australian beetles volume 1 morphology classification and keys australian beetles series

#Australian beetles #beetle morphology #insect classification #entomology keys #Australian insect guide

Explore the intricate world of Australian beetles with Volume 1 of this definitive series. This essential guide covers the detailed morphology, comprehensive classification, and practical identification keys for a wide array of Australian beetle species, making it an invaluable resource for entomologists and enthusiasts alike.

Australian Beetles Volume 1

Volume 1 in a three-volume series that represents a comprehensive treatment of the beetles of Australia.

Australian Beetles

Updates & expands Lawrence & Brittons out-of-print Australian Beetles, with improved keys to all beetle families found in Australia, expanded family diagnoses, modern classification & additional illustrations. Introduction to beetle morphology & anatomical terms clarify characters & terminology used in keys.

Australian Beetles Volume 2

This three-volume series represents a comprehensive treatment of the beetles of Australia, a relatively under-studied fauna that includes many unusual and unique lineages found nowhere else on Earth. Volume 2 contains 36 chapters, providing critical information and identification keys to the genera of the Australian beetle families included in suborders Archostemata, Myxophaga, Adephaga and several groups of Polyphaga (Scirtoidea, Hydrophiloidea, Scarabaeoidea, Buprestoidea and Tenebrionidae). Each chapter is richly illustrated in black and white drawings and photographs. The book also includes colour habitus figures for about 1000 Australian beetle genera and subgenera belonging to the families treated in this volume. This volume is a truly international collaborative effort, as the chapters have been written by 23 contributors from Australia, China, Czech Republic, Germany, Italy, Poland and USA.

Australian Ladybird Beetles (Coleoptera: Coccinellidae)

This book, by Australia's ladybird beetle specialist, Dr Adam Slipinski, illustrates Australia's diverse and fascinating ladybird beetle fauna — the commoner spotted species and the many others that are striped, glossy, and even very hairy. Most are predatory, but some are leaf feeders. This book reviews all 57 currently recognised genera of Australian Coccinellidae, recognising 260 valid described species,

and including some genera and species newly described here. All genera are diagnosed, described and illustrated and a key to their identification is provided. Larvae of 30 species are described, illustrated and keyed. Sets of colour and black and white plates display these often beautifully colourful beetles, and their key features. The book is a must for all people interested in Australia's beetle fauna, in biocontrol and in natural resource management. This book was originally published in hardback by Australian Biological Resources Study (ABRS) in 2007 and is now available in a digital format.

Ladybird Beetles of the Australo-Pacific Region

True ladybirds, classified in the tribe Coccinellini, are easily recognisable by their relatively large and shiny bodies and contrasting colour patterns. They are one of the most widely studied groups of beetles, being of economic importance and used as model organisms in biological and ecological research. Ladybird Beetles of the Australo-Pacific Region covers 22 genera and 95 valid species, including 12 new species, of ladybird beetles from Australia, New Guinea and the Pacific area. For each species, descriptions, illustrations and keys will assist with the correct identification of ladybirds from this large but practically unknown fauna. This book is a valuable contribution to the taxonomy of the ladybirds and to the knowledge of the biodiversity of this unique biogeographic region. It will be of use to entomologists, biologists, ecologists, quarantine officers, natural history museum curators, and students.

Fireflies, Glow-worms, and Lightning Bugs

This is the first comprehensive firefly guide for eastern and central North America ever published. It is written for all those who want to know more about the amazing world of lightning bugs and learn the secrets hidden in the flash patterns of the 75+ species found in the eastern and central U.S. and Canada. As an independent researcher working with numerous university teams, naturalist Lynn Frierson Faust, “The Lightning Bug Lady,” has spent decades tracking the behavior and researching the habitats of these fascinating creatures. Based on her twenty-five years of field work, this book is intended to increase understanding and appreciation of bioluminescent insects while igniting enthusiasm in a fun and informative way. Species accounts are coupled with historical background and literary epigraphs to engage and draw readers young and old into the world of these tiny sparklers. A chart documenting the flash patterns of the various species will aid in identification. Clear photos illustrate the insects’ distinguishing physical characteristics, while habitats, seasonality, and common names are provided in clear, easy-to-understand yet scientifically accurate language. The guide will be welcomed by everyone who wants to learn more about fireflies' and glow-worms' unique traits and about their fragile niche in the ecosystem. FEATURES Over 600 color photographsDetailed accounts and anatomical diagrams of 75+ species, as well as aids in distinguishing between similar speciesA first-of-its-kind flash-pattern chart that folds out on heavy-weight paper • Extensive scientific details written in an understandable and engaging wayColorful, common names—Twilight Bush Baby, Shadow Ghosts, and Snappy Syncs, and more—for easy species identification based on flash patternsTips on ideal sites and times of year for firefly watchingConservation-oriented approach

