Plant Pathology Elsevier

Plant Systematics, Third Edition, has made substantial contributions to plant systematics courses at the upper-undergraduate and first year graduate level, with the first edition winning The New York Botanical Garden's Henry Allan Gleason Award for outstanding recent publication in plant taxonomy, plant ecology or plant geography. This third edition continues to provide the basis for teaching an introduction to the morphology, evolution and classification of land plants. A foundation of the approach, methods, research goals, evidence and terminology of plant systematics are presented, along with the most recent knowledge of evolutionary relationships of plants and practical information vital to the field. In this new edition, the author includes greatly expanded treatments on families of flowering plants, as well as tropical trees (all with full-color plates), and an updated explanation of maximum likelihood and Bayesian inference algorithms. Chapters on morphology and plant nomenclature have also been enhanced with new material. Covers research developments in plant molecular biology Features clear, detailed cladograms, drawings and photos Includes major revisions to chapters on phylogenetic systematics and plant morphology

Plant Disease, Volume I: How Disease is Managed is part of a five-volume treatise that discusses the sociology of plant pathology. This volume discusses the great variety of techniques for the diagnosis of plant disease; crop destruction; and theory behind the art of disease management. It also explores topics on how society is constraining the possibilities for management; management of diseases through changing the environment; biological control of plant diseases; weed management through pathogens; and the epidemiologic and genetic concepts of managing host genes. Subsequent chapter presents the management of plant disease with chemicals and some examples of diseases that benefit man and even a few that benefit plants. This book also describes the organization and operation of society-supported disease management activities, as well as important advisory services provided by the industry. This volume concludes with proposals for the education of the practitioners of plant pathology. This work is intended for the advanced researcher in plant pathology to broaden his views, stimulate his thinking, and help to synthesize ideas.

Plant diseases are usually caused by fungi, bacteria and viruses. Also there are other diseases which are caused by adverse environmental conditions. Plant disease resistance protects plants from pathogens in two ways: by pre-formed structures and chemicals, and by infection-induced responses of the immune system. Relative to a susceptible plant, disease resistance is the reduction of pathogen growth on or in the plant, while the term disease tolerance describes plants that exhibit little disease damage despite substantial pathogen levels. Disease outcome is determined by the three-way interaction of the pathogen, the plant and the environmental conditions. Some of the earliest and most prominent uses of genetic modification technology in crops have related to disease management. The insertion of a Bacillus thuringiensis gene into crops such as corn resulted in protection against damage caused by certain insects, eliminating the need for pesticides against those particular pests is one example. Another example, the ability of crops to thrive despite the application of glyphosate, was brought about by modifying crops so that the pathway affected by the chemical to cause plant death is cycled more regularly, helping the crop to survive. The book provides thorough information about bacteria and bacterial plant diseases. It covers history, structure, classification, special DNA characteristics and special activities of bacteria. The book fulfil not only the need of the students to find literature on the diseases and other pathological conditions difficult to obtain and access, but also provide complete systematic treatment of the subject from their point of view.

Plant Pathology: An Advanced Treatise, Volume III: The Diseased Population Epidemics and Control deals with the epidemics of the diseased population of plants and their forecasting and control. The book highlights the public health implications of plant pathology, giving major consideration to inoculum production, dispersal, and control. This volume is organized into 14 chapters and begins with an overview of populations of inoculum and the consequences of cultivation, emphasizing the inoculum potential. The next chapters focus on the autonomous dispersal of plant pathogens through the soil, seeds, or plant parts; the inoculum dispersal by animals, humans, air, and water; and the factors and processes that trigger an epidemic. The book also introduces the reader to the physical, chemical, and biological aspects of the performance of fungicides on plants and in soil, and then concludes by discussing the genetics of disease resistance and problems associated with plant breeding. This book is a valuable resource for those who are interested in a theoretical treatment of plant pathology and in the broad ecological relationships among organisms, as well as for research workers and advanced students of applied biology.

