Mango Malformation

Malformation disease of mango (Mangifera indica) initially noted in patches in India has now turned into a global menace wherever mango is grown. The challenge posed by the problem attracted the interest of scientists from various disciplines, which continue to do so, and will attract their attention until the problem is understood, threadbare, and resolved. For a long time, due to the complex nature of the disease, the cause and causal agent were both hotly debated. Only in recent years, the issue of the etiology of the disease has been resolved, epidemiology has been worked out to a large extent and silver bullet control measures have been replaced by IPM strategy based on the information generated on the physiology of pathogenesis and epidemiology of the disease.

Features

- The disease is of international importance and so far there is no book on this title.
- Well illustrated and comprehensive coverage of the topic from multidisciplinary angles.
- Presentation and language are easily understandable even to the readers whose native language is not English.

Contents


Fields of interest

Plant Pathology; Plant Physiology; Entomology

Target groups

Upper undergraduate

Type of publication

Monograph
Evolutionary Bioinformatics

Books on bioinformatics which began appearing in the mid 80s primarily served gene-hunters, and biologists who wished to construct family trees showing tidy lines of descent. Given the great pharmaceutical industry interest in genes, this trend has continued in most subsequent texts. These deal extensively with the exciting topic of gene discovery and searching databases, but hardly consider genomes as information channels through which multiple forms and levels of information, including genic information, have passed through the generations.

Features
► This book identifies the types of information that genomes transmit and it shows how competition between different types is resolved in the genomes of different organisms ► The book is unique in emphasising non-genic aspects of bioinformatics ► Forms of information that we are familiar with are related to forms we are less familiar with.

Contents

Fields of interest
Bioinformatics; Evolutionary Biology; Animal Genetics and Genomics

Type of publication
Monograph

Due March 2011

ISBN 978-1-4419-7770-0

► approx. € 154,95 | £139.50
► approx. * € (D) 165,80 | £ (A) 170,44 | sFr 222,00 | ISBN 978-1-4419-7770-0

Essential Building Blocks of Human Nature

To understand why we humans are as we are, it is necessary to look at the essential building blocks that comprise our nature. The foundations of this structure are our evolutionary origins as primates and our social roots. Upon these rest features such as our emotions, language and aesthetic preferences, with our self-perceptions, self-deceptions and thirst for knowledge right at the top. The unifying force holding these blocks together is evolutionary theory. Evolution provides a deeper understanding of human nature and, in particular, of the common roots of these different perspectives. To build a reliable and coherent model of man, leading authors from fields as diverse as primatology, anthropology, neurobiology and philosophy have joined forces to present essays each describing their own expert perspective. Together they provide a convincing and complete picture of our own human nature.

Brassinosteroids: A Class of Plant Hormone

The entire range of the developmental processes in plants is regulated by a shift in the hormonal concentration, tissue sensitivity and their interaction with the factors operating around them. Out of the recognized hormones, attention has largely been focused on five –Auxins, Gibberellins, Cyto- kinin, Absciscic acid and Ethylene. However, the information about the most recent group of phytohormone (Brassinosteroids) has been incorporated in this book. This volume includes a selection of newly written, integrated, illustrated reviews describing our knowledge of Brassinosteroids and aims to describe them at the present time. Various chapters incorporate both theoretical and practical aspects and may serve as baseline information for future researches through which significant developments are possible. This book will be useful to the students, teachers and researchers, both in universities and research institutes, especially in relation to biological and agricultural sciences.

Features
► This volume is about a new class of plant hormone which is gaining recognition day by day ► Up-to-date references for researchers in the field of Brassinosteroids ► Contributions are by well known researchers in the field.

From the contents

Fields of interest
Biotechnology; Plant Physiology; Plant Breeding/Biotechnology; Biotechnology

Type of publication
 Contributed volume

Due December 2010

ISBN 978-3-642-13967-3

2011. X, 390 p. 150 illus. Hardcover
► approx. € 149,95 | £135.00
► * € (D) 164,84 | £ (A) 164,94 | sFr 215,00 | ISBN 978-3-642-13967-3
H. R. Hepburn, S. E. Radloff, Rhodes University, Grahamstown, South Africa (Eds.)

