BOTANY

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Science Publishers
Enfield, New Hampshire, USA
EMBRYOLOGY OF FLOWERING PLANTS: Terminology and Concepts
T.B. Batygina (ed.): Komarov Botanical Institute, St. Petersburg, Russia

**GENERATIVE ORGANS OF FLOWER**
978-1-57808-188-2; 2002; 439 pages, hc; $143.40

The book is divided into three parts: Flower, Anther, and Ovule. It summarizes the classical and current concepts about flower generative organs, their structure and development, and about seed formation processes. The book contains ample material that can be employed in theoretical generalizations, in analyzing the distribution of features (or their uniqueness) and evolutionary transformations of structures. This offers vast possibilities for revising the existing and developing new classifications and concepts.

**THE SEED**
978-1-57808-263-6; 2005; 786 pages, hc; $168.00

In this important work researchers with/influenced by the Department of Embryology and Reproductive Biology, Komarov Botanical Institute, Russian Academy of Sciences, treat plant processes now controllable by plant breeders due to new hypotheses, data, technologies, and methods. Concepts covered include critical periods of embryo development and seed genetic heterogeneity.

“Any one interested in seeds at any point from double fertilization to germination will find much useful, new, and interesting information in this volume.”

**POLLEN BIOLOGY AND BIOTECHNOLOGY**
K.R. Shivanna
978-1-57808-241-4; 2003; 316 pages, pb; $55.40

The author offers an overview of pollen biology and biotechnology for students and researchers in areas such as reproductive biology, biotechnology, aeropalynology, plant breeding, horticulture, and forestry.

“The book is primarily designed for teachers and students of pollen biology courses.”
— Folia Geobotanica, 39/2, 2004

**JOURNEY OF A SINGLE CELL TO PLANT**
S.J. Murch: National Tropical Botanical Garden, Kalaheo, Hawaii, USA
P.K. Saxena: University of Guelph, Guelph, Ontario, Canada
978-1-57808-352-7; 2005; 384 pages, hc; $109.80

In plants, the ability to regenerate identical individuals from single cells is the basis for modern agriculture. These scientific advancements have given us virus-free stocks, novel germplasms, clonal propagation systems, and the commercial introduction of difficult to propagate plant species. The timescale for breeding programs was dramatically reduced as plant tissue culture technologies were developed to shorten the time between generations and reduce the number of generations required for a line to be developed. Without the capacity to regenerate plants, it would not have been possible for plant biotechnology and genetic engineering to have advanced this far.

This book contains detailed reviews by the leading scientists who made these discoveries.

**CHROMOSOME BOTANY**
Archana Sharma and S. Sen
978-1-57808-183-7; 2002; 168 pages + 5 color plates, 180 × 240 mm, pb; $54.90

The book covers both the basics of plant chromosomes as well as advances such as molecular characteristics, to give the reader an understanding of the chromosome as vehicle of hereditary transmission.

CONTENTS: Chromosome structure: Physical, chemical and molecular nature of fibris, replicons, euchromatin, heterochromatin, genes with subdivisions, nucleosome, centromere, telomeres, nucleolar organizing regions, repeat DNA sequences and transposons; Cell cycle, mitosis, and meiosis; Karyotype concept; Chromosomal changes and biodiversity; Chromosome evolution of different plant groups; Chromosomes and organ differentiation; Chromosomes and differentiation of sex; Nuclear DNA and plant evolution; Identification of finer segments and gene sequences in chromosomes: Banding pattern; In situ molecular hybridization; Chromosomes as affected by physical and chemical agents in the environment bioindicators; Future scope
PLANT PHYSIOLOGY
Characteristics, Breeding, and Genetics
Ramdane Dris: University of Helsinki, Finland
Catherine Barry-Ryan: University of Limerick, Ireland
978-1-57808-240-7; 2002; 212 pages, hc; $ 76.20

This book constitutes a compilation of select articles presented at a workshop on ‘Plant Physiology—Characteristics, Breeding and Genetics’ held in June 2001 at Babtai Horticultural Research Institute, Babtai, Kaunas, Lithuania.

The book focuses on factors affecting physiological changes occurring during the growth and development of plants with a view to crop breeding. The book should be useful to scientists, researchers, students, or experts dealing with plant physiology, plant pathology, plant biotechnology, plant breeding, and genetics.

PHOTOSYNTHESIS
Regulation Under Varying Light Regimes
V.S. Rama Das
978-1-57808-343-5; 2004; 206 pages, hc; $ 72.80

The book broadly reviews the research literature on light regulation in photosynthesis in higher plant systems, along with some discussion of green algae and cyanobacterial examples where appropriate. Chapters present the recent state of knowledge related to photoinhibition; photoprotection; leaf helsiotropism, solar tracking, and regulation of light interception, acclimation of photosynthesis to light environment, and transgenic and biotechnological approaches.

“The present book on photoinhibition of photosynthesis is informative and is available at an attractive price of US$ 65. I recommend the book to all educational institutions, teachers and research workers interested in the field.”

— Current Science, Vol. 89, No. 7, October 2005
PLANT ECOPHYSIOLOGY
Jean-Claude Leclerc: l’université de Saint-Etienne, Etienne, France
978-1-57808-237-7; 2002; 330 pages; pb; $ 49.50

In this translation of the French edition (L’U. de Saint-étienn, 1999), Leclerc (plant biology and physiology, Jean Monnet U., Saint Etienne, France) treats the interrelated factors that inform plants’ adaptations to their environments. Applying ecophysiological principles to identify mechanisms of dysfunction in ecosystems, he presents data-based cases for: less stressful growing methods (e.g., using cultivars that require less water and polluting fertilizers); confining genetically modified organisms to the lab; and reality-based holistic studies.