This book is part of the Plant Pathology in the 21st Century Series, started in the occasion of the IX International Congress of Plant Pathology, Torino, 2008. In conjuction with the Xth International Congress of Plant Pathology, held in Beijing in August 2013. Although deriving from a Congress, the book will not have the format of traditional Proceedings, but will be organized as a resource book. It will be based on invited lectures presented at the Congress as well as by other chapters selected by the editors among offered papers.

This book will cover a topic very important in the field of plant pathology, dealing with detection and diagnostics. This field of research is continuously moving forwards, due to innovation in techniques. The application of new detection and diagnostic technologies are relevant to many applied fields in agriculture. The different chapters will provide a very complete figure of the topic, from general and basic aspects to practical aspects.

The nervous system is a complex, sophisticated system that regulates and coordinates body activities. It is made up of two major divisions: the central nervous system consisting of the brain and spinal cord and the peripheral nervous system. This consists of all other neural elements, including the peripheral nerves and the autonomic nerves. Peripheral

nerves are the essential connections between the brain and spinal cord and the body. Without nerves there is no movement or sensation. Our Wired Nerves: The Human Nerve Connectome, reviews the essential anatomy and physiology of the peripheral nerve. It introduces the reader to what neuropathies are, how pain arises from damaged nerves and how nerves might be regenerated, including new and exciting ideas over how to coax their regrowth. Written by Dr. Douglas Zochodne leading expert in the field, and first book to focus on the Peripheral nerves it will surely be an essential reference for researchers and clinicians alike. Discusses the barriers to nerve regrowth and new strategies to reverse them Reviews of disorders of the peripheral nerves Exams reasons for nerve injuries Reviews recent discoveries in nerve research

Plant Pathology presents information and advances in plant pathology including disease induction and development and disease resistance and control. This book is organized into two major parts encompassing 14 chapters that focus on diseases, pathogenicity, and pathogen variability. The first part of the book deals with general considerations of disease, the disease cycle, parasitism and pathogenicity, and the variability in pathogens. This is followed by a presentation of the mechanisms by which pathogens cause disease and plants resist disease. Core chapters focus on the effects of pathogen-produced enzymes, toxins, growth regulators, and polysaccharides on the structural organization and on the basic physiological processes of photosynthesis, translocation, and respiration. The chapters also discuss the defense mechanisms of the plant. Moreover, this book explains the genetics of host-parasite interaction, effects of environment on disease development, and control. The second part of the book deals with the infectious diseases caused by fungi, bacteria, parasitic higher plants, viruses, and nematodes. This part also looks into the noninfectious diseases caused by environmental factors. The diseases caused by each type of pathogen are discussed comprehensively as a group and are subsequently discussed individually in detail. This book includes diagrams of cycles for each disease to create visual images for better understanding of the disease and message retention. This book is ideal for students with introductory course in plant pathology.

A fully revised review of the latest research in molecularbasis of plant abiotic stress response and adaptation Abiotic stressors are non-living environmental stressors thatcan have a negative impact on a plants ability to grow and thrivein a given environment. Stressors can range from temperature stress(both extreme heat and extreme cold) water stress, aridity,salinity among others. This book explores the full gamut of plantabiotic stressors and plants molecular responses and adaptations toadverse environmental conditions. The new edition of Plant Abiotic Stress providesup-to-date coverage of the latest research advances in plantabiotic stress adaptation, with special emphasis on the associatedand integrative aspects of physiology, signaling, andmolecular-genetics. Since the last edition, major advances inwhole genome analysis have revealed previously unknown linkagesbetween genes, genomes, and phenotypes, and new biological and–omics approaches have elucidated previously unknown cellularmechanisms underlying stress tolerance. Chapters are organized by topic, but highlight processes thatare integrative among diverse stress responses. As with the firstedition, Plant Abiotic Stress will have broad appeal toscientists in fields of applied agriculture, ecology, plantsciences, and biology.

