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Numerical Taxonomy Kendall Hunt Publishing Company
Looks at the design and mathematical principles for over ninety pasta shapes through a classification tree based on physical characteristics and profiles that include descriptions, photographs, formulas, and cooking times for each pasta shape.

Insect Phylogeny University of Illinois Press
Almost all evolutionary biologists, indeed all biologists, use particular features to study life. These characteristics or features used by evolutionary biologists are used in a particular way to unravel a tangled evolutionary history, document the rate of evolutionary change, or as evidence of biodiversity. "Characters" are the "data" of evolutionary biology and they can be employed differently in research providing both opportunities and limitations. The Character Concept in Evolutionary Biology is about characters, their use, how different sorts of characters are limited, and what are appropriate methods for character analysis. Leading evolutionary biologists from around the world are contributors to this authoritative review of the "character concept." Because characters and the conception of characters are central to all studies of evolution, and because evolution is the central organizing principle of biology, this book will appeal to a wide cross-section of biologists. Focuses upon "characters" -- fundamental data for evolutionary biology Covers the myriad ways in which characters are defined, described, and distinguished Includes historical, morphological, molecular, behavioral, and philosophical perspectives

Popular Music in the Nostalgia Video Game Basic Books
Birds are a commonly acknowledged indicator of biodiversity. This book presents an indigenous perspective on the effects of traditional activities on birds. The book puts together different approaches and perspectives to study bird-flower interaction networks, reinforcing the idea of communities displaying high connectedness.

Coevolution of Animals and Plants Elsevier
This new publication in the Models and Modeling in Science Education series synthesizes a wealth of international research on using multiple representations in biology education and aims for a coherent framework in using them to improve higher-order learning. Addressing a major gap in the literature, the volume proposes a theoretical model for advancing biology educators' notions of how multiple external representations (MERs) such as analogies, metaphors and visualizations can best be harnessed for improving teaching and learning in biology at all pedagogical levels. The content tackles the conceptual and linguistic difficulties of learning biology at each level—macro, micro, sub-micro, and symbolic, illustrating how MERs can be used in teaching across these levels and in various combinations, as well as in differing contexts and topic areas. The strategies outlined will help students' reasoning and problem-solving skills, enhance their ability to construct mental models and internal representations, and, ultimately, will assist in increasing public understanding of biology-related issues, a key goal in today's world of pressing concerns over societal problems about food, environment, energy, and health. The book concludes by highlighting important aspects of research in biological education in the post-genomic, information age.

Draconomicon Oxford University Press
Inferring PhylogeniesSinauer Associates Incorporated

Philosophia Botanica Univ of California Press
Tropical ecosystems house a significant proportion of global biodiversity. To understand how these ecosystems function we need to appreciate not only what plants, animals and microbes they contain, but also how they interact with each other. This volume, first published in 2005, synthesises the state of knowledge in this area, with chapters providing reviews or case studies drawn from research conducted in both Old and New World tropics and including biotic interactions among taxa at all trophic levels. In most chapters plants (typically trees) are the starting point, but, taken together, the chapters consider interactions of plants with other plants, with micro-organisms and with animals, and the inter-relationships of human-induced disturbance with interactions among species. An underlying theme of the volume is the attempt to understand the maintenance of high diversity in tropical regions, which remains one of the most significant unexplained observations in ecological studies.

What Evolution Is Cambridge University Press
This book looks at the uses of popular music in the newly-redefined category of the nostalgia game, exploring the relationship between video games, popular music, nostalgia, and socio-cultural contexts. History, gender, race, and media all make significant appearances in this interdisciplinary work, as it explores what some of the most critically acclaimed games of the past two decades (including both AAA titles like Fallout and BioShock, and more cult releases like Gone Home and Evoland) tell us about our relationship to our past and our future. Appropriated music is the common thread throughout these chapters, engaging these broader discourses in heterogeneous ways. This volume offers new perspectives on how the intersection between popular music, nostalgia, and video games, can be examined, revealing much about our relationship to the past and our hopes for the future.

Return to the Sea Springer Science & Business Media
Grade level: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, p, e, i, s, t.