MOLECULAR INSIGHT IN PLANT BIOLOGY
P. Nath & S.A. Ranade: National Botanical Research Institute, Lucknow, India
Jacques-Henry Weil: Institute de Biologie Moleculaire des Plantes, Strassbourg, France
978-1-57808-187-5; 2002; 267 pages, hc; $ 75.00

Contain 21 chapters divided into three sections: Molecular Biology and Biotechnology of Genomes; Molecular Biology and Biotechnology of Hormonal and Chemical Signalling; and Molecular Biology and Biotechnology of Transformed Plants.

INTRODUCTION TO PLANT TISSUE CULTURE
M.K. Razdan
978-1-57808-237-7; 2002; 330 pages; 180x240 mm, pb; $ 49.50

“This volume is an excellent addition to the literature on plant tissue culture research. The coverage and balance of this book is commendable. It is well edited and highly recommended to senior and graduate students, professors, and researchers in the fields of biology, crop production, plant breeding, horticulture and forestry, as well as pest management and environmental studies.”

— The Quarterly Review of Biology, Vol. 79, June 2004

“... this book is a good starting text, especially for students who wish to have a general overview...”

— Plant Cell, Tissue and Organ Culture, 77:117, 2004

CONTENTS: Introduction and Techniques: Introductory History; Laboratory Organisation; Media; Aseptic Manipulation / Basic Aspects: Cell Culture; Cellular Totipotency; Somatic Embryogenesis / Applications to Plant Breeding: Haploid Production; Triploid Production; In Vitro Pollination and Fertilization; Zygotic Embryo Culture; Somatic Hybridisation and Cybridisation; Genetic Transformation; Somaclonal and Gametoclonal Variant Selection / Application to Horticulture and Forestry: Production of Disease-free Plants; Clonal Propagation / General Applications: Industrial Applications; Secondary Metabolite Production; Germplasm Conservation.

BIOTECHNOLOGY OF MEDICINAL PLANTS
Vitalizer and Therapeutic
K.G. Ramawat (ed.)
978-1-57808-338-1; 2004; 316 pages, hc; $ 98.60

In recent years, there has been a surge in the demand for plant-based drugs and food additives. The use of organic fertilizers and natural dyes is the preferred alternative. Some countries have even banned the use of synthetic colorants and flavors from use for human consumption.

This book provides comprehensive and useful information on the medicinal plants especially those used as food supplement in the form of health vitalizers and invigorators. Separate chapters are devoted to the medicinal values of each herb.

PLANT BIOTECHNOLOGY
A Practical Approach
H.S. Chawla
978-1-57808-296-4; 2003; 312 pages, 180x240 mm, pb; $ 44.20

Plant biotechnology has now become firmly entrenched as a branch of science. Biotechnology courses have been included in the basic course curriculum of schools and universities. To understand biotechnology, it is essential that students learn elementary laboratory protocols on plant tissue culture and recombinant DNA technology. This practical laboratory manual has been designed to familiarise with such protocols. The book describes simple plant tissue culture protocols that can be performed on easily available plant material, and also those meant for specific materials. Worksheets have been provided to record the results of the experiments. Exercises have been linked to one another, for a better understanding of the rationale for performing the exercise.

This will be a source book for the herbalists, ayurvedic practitioners, drug manufacturers, botanists, biotechnologists, pharmacologists, agriculturists, phytochemists as well as anyone interested in medicinal plants research and biotechnology.
INTRODUCTION TO PLANT BIOTECHNOLOGY
H.S. Chawla
978-1-57808-228-5; 2002; 562 pages, pb; $ 48.00

Review of the First Edition
“... an excellent introduction ... appropriate for upper-division undergraduate and graduate students, faculty, and many practicing plant scientists who graduated before the genetic evolution.”


CONTENTS: Plant Tissue Culture: Introduction; Laboratory Organization; Nutrition Medium; Sterilization Techniques; Types of Culture; Micropropagation; Cell Suspension and Secondary Metabolites; In vitro Production of Haploids; Protoplast Isolation and Fusion; Somaclonal Variation; Germlasm Storage and Cryopreservation / Genetic Material and its Organization: Genetic Material; Organization of DNA and Gene Expression / Recombinant DNA Technology: Basic Techniques; Gene Cloning-Cutting and Joining DNA Molecules; Gene Cloning-Vectors; Gene Cloning- cDNA and Genomic Cloning and Analysis of Cloned DNA Sequences; Polymerase Chain Reaction; In Vitro Mutagenesis; Transposon Genetic Elements and Gene Tagging; Gene Isolation; Molecular Markers and Marker Assisted Selection; Gene Transfer Methods; Transgenics in Crop Improvement; Genomics, DNA Chips, and Microarrays; Intellectual Property Rights

GENETICALLY MODIFIED ORGANISMS
Transgenesis in Plants
Yves Tourte: Professor of Biology, University of Poitiers, France
978-1-57808-260-5; 2003; 124 pages, pb; $ 33.00

This work reviews the theoretical and historical bases of genetic engineering, particularly in regard to genetically modified plants, and details techniques of creating genetically modified organisms. It describes research programs and results in areas such as agro-food, health, and the environment, and examines practical, legal, and ethical questions posed by society and the responses of scientists, legislators, and industry. B&W photos of equipment are included.

BIOPHYSICAL PROCESSES IN LIVING SYSTEMS
P.P. Saradhi (ed.)
978-1-57808-157-8; 2001; 380 pages, hc; $ 103.00

“Twenty independent research groups share their experience in unraveling various aspects of living system through a multidisciplinary approach using biophysics along with biochemistry and molecular biology...”

