devmd of spirit waits for life to return. Saul Bellow, Humboldt's Gift The stock-in-trade of communicating hypotheses about the historical path of evolution is a graphical representation called a phylogenetic tree. In most such graphics, pairs of branches diverge from other branches, successively marching across abstract time toward the present. To each branch is tied a tag with a name, a binominal symbol that functions as does the name given to an individual human being. On phylogenetic trees the names symbolize species. What exactly do these names signify? What kind of information is communicated when we claim to have knowledge of the following types? "Tetonius mathewzi was ancestral to Pseudotetonius ambiguus. " "The sample of fossils attributed to Homo habzlis is too variable to contain only one species. " "Interbreeding populations of savanna baboons all belong to Papio anubis. " "Hylobates lar and H. pileatus interbreed in zones of geographic overlap. " While there is nearly universal agreement that the notion of the speczes is fundamental to our understanding of how evolution works, there is a very wide range of opinion on the conceptual content and meaning of such particular statements regarding species. This is because, oddly enough, evolutionary biolo gists are quite far from agreement on what a species is, how it attains this status, and what role it plays in evolution over the long term.

DOCUMENTING DOMESTICATION

NEW GENETIC AND ARCHAEOLOGICAL PARADIGMS

Univ of California Press "A genetic revolution has transformed the study of the domestication of plants and animals. Documenting Domestication presents the best research and resolves issues that had been intractable in the past."—Richard I. Ford, University of Michigan

MOLECULAR SYSTEMATICS OF PLANTS

Springer Science & Business Media The application of molecular techniques is rapidly transforming the study of plant systematics. The precision they offer enables researchers to classify plants that have not been subject to rigorous classification before and thus allows them to obtain a clearer picture of evolutionary relationships. Plant Molecular Systematics is arranged both conceptually and phylogenetically to accommodate the interests not only of general systematists, but also those of people interested in a particular plant family. The first part discusses molecular sequencing; the second reviews restriction site analysis and the sequencing of mitochondrial DNA. A third section details the analysis of ribosomal DNA and chloroplast DNA. The following section introduces model studies involving well-studied families such as the Onagraceae, Compositae and Leguminosae. The book concludes with a section addressing theoretical topics such as data analysis and the question of morphological vs. molecular data.

TRANSPIRATION BY CHAPARRAL AND ITS EFFECT UPON THE TEMPERATURE OF LEAVES

PHYLOGENOMICS

A PRIMER

CRC Press Phylogenomics: A Primer, Second Edition is for advanced undergraduate and graduate biology students studying molecular biology, comparative biology, evolution, genomics, and biodiversity. This book explains the essential concepts underlying the storage and manipulation of genomics level data, construction of phylogenetic trees, population genetics, natural selection, the tree of life, DNA barcoding, and metagenomics. The inclusion of problem-solving exercises in each chapter provides students with a solid grasp of the important molecular and evolutionary questions facing modern biologists as well as the tools needed to answer them.

FOUNDATIONS OF SYSTEMATICS AND BIOGEOGRAPHY

Springer Science & Business Media Anyone interested in comparative biology or the history of science will find this myth-busting work genuinely fascinating. It draws attention to the seminal studies and important advances that have shaped systematic and biogeographic thinking. It traces concepts in homology and classification from the 19th century to the present through the provision of a unique anthology of scientific writings from Goethe, Agassiz, Owen, Naef, Zangerl and Nelson, among others.

PLANT BIOSYSTEMATICS

Elsevier Plant Biosystematics is a compendium of papers from a symposium titled "Plant Biosystematics: Forty Years Later" held in Montreal in July 1983. This collection reviews the current field of biosystematics, particularly the evolution of natural biota, and how plant biosystematics can contribute to the welfare of humans. One paper reviews biosystematics, compares new approaches, and discusses the latest trend in comparative, molecular evolution of genes. One author discusses the cytology and biosystematics concerning the discontinuities and genetic independence occurring in the evolutionary process. Another author discusses chromosome pairing in species and hybrids that includes models of chromosome pairing in diploids. The text also describes chromosome banding and biosystematics, as well as the problems of chromosome banding that should be addressed to in future research. With estimates of the number of species being threatened with extinction numbering around 20,000 one paper address the issue of conservation and biosystematics. The author suggests that more biological information should be published to avoid duplication of effort, and possibly drive scientists to have their views more widely felt. Agriculturists, botanists, conservationists, environmentalists, and researchers in the field of botany, conservation, and plant genealogy will find this book valuable.