Fossil Horses Macmillan Higher Education
The evolutionary history of life includes two primary components: phylogeny and timescale. Phylogeny refers to the branching order (relationships) of species or other taxa within a group and is crucial for understanding the inheritance of traits and for erecting classifications. However, a timescale is equally important because it provides a way to compare phylogeny directly with the evolution of other organisms and with planetary history such as geology, climate, extraterrestrialimpacts, and other features.The Timetree of Life is the first reference book to synthesize the wealth of information relating to the temporal component of phylogenetic trees. In the past, biologists have relied exclusively upon the fossil record to infer an evolutionary timescale. However, recent revolutionary advances in molecular biology have made it possible to not only estimate the relationships of many groups of organisms, but also to estimate their times of divergence with molecular clocks. The routineestimation and utilization of these so-called 'time-trees' could add exciting new dimensions to biology including enhanced opportunities to integrate large molecular data sets with fossil and biogeographic evidence (and thereby foster greater communication between molecular and traditional systematists). Theycould help estimate not only ancestral character states but also evolutionary rates in numerous categories of organismal phenotype; establish more reliable associations between causal historical processes and biological outcomes; develop a universally standardized scheme for biological classifications; and generally promote novel avenues of thought in many arenas of comparative evolutionary biology.This authoritative reference work brings together, for the first time, experts on all major groups of organisms to assemble a timetree of life. The result is a comprehensive resource on evolutionary history which will be an indispensable reference for scientists, educators, and students in the life sciences, earth sciences, and molecular biology. For each major group of organism, a representative is illustrated and a timetree of families and higher taxonomic groups is shown. Basic aspects ofthe evolutionary history of the group, the fossil record, and competing hypotheses of relationships are discussed. Details of the divergence times are presented for each node in the timetree, and primary literature references are included. The book is complemented by an online database(www.timetree.net) which allows researchers to both deposit and retrieve data.

Pasta by Design John Wiley & Sons
Biology of Termites, a Modern Synthesis brings together the major advances in termite biology, phylogenetics, social evolution and biogeography. In this new volume, David Bignell, Yves Roisin and Nathan Lo have brought together leading experts on termite taxonomy, behaviour, genetics, caste differentiation, physiology, microbiology, mound architecture, biogeography and control. Very strong evolutionary and developmental themes run through the individual chapters, fed by new data streams from molecular sequencing, and for the first time it is possible to compare the social organisation of termites with that of the social Hymenoptera, focusing on caste determination, population genetics, cooperative behaviour, nest hygiene and symbioses with microorganisms. New chapters have been added on termite pheromones, termites as pests of agriculture and on destructive invasive species.

Darwin et ses pr é curseurs fran ç ais Springer Science & Business Media
This book covers the current state of thinking and what it means to have a framework of representational competence and how such theory can be used to shape our understanding of the use of representations in science education, assessment, and instruction. Currently, there is not a consensus in science education regarding representational competence as a unified theoretical framework. There are multiple theories of representational competence in the literature that use differing perspectives on what competence means and entails. Furthermore, dependent largely on the discipline, language discrepancies cause a potential barrier for merging ideas and pushing forward in this area. While a single unified theory may not be a realistic goal, there needs to be strides taken toward working as a unified research community to better investigate and interpret representational competence. An objective of this book is to initiate thinking about a representational competence theoretical framework across science educators, learning scientists, practitioners and scientists. As such, we have divided the chapters into three major themes to help push our thinking forward: presenting current thinking about representational competence in science education, assessing representational competence within learners, and using our understandings to structure instruction.

The Mortgage Lender's Guide to the 2015 Truth-in-Lending Act and RESPA Disclosure Integration Rule LexisNexis
This extensive, three-volume handbook, intensively updated and enlarged, is a superb new resource for students, researchers, and practitioners in paleoanthropology. A baseline storehouse covering the full extent of current knowledge, the volume is a multilayered, comprehensive companion of inestimable value to students, academics, and working professionals alike.

Understanding by Design Handbook University of Texas Press
Solomon, Martin, Martin and Berg's BIOLOGY--often described as the best majors' text for learning Biology--is also a complete teaching program. The integrated, inquiry-based learning system guides students through every chapter with key concepts at the beginning of each chapter and learning objectives for each section. End-of-section Checkpoint questions encourage students to review key points before moving on. A chapter summary further reinforces learning objectives, followed by an opportunity for students to test their understanding. The eleventh edition offers expanded integration of the text's five guiding themes of Biology--the evolution of life, the transmission of biological information, the flow of energy through living systems, interactions among biological systems and the inter-relationship of structure and function. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Phylogenetics Columbia University 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.