**Honeybees of Asia**

A multi-authored work on the basic biology of Asian honeybees, written by expert specialists in the field, this book highlights phylogeny, classification, mitochondrial and nuclear DNA, biogeography, genetics, physiology, pheromones, nesting, self-assembly processes, swarming, migration and absconding, reproduction, ecology, foraging and flight, dance languages, pollination, diseases/pests, colony defensiveness and natural enemies, honeybee mites, and interspecific interactions. Comprehensively covering the widely dispersed literature published in European as well as Asian-language journals and books, “Honeybees of Asia” provides an essential foundation for future research.

**Features**
- Comprehensive reference work
- Written by experts
- Provides a basis for future research

**Contents**

**Fields of interest**
Entomology; Invertebrates; Animal Systematics/Biogeography

**Target groups**
Research

**Type of publication**
Contributed volume

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C. Kole, Clemson University, Clemson, SC, USA (Ed.)

**Wild Crop Relatives – Genomic and Breeding Resources**

**Temperate Fruits**

Wild crop relatives are now playing a significant part in the elucidation and improvement of the genomes of their cultivated counterparts. This work includes comprehensive examinations of the status, origin, distribution, morphology, cytology, genetic diversity and available genetic and genomic resources of numerous wild crop relatives, as well as their evolution and phylogenetic relationship. Further topics include their role as model plants, genetic erosion and conservation efforts, and their domestication for the purposes of bioenergy, phytomedicines, nutraceuticals and phytoremediation.

**Features**
- This 10-volume-work is the first comprehensive depiction of wild crops as a gold mine for breeding
- With chapters authored by internationally reputed leading scientists, many of whom contributed to the development of novel concepts, strategies and tools of genetics, genomics and breeding

**Contents**
Wild Crop Relatives: Genomic and Breeding Resources comprises 10 volumes on Cereals, Millets and Grasses, Oilseeds, Legume Crops and Forages, Vegetables, Temperate Fruits, Tropical and Subtropical Fruits, Industrial Crops, Plantation and Ornamental Crops, and Forest Trees. It contains 125 chapters written by nearly 400 well-known authors from about 40 countries.

**Fields of interest**
- Cydonia, Fragaria, Malus, Muscadiniana, Olea, Pistacia, Prunus, Pyrus, Rubus, Vaccinium, Vitis.

**Type of publication**
Contributed volume

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**The Landscape Ecology of Fire**

Global warming is expected to change fire regimes, likely increasing the severity and extent of wildfires in many ecosystems around the world. What will be the landscape-scale effects of these altered fire regimes? Within what theoretical contexts can we accurately assess these effects? We explore the possible effects of altered fire regimes on landscape patch dynamics, dominant species (tree, shrub, or herbaceous) and succession, sensitive and invasive plant and animal species and communities, and ecosystem function. Ultimately, we must consider the human dimension: what are the policy and management implications of increased fire disturbance, and what are the implications for human communities?

**Features**
- Features new theoretical ideas, new syntheses, and a broad sampling of field landscape ecology
- Focus on applications of theoretical concepts in landscape and fire ecology
- Covering policy and management implications of increased fire disturbance

**Fields of interest**
- Landscape Ecology; Theoretical Ecology/Statistics; Climate Change

**Type of publication**
Contributed volume
Metabolic Profiling

Methods and Protocols

At the intersection of metabolite analysis, metabolic fingerprinting, and metabonomics, the study of metabolic profiling has evolved steadily over the course of time as have the methods and technologies involved in its study. In Metabolic Profiling: Methods and Protocols, expert researchers in the field present protocols that are illustrative of the evolution of metabolic profiling from single molecule analysis to global metabolome profiling. Comprised of the most essential techniques, this volume covers topics from inborn errors of metabolism and drug metabolite analysis to nuclear magnetic resonance metabolic profiles. Written in the highly successful Methods in Molecular Biology™ series format, chapters include introductions to their respective subjects, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls.