Advances in Plant Pathology, Volume 6: Genetics of Plant Pathogenic Fungi provides information pertinent to the fundamental aspects of plant pathology. This book discusses the trends in plant pathology towards genetic and molecular genetic analysis of the factors determining host–pathogen interaction. Organized into 37 chapters, this volume begins with an overview of the potential of recombinant DNA technology in genetical plant pathology. This text then examines the basic features of sexual and asexual phases of oosporic fungi. Other chapters consider the taxonomy, epidemiology, genetics, and physiology of the downy mildews that includes a crop-by-crop consideration. This book discusses as well the vesicular-arbuscular mycorrhizal fungi and their potential to increase plant production in soils having inadequate mineral nutrients such as zinc and phosphorus. The final chapter deals with the importance of the genus Typhula that contains both parasites and saprophytes. This book is a valuable resource for plant pathologists, students, teachers, and research scientists.

A comprehensive review of how nutrients enter a fungus and their fate once inside the cell. 2000 references.

This fifth edition of the classic textbook in plant pathology outlines how to recognize, treat, and prevent plant diseases. It provides extensive coverage of abiotic, fungal, viral, bacterial, nematode and other plant diseases and their associated epidemiology. It also covers the genetics of resistance and modern management on plant disease. Plant Pathology, Fifth Edition, is the most comprehensive resource and textbook that professionals, faculty and students can consult for well-organized, essential information. This thoroughly revised edition is 45% larger, covering new discoveries and developments in plant pathology and enhanced by hundreds of new color photographs and illustrations. The latest information on molecular techniques and biological control in plant diseases Comprehensive in coverage Numerous excellent diagrams and photographs A large variety of disease examples for instructors to choose for their course

Plant PathologyBy George N. Agrios

This book offers a collection of information on successive steps of molecular ‘dialogue’ between plants and pathogens. It additionally presents data that reflects intrinsic logic of plant-parasite interactions. New findings discussed include: host and non-host resistance, specific and nonspecific elicitors, elicitors and suppressors, and plant and animal immunity. This book enables the reader to understand how to promote or prevent disease development, and allows them to systematize their own ideas of plant-pathogen interactions. * Offers a more extensive scope of the problem as compared to other books in the market * Presents data to allow consideration of host-parasite relationships in dynamics and reveals interrelations between pathogenicity and resistance factors * Discusses beneficial plant-microbe interactions and practical aspects of molecular investigations of plant-parasite relationships * Compares historical study of common and specific features of plant immunity with animal immunity

Comparative Plant Virology provides a complete overview of our current knowledge of plant viruses, including background information on plant viruses and up-to-date aspects of virus biology and control. It deals mainly with concepts rather than detail. The focus will be on plant viruses but due to the changing environment of how virology is taught, comparisons will be drawn with viruses of other kingdomes, animals, fungi and bacteria. It has been written for students of plant virology, plant pathology, virology and microbiology who have no previous knowledge of plant viruses or of virology in general. Boxes highlight important information such as virus definition and taxonomy Includes profiles of 32 plant viruses that feature extensively in the text Full color throughout

The microscopic soil and plant nematodes are parasitic to crop plants. In order to diagnose these damaging nematodes, associating them with crop damage is dependent on determining the symptoms of

their effects on plants or plant growth. The specific nematodes can only be seen if examining the plant organs including the roots, rhizomes, bulbs, corns, and tubers. This book aims to help those working with crop markets to identify and improve the diagnosis of nematodes of agricultural importance. The introductory chapter explores the biology and parasitism. Crop chapters, divided into grain legumes, vegetables, flower crops, cereals, roots, tuber crops, tree, and plantation include distribution, identification, symptoms, and diagnosis with management suggestions. * Over 200 color images; full color book * Includes easy diagnosis techniques * Coverage includes identification, distribution, symptons, and control

Allelopathy studies the various aspects of allelopathy, the direct or indirect harmful effect by one plant (including microorganisms) on another through the production of chemical compounds that escape into the environment. Chapters presents discussions on topics on the history of research on allelopathy; roles of allelopathy in phytoplankton succession; evidence for chemical inhibition of nitrification by vegetation; roles of allelopathy in fire cycle in California annual grasslands; and the impact of allelopathy on horticulture and forestry. Botanists, horticulturists, biologists, and agriculturists will find the book a good reference book.