Evolution OUP Oxford
Baum and Smith, both professors evolutionary biology and researchers in the field of systematics, present this highly accessible introduction to phylogenetics and its importance in modern biology. Ever since Darwin, the evolutionary histories of organisms have been portrayed in the form of branching trees or "phylogenies." However, the broad significance of the phylogenetic trees has come to be appreciated only quite recently. Phylogenetics has myriad applications in biology, from discovering the features present in ancestral organisms, to finding the sources of invasive species and infectious diseases, to identifying our closest living (and extinct) hominid relatives. Taking a conceptual approach, Tree Thinking introduces readers to the interpretation of phylogenetic trees, how these trees can be reconstructed, and how they can be used to answer biological questions. Examples and vivid metaphors are incorporated throughout, and each chapter concludes with a set of problems, valuable for both students and teachers. Tree Thinking is must-have textbook for any student seeking a solid foundation in this fundamental area of evolutionary biology.

Investigating Evolutionary Biology in the Laboratory Assn for Supervision & Curriculum
It has long been recognized that plants and animals profoundly affect one another ' s characteristics during the course of evolution. However, the importance of coevolution as a dynamic process involving such diverse factors as chemical communication, population structure and dynamics, energetics, and the evolution, structure, and functioning of ecosystems has been widely recognized for a comparatively short time. Coevolution represents a point of view about the structure of nature that only began to be fully explored in the late twentieth century. The papers presented here herald its emergence as an important and promising field of biological research. Coevolution of Animals and Plants is the first book to focus on the dynamic aspects of animal-plant coevolution. It covers, as broadly as possible, all the ways in which plants interact with animals. Thus, it includes discussions of leaf-feeding animals and their impact on plant evolution as well as of predator-prey relationships involving the seeds of angiosperms. Several papers deal with the most familiar aspect of mutualistic plant-animal interactions—pollination relationships. The interactions of orchids and bees, ants and plants, and butterflies and plants are discussed. One article provides a fascinating example of more indirect relationships centered around the role of carotenoids, which are produced by plants but play a fundamental part in the visual systems of both plants and animals. Coevolution of Animals and Plants provides a general conceptual framework for studies on animal-plant interaction. The papers are written from a theoretical, rather than a speculative, standpoint, stressing patterns that can be applied in a broader sense to relationships within ecosystems. Contributors to the volume include Paul Feeny, Miriam Rothschild, Christopher Smith, Brian Hocking, Lawrence Gilbert, Calaway Dodson, Herbert Baker, Bernd Heinrich, Doyle McKey, and Gordon Frankie.

Cambridge University Press
Methodological introduction; Localities for palaeozoic and mesozoic insects; The phyloggenetic development of the insecta; Concluding remarks and prospects for the future.

The Character Concept in Evolutionary Biology Franklin Classics Trade Press
Phylogenies, or evolutionary trees, are the basic structures necessary to think about and analyze differences between species. Statistical, computational, and algorithmic work in this field has been ongoing for four decades now, and there have been great advances in understanding. Yet no book has

summarized this work. Inferring Phylogenies does just that in a single, compact volume. Phylogenies are inferred with various kinds of data. This book concentrates on some of the central ones: discretely coded characters, molecular sequences, gene frequencies, and quantitative traits. Also covered are restriction sites, RAPDs, and microsatellites.

Animal Skulls John Wiley & Sons

Is that white growth a coral? Is it an animal or a plant? What is the difference between a shrimp and a prawn? These and many other common questions reveal our lack of familiarity with the seas. For many, their first experience of marine environments is amazement at the bewildering variety of life in the oceans. Sea anemones and corals, sea stars and sea urchins, octopuses and squids are just a few marine creatures that we never encounter on land or in fresh water. Many other creatures are even less familiar, and it is often difficult for those interested in marine life to learn more about them. The examples selected here focus on Victoria and on southern Australia. The emphasis is on animals and plants that are commonly seen by divers, snorkellers, beachcombers and by anyone with an interest in marine life.

Statistical Analysis of Gene Expression Microarray Data Stackpole Books

A popular entry-level guide into the use of R as a statistical programming and data management language for students, post-docs, and seasoned researchers now in a new revised edition, incorporating the updates in the R environment, and also adding guidance on the use of more complex statistical analyses and tools.