Rhythms of Insect Evolution

Documents morphology, taxonomy, phylogeny, evolutionary changes, and interactions of 23 orders of insects from the Middle Jurassic and Early Cretaceous faunas in Northern China This book showcases 23 different orders of insect fossils from the Mid Mesozoic period (165 to 125 Ma) that were discovered in Northeastern China. It covers not only their taxonomy and morphology, but also their potential implications on natural sciences, such as phylogeny, function, interaction, evolution, and ecology. It covers fossil sites; paleogeology; co-existing animals and plants in well-balanced eco-systems; insects in the spotlight; morphological evolution and functional development; and interactions of insects with co-existing plants, vertebrates, and other insects. The book also includes many elegant and beautiful photographs, line drawings, and 3-D reconstructions of fossilized and extant insects. Rhythms of Insect Evolution: Evidence from the Jurassic and Cretaceous in Northern China features chapter coverage of such insects as the: Ephemeroptera; Odonata; Blattaria; Isoptera; Orthoptera; Notoptera; Dermaptera; Chresmodidae; Phasmatodea; Plecoptera; Psocoptera; Homoptera; Heteroptera; Megaloptera; Raphidioptera; Neuroptera; Coleoptera; Hymenoptera Diptera; Mecoptera; Siphonaptera; Trichoptera and Lepidoptera. Combines academic natural science, popular science, and artistic presentation to illustrate rhythms of evolution for fossil insects from the Mid Mesozoic of Northern China Documents morphology, taxonomy, phylogeny, and evolutionary changes of 23 orders of insects from

the Middle Jurassic and Early Cretaceous faunas in Northern China Presents interactions of insects with plants, vertebrates, and other insects based on well-preserved fossil evidence Uses photos of extant insects and plants, fossil and amber specimens, line drawings, and 3-D computer-generated reconstruction artworks to give readers clear and enjoyable impressions of the scientific findings Introduces insect-related stories from western and Chinese culture in text or sidebars to give global readers broader exposures Rhythms of Insect Evolution: Evidence from the Jurassic and Cretaceous in Northern China will appeal to entomologists, evolutionists, paleontologists, paleoecologists, and natural scientists.

Hawkmoths of Australia

Hawkmoths are large charismatic insects with highly variable and colourful larvae. Some species are specialised in their habitat preferences, but others are widespread and often encountered in gardens. However, little is known about most species, and associating the adults with their larvae has previously been difficult or impossible. Hawkmoths of Australia allows identification of all of the Australian hawkmoths for the first time and treats species found on mainland Australia, Tasmania and all offshore islands within Australian limits. It presents previously undescribed life histories of nearly all species and provides a comprehensive account of hawkmoth biology, including new parasitoids and their hawkmoth hosts. Detailed drawings and photographs show the external and internal morphology of adults and immatures, and eggs, larval instars and pupa. Keys are provided for last instar larvae and pupae of the 71 species that the authors have reared. The book is concluded by a glossary, appendices to parasitoids and larval foodplants, an extensive reference list with bibliographical notes and a comprehensive index. The wealth of new information in this book makes it an essential reference for anyone interested in these moths. Hawkmoths of Australia is Volume 13 of the Monographs on Australian Lepidoptera Series.

Butterflies of Australia

This outstanding work is the ultimate guide for the identification of Australia’s butterflies. Nearly 400 species – all those currently recognised from Australia, plus those from surrounding islands – are represented, with all adults and some immature stages displayed in stunning colour sections. Introductory chapters cover the history of publications, classification, morphology, distribution, conservation and collection, together with a checklist of the butterfly fauna. The body of the text is arranged systematically, providing a wealth of information including description, variation, similar behaviour, distribution and habitat, and major literature references, giving a comprehensive summary of the present state of knowledge of these insects. Appendices provide details of those species recorded from Australian islands outside the Australian faunal subregion, those protected by legislation, the larval food plants, and the attendant ants. Extensive references, a glossary and an index of scientific and common names complete the work. Joint Winner of the 2001 Whitley Medal. Finalist Scholarly Reference section - The Australian Awards for Excellence in Educational Publishing 2001.

