

Angiosperm Phylogeny And Evolution

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Angiosperm Phylogeny And Evolution:

Phylogeny and Evolution of the Angiosperms Douglas Soltis, Pamela Soltis, Peter Endress, Mark Chase, Steven Manchester, Walter Judd, Lucas Majure, Evgeny Mavrodiev, 2018-01-24 Although they are relative latecomers on the evolutionary scene having emerged only 135 170 million years ago angiosperms or flowering plants are the most diverse and species rich group of seed producing land plants comprising more than 15 000 genera and over 350 000 species Not only are they a model group for studying the patterns and processes of evolutionary diversification they also play major roles in our economy diet and courtship rituals producing our fruits legumes and grains not to mention the flowers in our Valentine s bouguets They are also crucial ecologically dominating most terrestrial and some aguatic landscapes This fully revised edition of Phylogeny and Evolution of the Angiosperms provides an up to date comprehensive overview of the evolution of and relationships among these vital plants Incorporating molecular phylogenetics with morphological chemical developmental and paleobotanical data as well as presenting a more detailed account of early angiosperm fossils and important fossil information for each evolutionary branch of the angiosperms the new edition integrates fossil evidence into a robust phylogenetic framework Featuring a wealth of new color images this highly synthetic work further reevaluates long held evolutionary hypotheses related to flowering plants and will be an essential reference for botanists plant systematists and evolutionary biologists alike Flowering Plants Armen Takhtajan, 2009-07-06 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 **Early** Flowers and Angiosperm Evolution Else Marie Friis, Peter R. Crane, Kaj Raunsgaard Pedersen, 2011-08-18 The recent discovery of diverse fossil flowers and floral organs in Cretaceous strata has revealed astonishing details about the structural and systematic diversity of early angiosperms Exploring the rich fossil record that has accumulated over the last three decades this is a unique study of the evolutionary history of flowering plants from their earliest phases in obscurity to their dominance in modern vegetation The discussion provides comprehensive biological and geological background information before moving on to summarise the fossil record in detail Including previously unpublished results based on research into

Early and Late Cretaceous fossil floras from Europe and North America the authors draw on direct palaeontological evidence of the pattern of angiosperm evolution through time Synthesising palaeobotanical data with information from living plants this unique book explores the latest research in the field highlighting connections with phylogenetic systematics structure and the biology of extant angiosperms Phylogeny and Evolution of Angiosperms, 2005 Flowering Plant Origin, Evolution & Phylogeny David W. Taylor, Leo Hickey, 2007-08-28 Contributors ix Chapter Introduction The Challenge of Flowering Plant History David Winship Taylor and Leo J Hickey Chapter 2 A Survey of Reticulate Venation Among Fossil and Living Land Plants Mary Louise Trivett and Kathleen B Pigg Chapter 3 A New Gnetophyte from the Late Carnian Late Triassic of Texas and its Bearing on the Origin of the Angiosperm Carpel and Stamen 32 Bruce Cornet Chapter 4 Wood Anatomy of Primitive Angiosperms New Perspectives and Syntheses 68 Sherwin Carlquist Chapter 5 Evidence for the Earliest Stage of giosperm Pollen Evolution A Paleoeguatodal Section from Israel 91 Gilbert J Brenner Chapter 6 The Origin and Evolution of the Angiosperm Carpel 116 David Winship Taylor and Gretchen Kirchner Chapter Floral Structure Development and Relationships of Paleoherbs Saruma Cabomba Lactoris and Selected Piperales 141 Shirley Tucker and Andrew Douglas Chapter 8 Origin of the Angiosperm Flower 176 Leo J Hickey and David Winship Taylor Chapter Evidence for and Implications of an Herbaceous Origin for Angiosperms 232 David Winship Taylor and Leo Z Hickey Chapter Comparison of Alternative Hypotheses for the Origin of the Angiosperms 267 Henry Loconte 10 9 W C 7 1 CONTENTS vi Contents Chapter The Least Specialized Angiosperms 286 Robert F Thorne Chapter Molecular Phylogenies and the Diversification of the Angiosperms 314 Kenneth J Sytsma and David A Baum 341 References Appendix Stratigraphic Time Scale 387 Index 12 11 Genome Diversity Volume 2 Johann Greilhuber, Jaroslav Dolezel, Jonathan Wendel, 2012-11-13 This second of two volumes on Plant Genome Diversity provides in 20 chapters insights into the structural evolution of plant genomes with all its variations Starting with an outline of plant phylogeny and its reconstruction the second part of the volume describes the architecture and dynamics of the plant cell nucleus the third examines the evolution and diversity of the karyotype in various lineages including angiosperms gymnosperms and monilophytes The fourth part presents the mechanisms of polyploidization and its biological consequences and significance for land plant evolution. The fifth part deals with genome size evolution and its biological significance Together with Volume I this comprehensive book on the plant genome is intended for students and professionals in all fields of plant science offering as it does a convenient entry into a burgeoning literature in a fast moving field **Early Events in Monocot Evolution** Paul Wilkin, Simon J. Mayo, 2013-05-30 Leading scientists in the field trace the evolution of the one of the most ancient major branches of flowering plants Molecular Systematics of Plants II Pamela Soltis, J.J. Doyle, 2012-12-06 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 Developmental Genetics of the Flower ,2006-09-29 Current major interests in this area include the study of higher level phylogenetic relationships and character evolution in the angiosperms floral evolution the genetic basis of key floral differences in basal angiosperms the genetic and genomic consequences of polyploid speciation conservation genetics of rare plant species and phylogeography Developmental Genetics of the Flower provides a series of papers focused on the developmental genetics of flowering as well as the genetic control of the timing of flowering Investigation of speciational mechanisms evolutionary relationships and character evolution in flowering plants and land plants utilizing a variety of experimental approaches are discussed The chapters are excellent reviews of the current fast moving area of research Provides a brief review of genes known to regulate flower development Articles emphasize the classic ABC model of flower development

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