Features
- Illustrates the evolution of metabolic profiling from single molecule profiling to global metabolome profiling
- Features cutting-edge protocols, presented from the perspective of leading experts in the field
- Includes valuable notes highlighting tips on troubleshooting and avoiding known methodological pitfalls

From the contents

Fields of interest
Biochemistry, general; Metabolomics

Target groups
Professional/practitioner

Type of publication
Contributed volume

Sensory and Metabolic Control of Energy Balance

The prevalence of obesity has dramatically increased in western and westernized societies, making the disease the second leading cause of unnecessary deaths in the US. Obesity results from imbalanced metabolic regulation leading to excessive lipid storage. As important novel entities in metabolic regulation, taste receptors and their cells are critical elements that adapt the gustatory system to metabolic signals and vice versa. The role of taste receptor genes in gastrointestinal tissues, as well as their dynamic regulation in metabolic cues, has become the focus of an entirely new and rapidly developing research field with impacts on fuel sensing, metabolic control, and ingestive behavior. This book reflects the recent scientific progress in the field of fuel sensing in the mouth, GI tract, and brain and examines the olfactory bulb as a potential metabolic sensor and the brain-gut endocrine axis.

Features
- Up-to-date account of the scientific progress made in the understanding of molecular mechanisms regulating energy metabolism
- Special emphasis on obesity
- Written by experts in the field

From the contents
The Genetic Basis of Obesity and Type 2 Diabetes: Lessons from the New Zealand Obese Mouse, a Polygenic Model of the Metabolic Syndrome Regulation of Nutrient Metabolism and Inflammation Lipid Storage in Large and Small Rat Adipocytes by Vesicles.- Associated Glycosylphosphatidylinositol.- Anchored Autophagy and Regulation of Lipid Metabolism Gene Co.

Fields of interest
Cell Biology

Target groups
Research

Type of publication
Contributed volume

Male Germline Stem Cells: Developmental and Regenerative Potential

Scientists investigating germ cells have, over the past 15 years, originated discoveries and innovations that give us valuable insights into the mechanisms that regulate not just stem cell function, but human development in its widest sense. With contributions from some of the leading researchers in the field, Male Germline Stem Cells: Developmental and Regenerative Potential assesses the implications of these discoveries for understanding the fundamental biology of germline stem cells as well as their potential for human stem cell-based therapies. This monograph covers many of the fundamental issues now being explored by today's generation of stem cell researchers, including the field's potential for regenerative medicine. Ranging from an assessment of the pluripotency of primordial germ cells and their possible applications in treating testicular cancer, to the recovery of once-mordant fertilization-competent sperm, this volume has it all.

Features
- Rapid expansion of the male germ cell field is fuelled by implications for understanding pluripotent and adult tissue stem cell biology
- Chapters are authored by the leading authorities and pioneers in the fields of germ cell biology and stem cell biology
- Progress understanding and manipulating male germ cells has implications for regenerative medicine

From the contents
Foreword.- Part I – Germline developmental potential: 1. Primordial germ cells to EG cells, Peter Donovan.

Fields of interest
Cell Biology; Biotechnology; Biomedical Engineering

Target groups
Professional/practitioner

Type of publication
Monograph
Bioenergetic Processes of Cyanobacteria
From Evolutionary Singularity to Ecological Diversity

This publication is unique among a number of books on cyanobacteria because it focuses on the bioenergetics of these widespread organisms, which are the evolutionary prerequisite for the development of all higher forms of life on our “blue” planet. The book primarily addresses questions of energy conversion by the fundamental bioenergetic processes: (oxygenic) photosynthesis, (aerobic) respiration, and (anaerobic) fermentation which uniquely occur together in these prokaryotic cells. Thermophilic cyanobacteria offer the most suitable material for high resolution structure analyses of Photosystem I and II and other electron transport complexes by X-ray crystallography (for example, at present the structure of Photosystem II at atomic resolution is only known for these organisms).

The present work represents an ambitious attempt to achieve the goal of a synoptic state-of-the-art picture by casting together the mosaics of detailed knowledge described by leading experts in the field.