The Book of Beetles

More than one fifth of all known life forms on this planet are beetles. They are extraordinarily visually diverse: renowned British geneticist JBS Haldane, when asked what could be inferred about God from a study of His works, replied, An inordinate fondness for beetles. The Book of Beetles uncovers 600 significant examples, selected as part of a genome program. They are shown in glorious photographs, life size and in detail, alongside an engraving offering a side or open-winged view. Each profile includes a population distribution map, a table of essential information, and a commentary revealing notable characteristics, related species, and a diagnosis of the specimens importance in terms of taxonomy, rarity, behaviour, and scientific significance. Arranged taxonomically, this essential reference reveals the variety and importance of beetles for the first time.

Trogossitidae: A review of the beetle family, with a catalogue and keys

This monograph contents a review of the beetle family Trogossitidae (Cleroidea). The worldwide distributed family includes 55 recent and 10 extinct genera with about 600 species that are classified within 3 subfamilies and 12 tribes. In spite of fewer number of species, Trogossitidae is morphologically and ecologically extremely diversified. There are four-eyed predators that fly, run and even jump around swiftly in forest clearings to contrast with slow-moving, fungivorous species that dwell under the bark of old trees. There are also species that squat on flowers to feed on pollen grains as well as minute

creatures that have been extracted from forest litter. Brief descriptions of all genera as well as keys to all higher taxa are provided. All known species and subspecies are listed, together with complete taxonomic references back to 1910, the date of issue of their last catalogue. The work includes maps of distribution of all genera, colour photographs of generic representatives, SEM photographs and remarks on a phylogeny of particular taxa.

Australian Longhorn Beetles (Coleoptera: Cerambycidae) Volume 2

Longhorn Beetles — Cerambycidae are one of the most easily recognised groups of beetles, a family that worldwide encompasses over 33 000 species in 5200 genera. With over 1400 species classified in 300 genera, this is the sixth largest among 117 beetle families in Australia. These beetles often attack and kill living forest or orchard trees and develop in construction timber (like the European House borer, introduced to WA), causing serious damage. Virtually all Cerambycidae feed on living or dead plant tissues and play a significant role in all terrestrial environments where plants are found. Larvae often utilise damaged or dead trees for their development, and through feeding on rotten wood form an important element of the saproxylic fauna, speeding energy circulation in these habitats. Many species are listed as quarantine pests because of their destructive role to the timber industry. This second of three volumes on Australian Longhorn Beetles covers the taxonomy of genera of the Cerambycinae, with comments on natural history and morphology. One hundred and forty-two Cerambycinae genera are diagnosed and described, an illustrated key to their identification is provided, and images illustrate representatives of genera and of actual type specimens. A full listing of all Australian species with synonymies and bibliographic citations is also included.

Australian Longhorn Beetles (Coleoptera: Cerambycidae) Volume 1

Longhorn Beetles — Cerambycidae are one of the most easily recognised groups of beetles, a family that worldwide encompasses over 33,000 species in 5,200 genera. With over 1,400 species classified in 300 genera, this is the sixth largest among 117 beetle families in Australia. These beetles often attack and kill living forest or orchard trees and develop in construction timber (like European House borer, introduced to WA), causing serious damages. Virtually all Cerambycidae feed on living or dead plant tissues and play a significant role in all terrestrial environments where plants are found. Larvae often utilise damaged or dead trees for their development, and through feeding on rotten wood form an important element of the saproxylic fauna, speeding energy circulation in these habitats. Many species are listed as quarantine pests because of their destructive role to the timber industry. This volume provides a general introduction to the Australian Cerambycidae with sections on biology, phylogeny and morphology of adult and larvae, followed by the keys to the subfamilies and an overview of the 74 genera of the subfamily Lamiinae occurring in Australia. All Lamiinae genera are diagnosed, described and illustrated and an illustrated key to their identification is provided. A full listing of all included Australian species with synonymies and bibliographic citations is also included.