Considering the ever-increasing global population and finite arable land, technology and sustainable agricultural practices are required to improve crop yield. This book examines the interaction between plants and microbes and considers the use of advanced techniques such as genetic engineering, revolutionary gene editing technologies, and their applications to understand how plants and microbes help or harm each other at the molecular level. Understanding plant-microbe interactions and related gene editing technologies will provide new possibilities for sustainable agriculture. The book will be extremely useful for researchers working in the fields of plant science, molecular plant biology, plant-microbe interactions, plant engineering technology, agricultural microbiology, and related fields. It will be useful for upper-level students and instructors specifically in the field of biotechnology, microbiology, biochemistry, and agricultural science. Features: Examines the most advanced approaches for genetic engineering of agriculture (CRISPR, TALAN, ZFN, etc.). Discusses the microbiological control of various plant diseases. Explores future perspectives for research in microbiological plant science. Plant-Microbial Interactions and Smart Agricultural Biotechnology will serve as a useful source of cutting-edge information for researchers and innovative professionals, as well as upper-level undergraduate and graduate students taking related agriculture and environmental science courses.

Toxins in Plant Disease presents a comprehensive coverage of plant disease toxins, both those for which there are reasonable evidence and those with fewer credentials. This book is primarily concerned with the mechanism wherein substances that interfere with metabolism or that alter the normal structure of protoplasm are produced and released (category 1); this includes the traditional toxins, which are usually of low molecular weight. It also describes category 2 mechanism, wherein substances that interfere with normal control of growth and development are produced and released; these microorganisms are classified as growth-affecting compounds. Moreover, this text addresses some high-molecular-weight compounds that contribute to vascular dysfunction. It further talks about the production, isolation, assay, genetics of production, mechanism of action, structure-activity relationship, metabolism, and applications of these toxins. This publication will provide a rational basis for future investigations and contribute to the eventual understanding of the role that toxins play in disease causation.

Plant Pathology: An Advanced Treatise, Volume I: The Diseased Plant presents an integrated synthesis of the scope, importance, and history of plant pathology, emphasizing the concept of disease, not of diseases. The book focuses on pathological processes, defense devices, predisposition, and therapy of the diseased plant. It explores the normal pathways that are obstructed in sick plants; how the pathogen causes dysfunction; and how the host plant reacts to the pathogen. This book also considers the logistics and the strategy of disease and how to combat it. This volume is organized into 15 chapters and begins with an overview of plant pathology, its history, and its relation to other sciences, along with plant predisposition to disease, and the resistance-susceptibility problem. The next chapters examine how sickness in plants is recognized and diagnosed, the tissue breakdown in diseases, and the effects of parasites on the processes in plants. The impact of disease on water balance and respiration in plants and the histology of disease resistance in plants are also explained. This volume also covers the physiological and chemical basis of defense by higher plants against potential or invading pathogens and the hypersensitivity concept in plant pathology. The final chapter discusses the physical and chemical therapy of the diseased plant. This book will appeal to all who are interested in a theoretical treatment of plant pathology and in the broad ecological relationships among organisms, as well as to research workers and advanced students of applied biology.

The seminal text Plant Virology is now in its fifth edition. It has been 10 years since the publication of the fourth edition, during which there has been an explosion of conceptual and factual advances. The fifth edition of Plant Virology updates and revises many details of the previous edition while retaining the important earlier results that constitute the field's conceptual foundation. Revamped art, along with fully updated references and increased focus on molecular biology, transgenic resistance, aphid transmission, and new, cutting-edge topics, bring the volume up to date and maintain its value as an essential reference for researchers and students in the field. Thumbnail sketches of each genera and family groups Genome maps of all genera for which they are known Genetic engineered resistance strategies for virus disease control Latest understanding of virus interactions with plants, including gene silencing Interactions between viruses and insect, fungal, and nematode vectors Contains over 300 full-color illustrations