NEUROTRANSMITTERS IN PLANT LIFE
V.V. Roshchina: Russian Academy of Sciences, Institute of Cell Biophysics, Moscow, Russia
978-1-57808-142-4; 2001; 292 pages, hc; $ 98.00

The book examines the functions of the neurotransmitters acetylcholine and biogenic amines dopamine, noradrenaline, serotonin, and histamine in plant organisms. Also addressed are how many plant reactions are sensitive to neurotransmitters and their significance in the field of medicine. Papers in the collecting describe participation of the components of animal cholinergic and aminergic regulatory systems in the functioning of many plant processes within and outside the cell, from changes in ion permeability of membranes, energetics, and metabolism to complex processes.

FUNCTIONAL PLANT GENOMICS
J.F. Morot-Gaudry: Institut National de Recherche Agronomique, Versailles, France
P Lea: Department of Biological Sciences, Lancaster University, U.K.
J.F. Briat: Institut National de Recherche Agronomique, Montpellier, France
978-1-57808-506-4; June 2007; 714 pages, hc; $ 133.80

This book covers a wide area of concepts and methods in genomics. These range from international genome sequencing projects, to invaluable bioinformatics tools, and analytical methods of gene expression, including final metabolic products and their specific tissue and cellular compartmentalization. This new knowledge enables readers to understand the integration of basic physiological functions, and developmental programs. Also, the establishment of tight relationships between genomics, and genetics and plant breeding reveals synergies for exploiting molecular markers, for analysing genetic variation, or for studying quantitative traits. The integration that is now feasible by these new approaches also effects ecophysiology, and opens up new perspectives for the use of modelling for the study of plant populations.

This book is intended for advanced students in botany and agronomy, their lecturers, and for all scientists who wish to understand plant genomics rapidly, in a relatively exhaustive and synthetic form.
PLANT GENOME
Biodiversity and Evolution
A.K. Sharma and A. Sharma (eds.)

Phanerogams: Part A
978-1-57808-238-4; 2003; 400 pages, hc; $ 140.00 ††


Phanerogams: Part B
978-1-57808-353-4; 2005; 352 pages, hc; $ 109.80 ††

The book examines certain fundamental issues of genomics as well as the phylogeny and evolution of certain economic and medicinal crops. Economic crops include coffee, coconut, and papaya; medicinals cover Artemisia and Costus; fodder and agricultural crops include Phleum, Lolium, and Triticale; horticultural species include Orchis and Allium; and forest plants are represented by Populus species.

Phanerogams (Angiosperm-Dicotyledons): Part C
978-1-57808-419-7; 2006; 595 pages, hc; $ 146.70 ††

Whereas the preceding volume in the series focused mainly on mono-cotyledonous crop plants, this one concentrates on the dicotyledons including legumes, fruit plants in the species */Prunus*/ , grapes, oranges, olive, and pistachio. The volume comprises 20 articles by international contributors treating solutions of problems of phylogeny, evolution, and biodiversity in several taxonomic groups. They present data from chromosomal, molecular marker, and related studies on the relationships between cultivated and wild species of such important food plants as chickpea, and their stresses and diseases. Illustrations (some in color) include plant distribution maps and genetic sequences.

Phanerogams (Gymnosperm and Angiosperm-Monocotyledons): Part D
978-1-57808-420-3; 2006; 364 pages, hc; $ 106.40 ††

The coverage of this volume ranges from Cucurbit and Pines of Gymnosperms to monocot genera of significance in phylogeny, agricul-torticulture and commerce. The previous volume (IC), dealt with dicot counterparts. Noteworthy features of the volume include molecular phylogeny of Cucurbit, correlation of genomics and micro habitat in Pinus, genome studies in oil and date palm, correlation of molecular data with habit in orchids, congruence of karyotype and molecular data in Festuca and analysis of putative ancestors in Avena. The volume will be of interest to all students of genomics, phylogeny, agri-horticulture and commercial plants.

Phanerogam–Angiosperm: Part E
978-1-57808-507-1; February 2008; c.420 †† pages, hc; $ 127.00


Lower Groups: Part A
978-1-57808-298-8; 2004; 331 pages, hc; $ 106.40 ††


Lower Groups: Part B
978-1-57808-413-5; 2006; 527 pages, hc; $ 133.80 ††

This volume starts with a metabolic story, namely a survey of ancient through modern RNA, followed by the origins of plastids as a driving force for the evolution of algae, the evolution and diversity of dinoflagellates from a molecular perspective, the evolution of diatoms, the biodiversity as well as the evolutionary genomics and systematic- as ascomycota, yeast biodiversity and function, evolutionary-relationships among species of the Aspergillus subgenera Aspergillus and Fumigati, polymerase chain reaction-based methods in Fusarium taxonomy, using molecular markers to study host-pathogen co-evolution, internally transcribed spaces of the 18S-5.8S-26S nuclear ribosomal DNA in land plant systematics (with special emphasis on bryophytes), the molecular phylogeny and biogeography of Plagioclina, and genome studies of cactus.

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PLANT NUTRITION
Growth and Diagnosis
Editors:
Ramdane Dris: University of Helsinki, Finland
Farouk Hassan Abdelaziz: Minia University, Egypt
S.M. Jain: IAEA, Vienna, Austria
978-1-57808-230-8; 2002; 324 pages, hc; $ 105.30
Contains papers presented at a workshop on plant nutrition held at the University of Helsinki, Finland in December 2000. The volume’s 43 contributions present worldwide research in the field on a wide array of topics, particularly revolving around efficient fertilizer use. Contributions focus on individual crops or groups of crops grown for food and renewable raw materials, with information presented on crop biology, plant and soil analysis data, nutrient uptake and removable figures, recommendations for fertilizer use, and current fertilizing practices in different topical, subtropical, and temperate countries.