Photographic Field Guide to Australian Frogs

Australia is home to more than 240 species of frogs, many of which cannot be found anywhere else in the world. The Photographic Field Guide to Australian Frogs provides readers with the tools to confidently identify 242 species and five recognised subspecies. It includes detailed information on the distribution, habitat preferences and call of each frog species, as well as fully illustrated keys to genera to assist with identification. Multiple photographs of each species show variation in colour and pattern as well as features used for identification such as thigh colouration, skin texture, belly colour and patterning, eye colour and extent of webbing between the toes. With a strong focus on illustrating variation and key diagnostic features, this guide will enable frog enthusiasts, environmental professionals and research scientists to identify Australian frog species with a high level of confidence.

Zygaenid Moths of Australia

The Zygaenidae are a family of day-flying moths with an unusual biology – they are capable of releasing prussic (hydrocyanic) acid. All Australian species belong to the subfamily Procridinae (commonly known as foresters) and many of these feature iridescent green colours or a wasp-like look. This is the first study of the Australian fauna of these attractive and biologically interesting moths. In this volume their beauty is captured larger-than-life in 114 finely detailed portraits by acclaimed artist František Gregor, setting a new benchmark for moth illustrations. Comprehensive general chapters discuss zygaenid morphology, biology, phylogeny and classification, with considerable new information of world-wide

relevance. The book then provides in-depth treatments of the 10 genera and 43 species present in Australia, including 4 genera and 21 species new to science. It features keys to genera and species, photos of genitalia of both sexes and other diagnostic structures, and distribution maps for all species. Additionally, there are 8 pages of colour photographs and over 400 photos of microscopic structures, including more than a hundred spectacular scanning electron micrographs.

Olethreutine Moths of Australia

Olethreutine moths often have fruit-boring larvae and this economically important group includes many horticultural pests such as codling moths, Oriental fruit moths and macadamia nut borers. This volume is the first reference to describe the 90 olethreutine genera present in Australia. It provides generic definitions, a key to genera, generic descriptions, and illustrations of adults, heads, venation, genitalia of both sexes and other diagnostic structures of all genera. Summaries of biology and distribution and a checklist for all named Australian species are given for each genus. Importantly, it includes a comprehensive reorganisation of olethreutine classification, based on generic revisions, with a worldwide impact. The volume contains copious illustrations (two species per genus where possible) to convey generic concepts, and to allow identification of this economically important group. Nearly all olethreutine genera present in Australia extend into Asia and beyond, so the book will be relevant to horticultural pests throughout Asia, and crucial to an understanding of olethreutine evolution worldwide. The diverse Australian olethreutine fauna is particularly rich in enarmoniine and grapholitine genera, several new to science and adding significantly to the concepts of these two tribes. Given the wealth of biological information, the book will be important for ecological work on phytophagous insects well beyond Australia.

Volume 1: Morphology and Systematics (Archostemata, Adephaga, Myxophaga, Polyphaga partim)

This book is the first of four volumes in the Handbook of Zoology series which treat the systematics and biology of Coleoptera. With approximately 350,000 described species, Coleoptera are by far the most species-rich order of insects and the largest group of animals of comparable geological age. The beetle volumes will meet the demand of modern biologists seeking to answer questions about Coleoptera phylogeny, evolution, and ecology. This first Coleoptera volume covers the suborders Archostemata, Myxophaga and Adephaga, and the basal series of Polyphaga, with information on world distribution, biology, morphology of all life stages (including anatomy), phylogeny and comments on taxonomy.

The Insects of Australia

Longhorn beetles — Cerambycidae — are one of the most easily recognised groups of beetles, a cosmopolitan family that encompasses more than 33,000 species in 5,200 genera worldwide. Out of the 117 beetle families occurring in Australia, Cerambycidae is the sixth largest, comprising more than 1,400 species classified in 300 genera. Virtually all Cerambycidae feed on living or dead plant tissue and play a significant role in all terrestrial environments. Larvae often utilise damaged or dead trees for their development, and through feeding on rotten wood, form an important element of the saproxylic fauna, speeding nutrient and energy circulation in these habitats. Longhorn beetles can cause serious damage by sometimes feeding on and eventually killing living forest or orchard trees. Many species are listed as quarantine pests because of their destructive role to the timber industry, such as the European house borer introduced into Western Australia. This third volume in the series on Australian longhorn beetles extends to include the taxonomy of genera and species of the subfamily Prioninae of the Australo-Pacific Region. Seven tribes, 50 genera and 166 species are included. All genera and most species are diagnosed, described, illustrated and included in keys to their identification.