Features

► Provides a comprehensive and updated description of our current knowledge in the bioenergetics of cyanobacteria

► Of great value for active researchers and graduate students who are interested in entering this fascinating field of life sciences

Fields of interest

Life Sciences, general; Plant Biochemistry; Cell Biology

Target groups

Research

Type of publication

Contributed volume

Contributed volume

Type of publication

Contributed volume

Adult Stem Cells
Biology and Methods of Analysis

This comprehensive overview of what is a vital area of scientific enquiry covers a broad spectrum of issues. With contributions from some of the key researchers in the field, Adult Stem Cells: Biology and Methods of Analysis offers readers historical perspective as well as unique insights into cutting-edge thinking. The volume contextualizes the recent discovery of stem/progenitor cell populations resident in many adult tissues and organs. It confronts the complexities scientists face in trying to validate these cells and describes and critically evaluates the methods currently used to assess stem cell self-renewal. The chapters also seek to distinguish this process from other aspects of cell survival, such as the regulation of life span, senescence, and immortalization at a molecular level.

Features

► Provides an ample overview of adult stem cell biology

► The comprehensive nature of the volume and the unique insights provided by the contributing authors make it an important resource both for those interested in adult stem cell biology as well as researchers working in the field

► Written by leaders in the field

From the contents


Fields of interest

Stem Cells; Cell Biology; Biotechnology

Target groups

Professional/practitioner

Type of publication

Contributed volume

Long Non-Coding RNAs

Long non-coding RNAs (lncRNAs), tentatively defined as ncRNAs of more than two hundred nucleotides in length, are characterized by the complexity and diversity of their sequences and mechanisms of action. Based on genome-wide studies, more than 3,300 of them exist, but to date only the limited number of functional lncRNAs have been identified and characterized. Nonetheless, lncRNAs have emerged as key molecules involved in the control of transcriptional and posttranscriptional gene regulatory pathways. They take part in the recruitment of chromatin modifying complexes and regulate splicing, localization, stability and translation of the target mRNAs. This book provides an overview of the rapidly advancing field of long ncRNAs, describing the epigenetic and non-epigenetic mechanisms by which they regulate various biological functions in model systems, from yeast to mammals.

Features

► Gives overview of the rapidly advancing field of long non-coding RNAs

► Describes the biological functions of long non-coding RNAs in all model systems (from microorganism to mammals)

► Covers epigenetic and non-epigenetic mechanisms of gene regulation through long non-coding RNAs

► Written by experts in the field

Contents


Fields of interest

Biochemistry, general; Nucleic Acid Chemistry; Cell Biology

Target groups

Research

Type of publication

Contributed volume
A great fascination for biologists, the study of embryo development provides indispensable information concerning the origins of the various forms and structures that make up an organism, and our ever-increasing knowledge gained through the study of plant embryology promises to lead to the development of numerous useful applications. In Plant Embryo Culture: Methods and Protocols, expert researchers from the field provide a ready source of information for culturing zygotic embryos for different types of studies, both theoretical and practical. The book’s main sections examine a wide range of related topics, including the culture of zygotic embryos for developmental studies, the application of embryo culture techniques focusing on embryo rescue methods, cryopreservation of zygotic embryos, the use of zygotic embryos as explants for somatic embryogenesis and organogenesis, as well as transformation protocols using zygotic embryos as starting material. Written in the highly successful Methods in Molecular Biology™ series format, the detailed chapters include introductions to their respective topics.

Features
► Presents detailed zygotic embryo isolation techniques with a wide variety of applications
► Serves as a quick, convenient reference source
► Includes tips from the labs of experts, well-versed in the methods and protocols provided

From the contents
Zygotic Embryo Culture: An Overview. - In vitro Fertilization with Rice Gametes: Production of Zygotes and Zygote and Embryo Culture. - Canola Zygotic Embryo Culture.

Fields of interest
Plant Sciences; Cell Culture

Target groups
Professional/practitioner

Type of publication
Contributed volume