PLANT MICRONUTRIENTS
C.P. Sharma
978-1-57808-416-6; 2006; 272 pages + 6 color plates, hc; $ 100.20
This book addresses biochemical and physiological roles of micronutrients in plants and the diverse ways in which they react to limitations in micronutrients supply, contributing to global constraints in crop production. The book is presented in two parts. Part I deals with roles of micronutrients and the changes induced in plants in response to their inadequate supply. Part II addresses the factors contributing to micronutrients deficiency, their diagnosis, evaluation and management through soil — and plant — based approaches.

“This readable book with many tables and figures and more than one thousand references can serve not only as useful source of information for researchers in the area of plant nutrition but also as a textbook for advanced students.”
— Biologia Plantarum, Vol. 51, No. 2, 2006/07

BIOTECHNOLOGY
Secondary Metabolites
K.G. Ramawat and J.M. Merillon (eds.)
978-1-57808-428-9; January 2007; 586 pages, hc; $ 72.80
This edition, which reflects new research and includes information on fungi and lichen opens up explaining the opportunities for new research. Subsequent chapters cover secondary plant products in nature such as alkaloids and other metabolites, factors affecting the production of secondary metabolites, production of food additives and insecticides, and production of antitumor compounds, alkaloids, steroids, saponins, secondary metabolites by bioconversion, genetic transformation, large-scale production in bioreactors and production of ergot alkaloids. Very interesting chapters include those on lichen products, the Chinese herbal drug industry and secondary metabolites investigated in a variety of cultures, and the collection concludes with information on tools and techniques for the study of plant tissue culture and practical information on culturing and tests.

MYCORRHIZAS
A Molecular Analysis
K.R. Krishna
978-1-57808-362-6; 2005; 328 pages, hc; $ 95.20
The book begins with a chapter on molecular evolution and phylogeny of mycorrhizas. Lucid discussions on cellular physiology, molecular genetics, and molecular regulation of nutrient exchange phenomenon in mycorrhizas form the core of this book. A comparative analysis of the molecular aspects of symbiosis and pathogenesis has been presented in Chapter 5. It also includes certain agriculturally useful aspects of disease control via mycorrhizas. Discussions on recent developments in molecular ecology of mycorrhizas, including most recently enunciated concepts such as ‘nurse functions’, ‘mycoheterotrophy’ are available in chapter 6.

Transformation, transgenics and genetic engineering of mycorrhizas is a unique and futuristic chapter. Applications of genetic engineering of mycorrhizas, as well as recently developed techniques of genetic transformation production of viable transgenic mycorrhizal fungi have been delineated in chapter 7.

It will be useful to researchers/students involved in microbiology, molecular biology, plant biology, agriculture and environment sciences.

THE DEUTEROMYCETES:
MITOSPORIC FUNGI
Classification and Generic Keys
E. Kiffer: Université Nancy I, Vandoeuvre-lès-Nancy, Cedex, France
M. Morelet: Institut National de la Recherche Agronomique, Champenoux, France
978-1-57808-068-7; 2000; 300 pages, hc; $ 95.20
This work is based on the modern classification Deuteromycetes. Barring some tropical examples, it covers essentially genera found in the temperate zone of the Northern Hemisphere. The book will interest medical and veterinary mycologists, phyto-pathologists, food scientists, and ecologists.

“The book plays a pivotal role in explaining conidiogenesis in all its aspects....”
— Sydowia, Vol. 53 (1), 2001

“For all professionals concerned with identification of mitosporic fungi and a major resource for upper-division undergraduate and graduate students in mycology.”
— CHOICE, July 2000, Vol. 37

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www.scipub.net
The principal goal of allelopathy is to foster sustainable agriculture, forestry, and environment. The objective is to minimize the industrial chemicals and to maximize the use of natural resources locally available while improving crop productivity, forestry and the environment.

The technological advances made in allelopathy research in recent years have been created, analyzed, and developed by scientific establishments throughout the world. They present existing and intellectually challenging problems which are solvable using modern techniques. These modern and advanced techniques as described in the chapters presented in this volume are representative of the exciting research and development approaches today.

**NITROGEN ASSIMILATION BY PLANTS**

**Physiological, Biochemical, and Molecular Aspects**

Jean-François Morot-Gaudry (ed.): INRA-Laboratoire de la Nutrition azotée des Plantes, Versailles, France

978-1-57808-139-4; 2001; 470 pages, hc; \$ 132.20

While nitrogenous fertilisers have helped significantly in increasing the yield of farm produce in the last forty years, the non-assimilated nitrates which are carried by drainage water from soils are responsible for polluting the ground water. Moreover, nitrates that accumulate in harvestable vegetative organs are considered to be sources of potential danger for human health. It is, therefore, necessary to view sustained and enhanced agricultural yields in relation to the quality of the environment by increasing the efficiency of nitrogen assimilation by plants.

"... This book deserves a place in university libraries where plant physiology students can use it to supplement plant mineral nutrition information...."

— The Quarterly Review of Biology, Vol. 77, No. 3, September 2002

**ARBUSCULAR MYCORRHIZAE**

**Interactions in Plants, Rhizosphere, and Soils**

A.K. Sharma and B.N. Johri (eds.)

978-1-57808-206-3; 2002; 322 pages, hc; \$ 105.30


**FUNGAL PROTOPLAST**

A Biotechnological Tool

D. Lalithakumari

978-1-57808-093-9; 2000; 198 pages, pb; \$ 55.40

A detailed collection of the results obtained during the long history of the fungal protoplast work that has been published for different species. The overview is supplemented with research into the improvement of biocontrol agents, carried out by the authors. Besides providing an overview of the literature, the book also acquaints one to practical conditions to carry out the work.

"... a small book tightly packed with an enormous amount of information."