Australian Longhorn Beetles (Coleoptera: Cerambycidae) Volume 3

Rays are among the largest fishes and evolved from shark-like ancestors nearly 200 million years ago. They share with sharks many life history traits: all species are carnivores or scavengers; all reproduce by internal fertilisation; and all have similar morphological and anatomical characteristics, such as skeletons built of cartilage. Rays of the World is the first complete pictorial atlas of the world’s ray fauna and includes information on many species only recently discovered by scientists while undertaking research for the book. It includes all 26 families and 633 valid named species of rays, but additional undescribed species exist for many groups. Rays of the World features a unique collection of paintings of all living species by Australian natural history artist Lindsay Marshall, compiled as part of a multinational research initiative, the Chondrichthyan Tree of Life Project. Images sourced from around

the planet were used by the artist to illustrate the fauna. This comprehensive overview of the world's ray fauna summarises information such as general identifying features and distributional information about these iconic, but surprisingly poorly known, fishes. It will enable readers to gain a better understanding of the rich diversity of rays and promote wider public interest in the group. Rays of the World is an ideal reference for a wide range of readers, including conservationists, fishery managers, scientists, fishers, divers, students and book collectors.

Rays of the World

There are an estimated 40,000 species of chrysomelids, or leaf beetles, worldwide. These biologically interesting and often colorful organisms, such as the tortoise beetles, have a broad range of life histories and fascinating adaptations. For example, there are chrysomelids with shortened wings (brachypterous) and elytra (brachelytrous), other species are viviparous, and yet other leaf beetles have complicated anti predator-parasitoid defenses. Some species, such as corn rootworms (several species in the genus Diabrotica) constitute major agricultural crop pests. Research on Chrysomelidae 2 is a the second volume of a series of volumes on the Chrysomelidae edited by Jolivet, Santiago-Blay, and Schmitt.

Research on Chrysomelidae, Volume 2

There are more than 36,000 described species in the family Cerambycidae in the world. With the significant increase of international trade in the recent decades, many cerambycid species have become major plant pests outside their natural distribution range, causing serious environmental problems at great cost. Cerambycid pests of field, vine, and tree crops and of forest and urban trees cost billions of dollars in production losses, damage to landscapes, and management expenditures worldwide. Cerambycidae of the World: Biology and Pest Management is the first comprehensive text dealing with all aspects of cerambycid beetles in a global context. It presents our current knowledge on the biology, classification, ecology, plant disease transmission, and biological, cultural, and chemical control tactics including biosecurity measures from across the world. Written by a team of global experts, this book provides an entrance to the scientific literature on Cerambycidae for scientists in research institutions, primary industries, and universities, and will serve as an essential reference for agricultural and quarantine professionals in governmental departments throughout the world.

Cerambycidae of the World

The Royal Entomological Society (RES) and Wiley-Blackwell are proud to present this landmark publication, celebrating the wonderful diversity of the insects of the British Isles, and the work of the RES (founded 1833). This book is the only modern systematic account of all 558 families of British insects, covering not just the large and familiar groups that are included in popular books, but even the smallest and least known. It is beautifully illustrated throughout in full colour with photographs by experienced wildlife photographers to show the range of diversity, both morphological and behavioural, among the 24,000 species. All of the 6,000 genera of British insects are listed and indexed, along with all the family names and higher groups. There is a summary of the classification, biology and economic importance of each family together with further references for detailed identification. All species currently subject to legal protection in the United Kingdom are also listed. The Royal Entomological Society is one of the oldest and most prestigious of its kind in the world. It is the leading organisation for professional entomologists and its main aim has always been the promotion of knowledge about insects. The RES began its famous Handbooks for the Identification of British Insects in 1949, and new works in that series continue to be published. The Royal Entomological Society Book of British Insects has been produced to demonstrate the on-going commitment of the RES to educate and encourage each generation to study these fascinating creatures. This is a key reference work for serious students of entomology and amateur entomologists, as well as for professionals who need a comprehensive source of information about the insect groups of the British Isles they may be less familiar with.