Dictionaries are didactic books used as consultation instruments for self-teaching. They are composed by an ordered set of linguistic units which reflects a double structure, the macrostructure which correspond to the word list and the microstructure that refers to the contents of each lemma. The great value of dictionaries nests in the fact that they establish a standard nomenclature and prevent in that way the appearance of new useless synonyms. This dictionary contains a total of about 27.500 main English entries, and over of 130.000 translations that should normally sufficiently cover all fields of life sciences. The basic criteria used to accept a word a part of the dictionary during the development period in order of importance were usage, up-to-dateness, specificity, simplicity and conceptual relationships. The dictionary meets the standards of higher education and covers all main fields of life sciences by setting its primary focus on the vastly developing fields of cell biology, biochemistry, molecular biology, immunology, developmental biology, microbiology, genetics and also the fields of human anatomy, histology, pathology, physiology, zoology and botany. The fields of ecology, paleontology, systematics, evolution, biostatistics, plant physiology, plant anatomy, plant histology, biometry and lab techniques have been sufficiently covered but in a more general manner. The latest Latin international anatomical terminology "Terminologia Anatomica" or "TA" has been fully incorporated and all anatomical entries have been given their international Latin TA synonym. This dictionary will be a valuable and helpful tool for all scientists, teachers, students and generally all those that work within the fields of life sciences.

Plant Pathology, Third Edition, provides an introduction to the fundamental concepts of plant pathology, incorporating important new developments in the field. The present volume also follows closely the organization and format of the Second Edition. It includes two new chapters, ""Plant Disease Epidemiology"" and ""Applications of Biotechnology in Plant Pathology."" Extensively updated new information has been added about the history of plant pathology, the stages in the development of disease, the chemical weapons of attack by pathogens, and the genetics of plant disease. The book is organized into three parts. Part I discusses basic concepts such as classification of plant diseases; parasitism and disease development; how pathogens attack plants; effects of pathogens on plant physiology; plant defenses against pathogens; and genetics, epidemiology, and control of plant diseases. Part II on specific plant diseases covers diseases caused by fungi, prokaryotes, parasitic higher plants, viruses, nematodes, and

flagellate protozoa. Part III deals with applications of biotechnology in plant pathology.

It has been ten years since the publication of the third edition of this seminal text on plant virology, during which there has been an explosion of conceptual and factual advances. The fourth edition updates and revises many details of the previous editon, while retaining the important older results that constitute the field's conceptual foundation. Key features of the fourth edition include: * Thumbnail sketches of each genera and family groups * Genome maps of all genera for which they are known * Genetic engineered resistance strategies for virus disease control * Latest understanding of virus interactions with plants, including gene silencing * Interactions between viruses and insect, fungal, and nematode vectors * New plate section containing over 50 full-color illustrations

Focusing on the great variety of research being done in the field of postharvest pathology, this volume presents a collection of topics concerning the diseases of harvested fruits and vegetables. Each chapter represents a separate unit which taken together create a better understanding of the whole subject. Topics include the causal agents of postharvest diseases of fruits and vegetables, their sources and their ways of penetration into the host; factors that may accelerate the development of the pathogen in the host - and those that suppress them; a list of the main pathogens of fruits and vegetables, their hosts and the diseases elicited by them; and a detailed description of the major diseases of selected groups of fruits and solanaceous vegetable fruits. Attack mechanisms of pathogens and defense mechanisms of the host are examined as are treatments aimed at suppressing postharvest diseases. The search for natural and safe chemical compounds and the variety of alternative physical and biological methods for use in postharvest disease control are emphasized. Teachers and students who focus on postharvest pathology, scientists in research institutes, companies dealing with fruit and vegetable preservation technologies and for all those striving to improve the quality of harvested fruits and vegetables will find this book of great interest.

Medicinal Plants for Holistic Health and Well-Being discusses, in depth, the use of South African plants to treat a variety of ailments, including tuberculosis, cancer, periodontal diseases, acne, postmacular hypomelanosis, and more. Plants were selected on the basis of their traditional use, and the book details the scientific evidence that supports their pharmacological and therapeutic potential to safely and effectively treat each disease. Thus, this book is a valuable resource for all researchers, students and professors involved in advancing global medicinal plant research. Many plants found in South Africa are also found in other parts of the world. Each chapter highlights plants from other worldwide locations so that scientists can study which plants belong to the same family, and how similar qualities can be used to treat a specific disease. Uses traditional medicine as an efficient means to identify and further investigate South African and similar plants used as lead compounds in modern drug discovery Includes a number of chapters dedicated to using medicinal plants to treat various skin disorders, which is not covered often in other books on medicinal plants Organized by specific diseases, with vital evidence-based data related to the bioactivity, pharmacological potential, chemical structure and safety information