— CHOICE, July 2001, Vol. 38, No. 11
TRENTEPOHLIALES: CEPHALEUROS, PHYCOPELTIS, AND STOMATOCHROON

Morphology, Taxonomy, and Ecology
Rufus H. Thompson: University of Kansas, Lawrence, KS, USA
Daniel E. Wujek: Central Michigan University, Mt. Pleasant, MI, USA
978-1-886106-83-3; 1997; 160 pages, hc; $104.20

The book includes descriptions and keys to 41 species and one variety in the three genera. Original descriptions with drawings and micrographs are included; there are 60 plates with 265+ illustrations.

"... It is a superb scholarly publication that facilitates the understanding of this specialized group of green algae and should be of great use to the community of algal scholars including morphologists, taxonomists, systematists and evolutionary biologists."


DETECTION AND ISOLATION OF SOIL FUNGI
Pierre Davet and Francis Rouxel
978-1-57808-125-7; 2000; 188 pages+18 color plates, pb; $55.40

Describes the methods needed to obtain a pure culture of a fungus from a soil sample or from an infected root. The book also presents the techniques and isolation media for a given fungus.

CONTENTS: Introduction; Isolation of Soil Fungi: for What?; How to do it? / General Principles: Extraction and Preparation of Samples; From Soil; From Roots; Isolation Techniques; Isolation from Soil (Direct Isolation Techniques; Baiting Techniques; Direct Extraction); Isolation from Roots (Small Root Pieces; Grinding and Suspension; Baiting); Selectivity Factors (Treatment of the Soil Sample; The Technique; Incubation Conditions); Culturing Techniques; Preparation of the Isolation Medium (Base Elements; Principal Selectivity Factors); Sterilisation of Media (General Procedure; Conservation); Incubation of Petri Dishes; Purification of Isolates / Practical Applications: Basal Media; Techniques and Selective Media; Bibliography; Index of Organic Compounds; Index of Fungi; Index of Techniques and Media.

BIODIVERSITY OF FUNGI
Their Role in Human Life
S.K. Deshmukh and M.K. Rai
978-1-57808-368-8; 2005; 476 pages, hc; $98.60

Examining various aspects of fungal diversity, biologists, botanists, plant pathologists, and related scientists discuss phylogeny, fungi from little-explored and extreme habitats, endophytes in tropical forests and their diversity and ecology; the degradation of organopollutants by ligninolytic basidiomycetes, ectomycorrhizal fungi, aquatic fungi, and other fungi; the exploitation of filamentous fungi as edible crops and in health care for such conditions as cancer and immunodeficiency states, and the biotechnology of Neosartorya; the evolution of fungal diseases in ornamental crops and the exploitation of fungi for organic dyes; and universally primed PCR and fungal protoplast technologies and their possible application in developing new anti-fungal targets.

GENETIC IMPROVEMENT OF COTTON
Johnie N. Jenkins and Sukumar Saha
978-1-57808-393-0; 2006; 1016 pages (2 vols.), hc; $143.40

Comprises the latest findings on how best algal cultures can be utilized as analogues of natural blooms, their utility in understanding the ecological principles and their applications in biotechnology. The text provides an important resource to ecological concepts such as nutrient kinetics, bacterial interactions, response and recovery to environmental perturbations. A sampling of topics: phases, stages and shifts in the life cycles of marine phytoplankton; viral infection in marine eucaryotic microalgae; the trace metal composition of marine microalgae in cultures and natural assemblages; mechanistic models of algal physiology; photobiological response and acclimation of microalgae to light fluctuations; and prospects for paratransgenic applications to commercial mariculture using genetically engineered algae. For scholars and researchers in biological oceanography as well as other scientists, advanced undergraduate and graduate students.

"... [editor] provided a great service to our scientific community by editing this book that represents an obligatory addition to the personal library of senior and junior algologists."

TEXTBOOK OF BIODIVERSITY
K.V. Krishnamurthy
978-1-57808-325-1; 2003; 276 pages, pb; $39.50

Based on course notes for students specializing in plant science and biotechnology, the author has attempted to fill the need for a comprehensive treatment of the growing multidisciplinary field of biodiversity science. Issues such as problems in inventorying species and legal, ethical, and information aspects have been covered.

CONTENTS:
- Biodiversity Science: Definition, Scope, and Constraints
- Genetic Diversity
- Species Diversity: Wild Taxa
- Agrobiodiversity and Cultivated Taxa
- Ecosystem Diversity
- Values and Uses of Biodiversity
- Loss of Biodiversity
- Conservation of Biodiversity
- Management of Plant Biodiversity
- Biodiversity and Biotechnology
- Biodiversity Prospecting and Indigenous Knowledge Systems.

FLOWERS
Evolution of the Floral Architecture of Angiosperms
Guillaume Tcherkez: University of Paris, France
978-1-57808-311-4; 2004; 194 pages, hc; $87.40

This work attempts to synthesize current research on the evolution of flowers of Angiosperms. The author has reconciled the so-called conventional descriptive botanical approach with the more recent molecular approach, in order to more effectively put them in perspective. The emphasis is on the diversity of strategies of fertilization that constitutes one of the characteristics of Angiosperms.

“...is recommended for academic and special libraries with related programming and research.”
— e-STREAMS, Vol. 8, No. 6/7 Index

CONSERVATION OF PLANT GENETIC RESOURCES IN VITRO
M.K. Razdan and E.C. Cocking (eds.)
All chapters are well arranged, illustrated by tables, schemes, pictures and closed by list of references. The book is provided by Subject Index. It may be sincerely recommended to all those who wish to get knowledge on perspectives, methodology of in vitro conservation and cryopreservation of specific crops.