The Royal Entomological Society Book of British Insects

Longhorn Beetles — Cerambycidae are one of the most easily recognised groups of beetles, a family that worldwide encompasses over 33,000 species in 5,200 genera. With over 1,400 species classified in 300 genera, this is the sixth largest among 117 beetle families in Australia. These beetles often attack and kill living forest or orchard trees and develop in construction timber (like European House borer, introduced to WA), causing serious damages. Virtually all Cerambycidae feed on living or dead

plant tissues and play a significant role in all terrestrial environments where plants are found. Larvae often utilise damaged or dead trees for their development, and through feeding on rotten wood form an important element of the saproxylic fauna, speeding energy circulation in these habitats. Many species are listed as quarantine pests because of their destructive role to the timber industry. This volume provides a general introduction to the Australian Cerambycidae with sections on biology, phylogeny and morphology of adult and larvae, followed by the keys to the subfamilies and an overview of the 74 genera of the subfamily Lamiinae occurring in Australia. All Lamiinae genera are diagnosed, described and illustrated and an illustrated key to their identification is provided. A full listing of all included Australian species with synonymies and bibliographic citations is also included.

Australian Longhorn Beetles (Coleoptera: Cerambycidae) Volume 1

The present updated and revised Catalogue is a collective international work by 12 authors. It includes about 6453 species names of 913 genera. The general structure and the taxonomic, distributional and bibliographical information of the first edition of the Catalogue are followed with minor changes.

Chrysomeloidea I (Vesperidae, Disteniidae, Cerambycidae)

This book, by Australia's ladybird beetle specialist, Dr Adam Slipinski, illustrates Australia's diverse and fascinating ladybird beetle fauna — the commoner spotted species and the many others that are striped, glossy, and even very hairy. Most are predatory, but some are leaf feeders. This book reviews all 57 currently recognised genera of Australian Coccinellidae, recognising 260 valid described species, and including some genera and species newly described here. All genera are diagnosed, described and illustrated and a key to their identification is provided. Larvae of 30 species are described, illustrated and keyed. Sets of colour and black and white plates display these often beautifully colourful beetles, and their key features. The book is a must for all people interested in Australia's beetle fauna, in biocontrol and in natural resource management. This book was originally published in hardback by Australian Biological Resources Study (ABRS) in 2007 and is now available in a digital format.

Australian Ladybird Beetles (Coleoptera: Coccinellidae)

The 2nd edition of this comprehensive book provides one of the most complete overviews of the aquatic beetles in the family Dytiscidae, also known as predaceous diving beetles. Dytiscids constitute one of the largest families of freshwater insects with approximately 4,650 named species that come in a variety of sizes, colors, and habitat affinities. Although dytiscid adults and larvae are ubiquitous throughout a variety of aquatic habitats, and are important predators on other aquatic invertebrates and vertebrates, there are no compilations that have focused on summarizing the knowledge on aspects of their ecology, systematics, and biology. Chapters in this book summarize hitherto scattered topics, including their anatomy and habitats, chemical and community ecology, phylogenies and larval morphology including chaetotaxy, sexual systems, predation, dispersal, conservation, and cultural and historical aspects. The 2nd edition offers updates on the newest scientific findings on dytiscids and also includes a new chapter on the subterranean fauna from Australia. The information in this new edition is potentially beneficial to anyone working in aquatic systems where dytiscids are an important part of the food web. Moreover, readers will gain a greater appreciation of dytiscids as model organisms for investigations of fundamental principles derived from ecological and evolutionary theory. Contributed chapters are by authors who are actively engaged in studying dytiscids, and each chapter provides color photos and future directions for research.

Insect and Mite Pests in Food

Bark Beetles: Biology and Ecology of Native and Invasive Species provides a thorough discussion of these economically important pests of coniferous and broadleaf trees and their importance in agriculture. It is the first book in the market solely dedicated to this important group of insects, and contains 15 chapters on natural history and ecology, morphology, taxonomy and phylogenetics, evolution and diversity, population dynamics, resistance, symbiotic associations, natural enemies, climate change, management strategies, economics, and politics, with some chapters exclusively devoted to some of the most economically important bark beetle genera, including Dendroctonus, Ips, Tomicus, Hypothenemus, and Scolytus. This text is ideal for entomology and forestry courses, and is aimed at scientists, faculty members, forest managers, practitioners of biological control of insect pests, mycologists interested in bark beetle-fungal associations, and students in the disciplines of entomology, ecology, and forestry. Provides the only synthesis of the literature on bark beetles Features

chapters exclusively devoted to some of the most economically important bark beetle genera, such as Dendroctonus, Ips, Tomicus, Hypothenemus, and Scolytus Includes copious color illustrations and photographs that further enhance the content