Epilepsy is a devastating group of neurological disorders characterized by periodic and unpredictable seizure activity in the brain. There is a critical need for new drugs and approaches given than at least one-third of all epilepsy patients are not made free of seizures by existing medications and become "medically refractory". Much of epilepsy research has focused on neuronal therapeutic targets, but current antiepileptic drugs often cause severe cognitive, developmental, and behavioral side effects. Recent findings indicate a critical contribution of astrocytes, star-shaped glial cells in the brain, to neuronal and network excitability and seizure activity. Furthermore, many important cellular and molecular changes occur in astrocytes in epileptic tissue in both humans and animal models of epilepsy. The goal of Astrocytes and Epilepsy is to comprehensively review exciting findings linking changes in astrocytes to functional changes responsible for epilepsy for the first time in book format. These insights into astrocyte contribution to seizure susceptibility indicate that astrocytes may represent an important new therapeutic target in the control of epilepsy. Astrocytes and Epilepsy includes background explanatory text on astrocyte morphology and physiology, epilepsy models and syndromes, and evidence from both human tissue studies and animal models linking functional changes in astrocytes to epilepsy. Beautifully labelled diagrams are presented and relevant figures from the literature are reproduced to elucidate key findings and concepts in this rapidly emerging field. Astrocytes and Epilepsy is written for neuroscientists, epilepsy researchers, astrocyte investigators as well as neurologists and other specialists caring for patients with epilepsy. Presents the first comprehensive book to synthesize historical and recent research on astrocytes and epilepsy into one coherent volume Provides a great resource on the field of astrocyte biology and astrocyte-neuron interactions Details potential therapeutic targets, including chapters on gap junctions, water and potassium channels, glutamate and adenosine metabolism, and inflammation

Plant Virology, Second Edition, was written to cover the substantial developments in many areas of plant virology since the first edition was published. Advances have been made in all branches of the subject, but these have been most far reaching with respect to the structure of viruses and of their components, and in the understanding of how viral genomes are organized and how viruses replicate in cells. Significant developments have also occurred in the understanding of how viruses are transmitted by invertebrates and in the application of control measures for specific diseases. The taxonomy of viruses has advanced significantly, and there are now 25 internationally approved families and groups of plant viruses. All these developments have required that most sections be entirely rewritten. This book is intended primarily for graduate students in plant pathology, plant virology, general virology, and microbiology, and for teachers and research workers in these fields. It should also prove useful to some people in related disciplines—molecular biologists, biochemists, plant physiologists, and entomologists.

Intended as a text for plant bacteriology courses and as a reference for plant pathologists in agricultural extension services and experimental stations, Fundamentals of Bacterial Plant Pathology presents current information on bacterial morphology, taxonomy, genetics, and ecology. Diagnosis, disease management, and the molecular basis of host-pathogen interactions are examined. The book is well illustrated, includes both subject and taxonomic indexes, and provides suggestions for the further reading. Key Features * Provides an overview on phytopathogenic prokaryotes and plant prokaryote diseases * Contains detailed descriptions of topics of current interest including: * Molecular Genetics of Pathogenesis * Modern taxonomy and ecological behaviors of phytopathogenic prokaryotes * Biological control of plant prokaryote diseases * Presents full descriptions of eighteen selected diseases of economic interest

The first review series in virology and published since 1953, Advances in Virus Research covers a diverse range of in-depth reviews, providing a valuable overview of the field. The series of eclectic volumes are valuable resources to virologists, microbiologists, immunologists, molecular biologists, pathologists, and plant researchers. Volume 91 features articles on control of plant virus diseases. Contributions from leading authorities Comprehensive reviews for general and specialist use First and longest-running review series in virology

Edited by Jean-Claude Kader and Michel Delseny and supported by an international Editorial Board, Advances in Botanical Research publishes in-depth and up-to-date reviews on a wide

range of topics in plant sciences. Currently in its 47th volume, the series features a wide range of reviews by recognized experts on all aspects of plant genetics, biochemistry, cell biology, molecular biology, physiology and ecology. This eclectic volume features six reviews on cutting-edge topics of interest to post-graduates and researchers alike. * Multidisciplinary reviews written from a broad range of scientific perspectives * For over 40 years, series has enjoyed a reputation for excellence * Contributors internationally recognized authorities in their respective fields

Plant pathology is an applied science that deals with the nature, causes and control of plant diseases in agriculture and forestry. The vital role of plant pathology in attaining food security and food safety for the world cannot be overemphasized.