— Biologia Plantarum, Vol. 46 (3), 2003

Volume 1: General Aspects
978-1-886106-76-5; 1997; 328 pages, hc; $98.60

Volume 2: Applications and Limitations
978-1-57808-055-7; 2000; 320 pages, hc; $98.60
SYSTEMATIC BOTANY OF FLOWERING PLANTS
A New Phylogenetic Approach of the Angiosperms of the Temperate and Tropical Regions
R.-E. Spichiger: A l’Universite de Genéve, Switzerland
V.V. Savolainen: Royal Botanical Garden, Kew, UK
Murielle Figeat and Daniel Jeanmonod: Conservatoire et Jardin, Botanique de la Ville de Genêve, Switzerland
978-1-57808-373-2; 2004; 428 pages + 16 color plates + CD Rom; pb *; $ 65.00

This is a translation of the second edition. It has been completely updated and supplemented, and enhanced by the contribution of a new author. The book follows the overall classification of the Angiosperms Phylogeny Group (APG). It takes into account the taxonomic positions of the second publication of this group of researchers (APG II), as well as the new concepts discussed during the Botanical Congress of Saint Louis.

Some new families have been proposed: Droseraceae, Lythraceae, Cornaceae, Oleaceae, Gesneriaceae, and Alliaceae. Some families were completed or combined.

The book includes a CD-ROM illustrating all the families described with photographs of selected species. The CD-ROM also includes the cumulative identification keys of orders and families, as well as two summary tables of all the useful plants with their use and their common names. A list of common names and their corresponding binomials is provided for all the illustrated plants and all the useful plants cited.

* Hardcover also available.

GENETIC DIVERSITY OF CULTIVATED TROPICAL PLANTS
Perla Hamon: Centre Universitaire, Nimes, France
Marc Seguin, Xavier Perrier, and Jean Christophe Glaszmann: CIRAD, Montpellier, France
978-1-57808-264-3; 2003; 359 pages, hc; $ 89.60

Among the major questions that arise when creating and maintaining genetic resource collections are how to construct consensus trees or common minimum trees, and what the reliability and biological significance of such trees are. Contributors of this volume seek answers by examining eleven types of crop plants, selected to represent a wide range of biological types. They also discuss biological and molecular markers, data analysis, and maximizing variability. This volume was updated at the time of translating from the French edition.

KARYOTAXONOMICAL ANALYSIS IN THE UMBELLIFERAE
Michael G. Pimenov et al.
Edited by: Victoria C. Hollowell, Missouri Botanical Garden, Missouri, USA
Foreword by: Friedrich Ehrendorfer, Vienna, Austria
978-1-57808-222-3; 2002; 478 pages, hc; $ 132.20

The book is a critical World summary of all karyological data known up-to-now for the large angiosperm family Umbelliferae (Apiaceae, carrot family) being of considerable economic value. It also contains analysis of these data in comparison with taxonomy. Chromosome numbers are known for the 1755 species distributed over the world; morphometric data—for 341 species. Bibl. 1278.

PLANT SYSTEMATICS
An Integrated Approach
Second Edition
Gurcharan Singh: University of Delhi, India
978-1-57808-351-0; 2004; 572 pages, pb; $ 49.50
978-1-57808-342-8; 2004; 572 pages; hc; $ 95.20

Includes descriptions of all major systems of classification, and significantly, also includes discussion on selected families of flowering plants. The book blends information on classical fundamental aspects with recent developments especially in the field of molecular systematics, cladistics and computer identification. Special attention has been paid to botanical nomenclature, identification and phylogeny of angiosperms with numerous relevant examples.

CONTENTS: Taxonomy and Systematics; Historical Background of Plant Classification; Botanical Nomenclature; Descriptive Terminology; Process of Identification; Hierarchical Classifications; Variation and Speciation; Taxonomic Evidence; Phenetic Methods: Taxometrics; Phylogenetic Methods: Cladistics; Phylogeny of Angiosperms; Major Systems of Classification; Major Families of Angiosperms: Magnoliidae, Alismatidae, Liliidae, Commeliniidae, Ranunculidae, Hamamelidae, Caryophyllidae, Rosidae, Asteridae, Lamiae; Plant Geography.

"...Considerably expanded from the 1999 edition this well-done second edition is steeped in the traditional approach to taxonomy, but with factual and conceptual updating...."
— CHOICE, Vol. 42, No. 8, April 2005

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www.scipub.net
This study of plant anatomy is based on newly available data on the structure and spatial organization of the vascular system of plants. For the first time, by means of a new technique of intracellular moulding, the vascular system can be observed in its length. Many examples are chosen from among the major groups of the plant kingdom to illustrate the vast field of applications of histological moulding: anatomical structures that have so far been little understood or unknown are described and hypotheses relative to the cambial functioning are presented. Following a summary of basic concepts of xylem anatomy, the text is illustrated with many diagrams and photographs of moulds made for the most part with scanning electron microscope.

The successive steps of the technical implementation of moulding, are described with precision. The book is addressed not only to scientists and students, but also to professionals concerned with wood, trees, and plants in general.

"... this book is recommended for anyone who specializes in plant vascular development, structure, or function. The techniques described could also be applied in more general ways, such as in the study of mutant phenotypes."


KEY TO THE VASCULAR PLANTS OF MONGOLIA
V.I. Grubov: Komarov Botanical Institute, St. Petersburg, Russia
978-1-57808-073-1; 2001; 844 pages (2 vols.), hc; $ 201.60

Presents a key to the pteridophytes, gymnosperms, and angiosperms found in the Mongolian People’s Republic. The key comprises 2239 species of vascular plants, relating to 599 genera and 103 families. Families and species are arranged according to A. Engler’s system; diagnostic characteristics of plants are included in the consecutive dichotomous keys for identifying families, genera, and species. The region and habitat where each plant may be found is also given. Detailed line drawings illustrate over 1,000 plants.