Ecology, Systematics, and the Natural History of Predaceous Diving Beetles (Coleoptera: Dytiscidae)

Longhorn beetles -- Cerambycidae -- are one of the most easily recognized groups of beetles, a cosmopolitan family that encompasses more than 33,000 species in 5,200 genera worldwide. Out of the 117 beetle families occurring in Australia, Cerambycidae is the sixth largest, comprising more than 1,400 species classified in 300 genera. Virtually all Cerambycidae feed on living or dead plant tissue and play a significant role in all terrestrial environments. Larvae often utilize damaged or dead trees for their development, and through feeding on rotten wood, form an important element of the saproxylic fauna, speeding nutrient and energy circulation in these habitats. Longhorn beetles can cause serious damage by sometimes feeding on and eventually killing living forest or orchard trees. Many species are listed as quarantine pests because of their destructive role to the timber industry, such as the European house borer introduced into Western Australia. This third volume in the series on Australian longhorn beetles extends to include the taxonomy of genera and species of the subfamily Prioninae of the Australo-Pacific Region. Seven tribes, 50 genera and 166 species are included. All genera and most species are diagnosed, described, illustrated and included in keys to their identification. Features The final volume of a three-volume set with taxa representing the largest Australian beetles of taxonomic and commercial value (as agricultural pests and prized additions to amateur collections worldwide). Covers the taxonomy of genera and species of the Australo-Pacific Prioninae, with comments on natural history and morphology. Fifty Prioninae genera and 166 species are diagnosed and described, with identification keys and images provided to represent genera, species and actual type specimens. A full list of all Australian and Australo-Pacific species with synonymies and bibliographic citations is provided. Also available: Australian Longhorn Beetles (Coleoptera: Cerambycidae) Volumes 1 and 2

Bark Beetles

This book is a revised edition of the first of three volumes in the Handbook of Zoology series which treats the systematics and biology of Coleoptera. With over 380,000 described species, Coleoptera are by far the most species-rich order of insects and the largest group of animals of comparable geological age. Moreover, numerous species are tremendously important economically. The beetle volumes meet the demand of modern biologists seeking to answer questions about Coleoptera phylogeny, evolution, and ecology. This first Coleoptera volume covers the suborders Archostemata, Myxophaga and Adephaga, and the basal series of Polyphaga, with information on world distribution, biology, morphology of all life stages, phylogeny and comments on taxonomy.

Australian Cicadas

Volume Two of the new guide to the study of biodiversity in insects Volume Two of Insect Biodiversity: Science and Society presents an entirely new, companion volume of a comprehensive resource for the most current research on the influence insects have on humankind and on our endangered environment. With contributions from leading researchers and scholars on the topic, the text explores relevant topics including biodiversity in different habitats and regions, taxonomic groups, and perspectives. Volume Two offers coverage of insect biodiversity in regional settings, such as the Arctic and Asia, and in particular habitats including crops, caves, and islands. The authors also include information on historical, cultural, technical, and climatic perspectives of insect biodiversity. This book explores the wide variety of insect species and their evolutionary relationships. Case studies offer assessments on how insect biodiversity can help meet the needs of a rapidly expanding human population, and examine the consequences that an increased loss of insect species will have on the world. This important text: Offers the most up-to-date information on the important topic of insect biodiversity Explores vital topics such as the impact on insect biodiversity through habitat loss and degradation and climate change With its companion Volume I, presents current information on the biodiversity of all insect orders Contains reviews of insect biodiversity in culture and art, in the fossil record, and in agricultural systems Includes scientific approaches and methods for the study of insect biodiversity The book offers scientists, academics, professionals, and students a guide for a better understanding of the biology and ecology of insects, highlighting the need to sustainably manage ecosystems in an ever-changing global environment.

Australian Longhorn Beetles

This book is the third volume in the Handbook of Zoology series which treats the systematics and biology of Coleoptera. With approximately 350,000 described species, Coleoptera are by far the most species-rich order of insects and the largest group of animals of comparable geological age. This third Coleoptera volume completes the Morphology and Systematics volumes with 43 chapters and covers one of the largest radiations of beetles, the mainly plant-feeding Phytophaga, with information on world distribution, biology, morphology of all life stages (including anatomy), phylogeny and comments on taxonomy.