This volume is a collection of review articles by leading scientists involved in various aspects of work involving plant hairs, or "trichomes." The scope of the volume is broad, representing the fact that there is interest in these structures for researchers in diverse fields including plant anatomy, taxonomy, cell and molecular biology, biochemistry, and ecology.

Edited by Jean-Claude Kader and Michel Delseny and supported by an international Editorial Board, Advances in Botanical Research publishes in-depth and up-to-date reviews on a wide range of topics in plant sciences. Currently in its 50th volume, the series features a wide range of reviews by recognized experts on all aspects of plant genetics, biochemistry, cell biology, molecular biology, physiology and ecology. This eclectic volume features six reviews on cutting-edge topics of interest to postgraduates and researchers alike. * Multidisciplinary reviews written from a broad range of scientific perspectives * For over 40 years, series has enjoyed a reputation for excellence * Contributors internationally recognized authorities in their respective fields

It is important that scientists think about and know their history - where they came from, what they have accomplished, and how these may affect the future. Weed scientists, similar to scientists in many technological disciplines, have not sought historical reflection. The technological world asks for results and for progress. Achievement is important not, in general, the road that leads to achievement. What was new yesterday is routine today, and what is described as revolutionary today may be considered antiquated tomorrow. Weed science has been strongly influenced by technology developed by supporting industries, subsequently employed in research and, ultimately, used by farmers and crop growers. The science has focused on results and progress. Scientists have been--and the majority remain--problem solvers whose solutions have evolved as rapidly as have the new weed problems needing solutions. In a more formal sense, weed scientists have been adherents of the instrumental ideology of modern science. That is an analysis of their work, and their orientation reveals the strong emphasis on practical, useful knowledge; on know how. The opposite, and frequently complementary orientation, that has been missing from weed science is an emphasis on contemplative knowledge; that is, knowing why. This book expands on and analyzes how these orientations have affected weed science’s development. The first analytical history of weed science to be written Compares the development of weed science, entomology and plant pathology Identifies the primary founders of weed science and describes their role

This full-color text and practical clinical reference provides comprehensive information on herbal remedies for both large and small animal species. Key coverage includes clinical uses of medicinal plants, specific information on how to formulate herbal remedies, a systems-based review of plant-based medicine, and in-depth information on the different animal species--dog, cat, avian and exotic, equine, food animal, and poultry.

Viruses: Molecular Biology, Host Interactions, and Applications to Biotechnology provides an up-to-date introduction to human, animal and plant viruses within the context of recent advances in high-throughput sequencing that have demonstrated that viruses are vastly greater and more diverse than previously recognized. It covers discoveries such as the Mimivirus and its virophage which have stimulated new discussions on the definition of viruses, their place in the current view, and their inherent and derived ‘interactomics’ as defined by the molecules and the processes by which virus gene products interact with themselves and their host’s cellular gene products. Further, the book includes perspectives on basic aspects of virology, including the structure of viruses, the organization of their genomes, and basic strategies in replication and expression, emphasizing the diversity and versatility of viruses, how they cause disease and how their hosts react to such disease, and exploring developments in the field of host-microbe interactions in recent years. The book is likely to appeal, and be useful, to a wide audience that includes students, academics and researchers studying the molecular biology and applications of viruses Provides key insights into recent technological advances, including high-throughput sequencing Presents viruses not only as formidable foes, but also as entities that can be beneficial to their hosts and humankind that are helping to shape the tree of life Features exposition on the diversity and versatility of viruses, how they cause disease, and an exploration of virus-host interactions