ECOLOGY OF SIBERIAN DWARF PINE PINUS PUMILA (PALLAS) REGEL IN KAMCHATKA
Peter. A. Khomentovsky (Reviewed by Jerry Rehfeldt; reviewed and edited by Jim Pojar)
978-1-57808-189-9; 2004; 244 pages, hc; $ 99.70

The author integrates his own field studies into reports of others into the ecology in northeast Asia and the peninsula of the tree that was recognized as a separate species about 140 years ago but has been of little interest to foresters until the past few decades. He looks at taxonomic position, range, and relations in the boreal forests of the northern hemisphere; its place in the plant cover of the target region; its formation in Kamchatka in the Late Cenozoic; morphology and seasonal development, and the development of communities.

VASCULAR ORGANIZATION OF ANGIOSPERMS
A New Vision
Jean-Pierre Andre: Institut National de la Recherche Agronomique, Champenoux, France
978-1-57808-382-4; 2005; 154 pages, pb; $ 44.20

This study of plant anatomy is based on newly available data on the structure and spatial organization of the vascular system of plants. For the first time, by means of a new technique of intracellular moulding, the vascular system can be observed in its length. Many examples are chosen from among the major groups of the plant kingdom to illustrate the vast field of applications of histological moulding: anatomical structures that have so far been little understood or unknown are described and hypotheses relative to the cambial functioning are presented. Following a summary of basic concepts of xylem anatomy, the text is illustrated with many diagrams and photographs of moulds made for the most part with scanning electron microscope.

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COMPENDIA OF WORLD’S MEDICINAL FLORA
Amritpal Singh
978-1-57808-430-2; 2006; 356 pages, pb; $ 61.60

All alternative systems of medicines utilize medicinal plants for formulations. The present work is aimed at documentation of chemical composition, medicinal use and modern investigative work on medicinal plants. As the name of the title suggests, the work includes rare medicinal plants used globally in medicine.

As research is being done on medicinal plants, more and more phytochemicals are being discovered. On basis of this, traditional uses of medicinal plants are being confirmed. The work will be a valuable guide for practitioners of alternative systems of medicine. It will be useful for phytochemists, ethnomontanists and herbal pharmacists who will find unique data about less documented medicinal plants.

VASCULAR PLANTS OF THE RUSSIAN FAR EAST
Volume 1: Lycopodiophyta, Juncaceae, Poaceae (Gramineae)
N.N. Tzvelev (ed.)
978-1-57808-290-2; 2003; 544 pages, hc; $ 184.80

This is the first of the ten volumes covering the extensive region, that lies at the interface of Eurasia and America. It covers 160 families, nearly 800 genera and about 4000 species. A list of families in order of treatment is given.
PLANTS OF CENTRAL ASIA
Plant Collections from China and Mongolia
V.I. Grubov (Editor-in-Chief)

The text has been update in the English edition for some of these volumes.

Volume 1
Introduction, Ferns, Bibliography
978-1-57808-060-1; 1999; 198 pages, hc; $ 77.30

Volume 2
Chenopodiaceae
978-1-57808-087-8; 2000; 198 pages, hc; $ 73.90

Volume 3
Sedges — Rushes
978-1-57808-114-1; 2000; 160 pages, hc; $ 88.50

Volume 4
Gramineae (Grasses)
978-1-57808-115-8; 2002; 328 pages, hc; $ 107.50

Volume 5
Verbenaceae — Scrophulariaceae
978-1-57808-116-5; 2002; 250 pages, hc; $ 99.70

Volume 6
Equisetaceae — Butomaceae
978-1-57808-117-2; 2002; 100 pages, hc; $ 61.60

Volume 7
Liliaceae to Orchidaceae
978-1-57808-118-9; 2003; 186 pages, hc; $ 95.20

Volume 8a
Leguminosae
978-1-57808-119-6; 2003; 182 pages, hc; $ 94.10

Volume 8b
Legumes, Genus: Oxytropis
978-1-57808-120-2; 2003; 122 pages, hc; $ 77.30

Volume 8c
Astragalus L.
978-1-57808-341-1; 2004; 262 pages, hc; $ 98.60

Volume 9
Salicaceae — Polygonaceae
978-1-57808-121-9; 2005; 207 pages, hc; $ 95.20

Volume 10
Araliaceae, Umbelliferae, Cornaceae
978-1-57808-122-6; 2005; 156 pages, hc; $ 86.80

“A number of species have been recorded in the target territory for the first time, including 8 previously unknown species.”

— Huntia 12(2), 2006

Volume 11
978-1-57808-123-3; January 2007; 148 pages, hc; $ 76.20

Volume 12
978-1-57808-441-8; February 2007; 206 pages, hc; $ 106.40

Volume 13
Plumbaginaceae, Oleaceae, Buddlejaceae, Gentianaceae, Menyanthaceae, Apocynaceae, Asclepiadaceae
978-1-57808-421-0; February 2007; 150 pages, hc; $ 95.20

This volume deals with leadwort (Plumbaginaceae), olive (Oleaceae), butterfly-bush (Buddlejaceae), gentian (Gentianaceae), buck-bean (Menyanthaceae), dogbane (Apocynaceae) and milkweed (Asclepiadaceae) families.
The book includes 4 plates, 5 maps of distribution ranges.

Volume 14a
Compositeae (Anthemideae)
978-1-57808-422-7; February 2007; 176 pages, hc; $ 98.60

This volume deals with the tribe Anthemideae of the largest family of Compositeae. The book contains 6 plates, 8 maps of distribution ranges.

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Volume 15, Part A:
Ferns and Fern-Allies
Monika Shaffer-Fehre (ed.)
978-1-57808-384-8; 2006; 336 pages, hc; $ 100.70

This volume deals with the tribe Anthemideae of the largest family of Compositeae. The book contains 6 plates, 8 maps of distribution ranges.