Coleoptera, Beetles. Morphology and Systematics

As in most groups of insects, scientific research on the Chrysomelidae began in Europe in 1758, with the description of a few genera and species by the Scandinavian entomologists C. von Linne, I.C. Fabricius, and others. As the 19th century dawned, many systematic entomologists took up the study of chrysomelid beetles, together with other groups of beetles, and many new species and genera were described from all parts of the world. This trend has, of course, continued down to the present time. However, researches on the Chrysomelidae did not remain restricted to systematics, and many new lines of study have been followed, especially in the present century, by workers who have benefitted from the advances made in related fields of pure and applied entomology. Much has been achieved in the study of the Chrysomelidae, as elsewhere, and it is the aim of the present book to provide a summary and guide to these achievements. It is also to be expected that this book will provide a stimulus for further studies on the Chrysomelidae, so that we can anticipate continuing progress in our knowledge and understanding of this group through the endeavours of an ever-increasing number of scientists. I offer my congratulations to all concerned in the preparation of this book and my best wishes for its success.

Insect Biodiversity

In many ecosystems dung beetles play a crucial role--both ecologically and economically--in the decomposition of large herbivore dung. Their activities provide scientists with an excellent opportunity to explore biological community dynamics. This collection of essays offers a concise account of the population and community ecology of dung beetles worldwide, with an emphasis on comparisons between arctic, temperate, and tropical species assemblages. Useful insights arise from relating the vast differences in species' life histories to their population and community-level consequences. The authors also discuss changes in dung beetle faunas due to human-caused habitat alteration and examine the possible effects of introducing dung beetles to cattle-breeding areas that lack efficient native species. "With the expansion of cattle breeding areas, the ecology of dung beetles is a subject of great economic concern as well as one of intense theoretical interest. This excellent book represents an up-to-date ecological study covering important aspects of the dung beetle never before presented."--Gonzalo Halffter, Instituto de Ecologia, Mexico City Originally published in 1991. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.

Morphology and Systematics

The Invertebrate World of Australia’s Subtropical Rainforests is a comprehensive review of Australia’s Gondwanan rainforest invertebrate fauna, covering its taxonomy, distribution, biogeography, fossil history, plant community and insect–plant relationships. This is the first work to document the invertebrate diversity of this biologically important region, as well as explain the uniqueness and importance of the organisms. This book examines invertebrates within the context of the plant world that they are dependent on and offers an understanding of Australia’s outstanding (but still largely unknown) subtropical rainforests. All major, and many minor, invertebrate taxa are described and the book includes a section of colour photos of distinctive species. There is also a strong emphasis on plant and habitat associations and fragmentation impacts, as well as a focus on the regionally inclusive Gondwana Rainforests (Central Eastern Rainforest Reserves of Australia) World Heritage Area. The Invertebrate World of Australia’s Subtropical Rainforests will be of value to professional biologists and ecologists, as well as amateur entomologists and naturalists in Australia and abroad.

Biology of Chrysomelidae

Understand the insect world with BORROR AND DELONGýS INTRODUCTION TO THE STUDY OF INSECTS! Combining current insect identification, insect biology, and insect evolution, this biology text provides you with a comprehensive introduction to the study of insects. Numerous figures, bullets, easily understood diagrams, and numbered lists throughout the text help you grasp the material.

Dung Beetle Ecology

The Biology of the Coleoptera covers the branches of modern biology of Coleoptera. The book discusses the biological study of beetles; some skeletal peculiarities and the internal structures of the adults. The text also describes some structural features of larvae and pupae; food, digestion and the alimentary canal; and blood, osmoregulation, reserves, excretion and endocrine organs. The locomotion, respiration and energetics; the senses; and the cuticular properties, appearance, color and luminosity are also considered. The book further tackles the adult and larval behavior; the development and life-cycles; and the cytology and genetics. The text also looks into water beetles; special habitats; predation and defence; and symbiotic and parasitic relations. The ecological triangle: beetles, fungi and trees; and herbivorous beetles are also looked into. The book also discusses the role of beetles as ecological indicators; and the evolutionary history of beetles. Entomologists, ecologists, and biologists will find the book useful.

The Invertebrate World of Australia's Subtropical Rainforests

The Natural Classification of the Families of Coleoptera