Volume 15, Part B:
Ferns and Fern-Allies
Monika Shaffer-Fehre (ed.)
978-1-57808-410-4; 2006; 336 pages, hc; $ 100.70

PINE FORESTS
Utilization of its Products
V.N. Vorob’ev (ed.)
978-1-57808-396-1; 2006; 271 pages, hc; $ 106.40

The forests of Siberian stone pine are vast and their products, including timber, nuts, and resin are valuable economically. However, managing the forests is problematic, largely due to questions about their morphophysiological, ontogenetic and eco-geographic circumstances, how they relate to populations in and out of the forest, how they reproduce and how they form resin. The author presents over 20 years of research about the Siberian stone pine, including its ecology, cone production, growth characteristics, cone yield, resin productivity, and the cone yield, growth and resin productivity of the Siberian stone pine under experiments modifying the relations between lead and root. The book ends with recommendations on comprehensive commercial utilizations.

A Revised Handbook to the
FLORA OF CEYлон
M.D. Dassanayake (series editor)

The original work by Henry Trimen at the turn of the twentieth century, updated by A.H.G. Alston in the 1930s, has been virtually unavailable for some time. In addition, progress in the science has dictated significant changes and updates. In this revision project sponsored by the U. of Peradeniya and government agencies of Sri Lanka and the Overseas Development Administration of the UK, contributors offer the latest on fern allies such as psilotaceae and isoetaceae, laptosporangiate (aquatic) ferns such as salviniaceae and marsileaceae, and the full range of eusporangiate ferns.

Volume XV, Part A:
Ferns and Fern-Allies
Monika Shaffer-Fehre (ed.)
978-1-57808-384-8; 2006; 209 pages, hc; $ 100.70

Volume XV, Part B:
Ferns and Fern-Allies
Monika Shaffer-Fehre (ed.)
978-1-57808-410-4; 2006; 336 pages, hc; $ 100.70
FLORA OF SIBERIA
L.I. Malyschev (Editor-in-Chief)

Volume 1: Lycopodiaceae
Hydrocharitaceae
978-1-57808-072-4; 2000; 208 pages, hc; $ 84.00

Volume 2: Poaceae (Gramineae)
978-1-57808-101-1; 2001; 372 pages, hc; $ 98.60

Volume 3: Cyperaceae
978-1-57808-102-8; 2001; 280 pages, hc; $ 93.00

Volume 4: Araceae—Orchidaceae
978-1-57808-103-5; 2001; 250 pages, hc; $ 106.40

Volume 5: Salicaceae—Amaranthaceae
978-1-57808-104-2; 2002; 316 pages, hc; $ 123.20

Volume 6: Portulacaceae—Ranunculaceae
978-1-57808-105-9; 2003; 312 pages, hc; $ 123.20

Volume 7: Berberidaceae—Grossulariaceae
978-1-57808-106-6; 2004; 323 pages, hc; $ 127.70

Volume 8: Rosaceae
978-1-57808-107-3; 2004; 208 pages, hc; $ 103.00

Volume 9: Fabaceae (Leguminosae)
978-1-57808-108-0; 2006; 286 pages, hc; $ 107.50

Volume 10: Geraniaceae—Cornaceae
978-1-57808-109-7; 2006; 326 pages, hc; $ 121.00

Volume 11: Pyrolaceae—Lamiaceae (Labiatae)
978-1-57808-110-3; 2006; 310 pages, hc; $ 117.60

Volume 12: Solanaceae—Lobeliaceae
978-1-57808-111-0; May 2007; 222 pages, hc; $ 106.40

Volume 13: Asteraceae (Compositae)
978-1-57808-112-7; September 2007; c.514 pages, 16 color plates with 61 photos, hc; $ 144.00

Alphabetical Indexes to Volumes I-XXX
E.G. Bobrov and N.N. Tzvelev
978-1-57808-334-3; 2004; 254 pages, hc; $ 111.40

This volume consists mainly of separate indexes to the scientific (Latin) names of the families and the genera and species in the Flora.

OAKS OF ASIA
Yu.L. Menitsky
978-1-57808-229-2; 2005; 549 pages, hc; $ 140.00

Asia’s forests contain a number of oak trees (Quercus L.), which are difficult to classify and describe in terms of their phylogenetic relationships, evolution, distribution according to climatic regions, ecology, and relationship with the oaks of the Old World. Author here offers 20 years of research into these questions starting with a description of the family Fagaceae Dumort and a morphological and biological description of genus Quercus L. Author then turns to the systematics and geography of the oaks of Asia, their distribution and participation in the forest communities of Asia, and the phylogenetic series of species and the evolutionary pathways of Old World oaks. It includes resources and an index of the Latin names of plants.

KOMAROVIA
D.V. Geltman and A.N. Sennikov (eds.)
A periodical of the Herbarium at the Komarov Botanical Institute of the Russian Academy of Sciences.

Vol. 2, 2002
978-1-57808-248-3; 2002; 132 pages, pb; $ 61.60

Vol. 3, 2003
978-1-57808-329-9; 2003; 138 pages, pb; $ 61.60

Principles and Practices of Plant Genomics; Volume 1 GENOME MAPPING
Editors:
C. Kole: Department of Horticulture, The Pennsylvania State University, USA
A.G. Abbott: Department of Genetics and Biochemistry, Clemson University, South Carolina, USA
978-1-57808-525-5; February 2008; ca.420 pages, hc; US $ 109.50

This volume briefly introduces the historical background and overview on genome mapping. Chapters deliberating on different types of molecular markers, their detection, relative merits, shortcomings and applications; types of mapping populations, methods of their generation, applications; basic concepts and schematic depiction of construction of genetic linkage maps; concepts and strategies of mapping genes controlling qualitative and quantitative traits on framework genetic linkage maps; rationale, methodologies and implications of comparative mapping; principles, strategies, and outcome of map-based cloning; overviews on the recent advances on plant genomics and genome initiatives; and finally computer strategies and software employed in plant molecular mapping and breeding.