

Fellows

Eleven members of The American Phytopathological Society were honored as Fellows of the Society at the 1994 Annual Meeting in Albuquerque, NM. Election as a Fellow is a reflection of the high esteem in which a member is held. The award is given in recognition of outstanding contributions in extension, research, teaching, or other activities related to the science of plant pathology, to the profession, or to the Society.

Ortus W. Barnett, Jr.



Ortus W. (O.W.) Barnett, Jr., was born in Pine Bluff, AR. He received a B.S.A. degree from the University of Arkansas and served 2 years as an artillery officer in the U.S. Army. Returning to the University of Arkansas, he received his M.S. degree. He enrolled in and completed a doctorate program in plant pathology at the University of Wisconsin.

He accepted a position as assistant professor, Department of Plant Pathology and Physiology at Clemson University, advanced rapidly through the academic ranks and was promoted to associate professor in 1974 and

professor in 1978. While on a sabbatical leave at the Waite Agricultural Research Institute, Glen Osmond, South Australia, he initiated a research program that evolved into a collaborative project with D. Shukla. In addition, Dr. Barnett was given a joint appointment in the Department of Microbiology in 1972 and has served as a shared-faculty member with the Cooperative State Research Service since 1991. He assumed the position of head of the Department of Plant Pathology at North Carolina State University in September 1992.

Conscientious service and high standards in research have characterized O. W. Barnett's personal and professional life. His dedication to service is evident in his activities in APS, his teaching of undergraduate and graduate courses, his keen interest in grower-oriented problems, and his willingness and ability to assume administrative responsibilities.

His involvement in APS activities includes service on the Virology Committee; on the Plant Pathology Slide Series for virology; as an associate and senior editor for *Phytopathology*; as secretary-treasurer, vice-president, president, and counselor of the APS Southern Division; and as secretary, vice-president, president-elect, president, and past president of APS.

Dr. Barnett's contributions to the science of plant pathology have resulted from a well-balanced, solid research program involving fundamental and applied virology. His research has focused primarily on virus ecology and epidemiology as well as the taxonomy of potyviruses. His expertise in virus taxonomy served as the framework for his extensive cooperative research. His applied research has involved development of practical controls for virus diseases on legumes and fruit crops, as well as ornamentals. The extensive extramural support of his research program reflects his success in both basic and applied studies.

In addition to his research and service contributions, Dr. Barnett has excelled in undergraduate and graduate education. His graduate plant virology course at Clemson University often attracted more advanced undergraduate students than graduate students. As head of the Department of Plant Pathology at North Carolina State University, he is currently leading a study with the goal of restructuring graduate courses and curricula to meet the challenges facing the discipline.

The quality and significance of Dr. Barnett's contributions to virology, plant pathology, and agriculture are widely recognized. He received the Outstanding Research Award from the South Carolina Agricultural Experiment Station in 1987 and the Godley-Snell Award for Excellence in Agricultural Research in 1989.

Dr. Barnett has distinguished himself through many outstand-

ing, multifaceted contributions to APS; to the sciences of virology, plant pathology, and agriculture; to growers; and as an administrator. He is recognized nationally and internationally as a leader in virology and plant pathology. His many contributions in research, graduate education, university, community, and professional society activities warrant his recognition as a Fellow of APS.

Joseph M. Bové



Joseph M. Bové was born in Luxembourg. He graduated from the Lycee Michel Montaigne of Bordeaux and studied at the Institut National Agronomique, the University of Paris, and the University of California, Berkeley. He received his Ph.D. degree at the Pasteur Institute.

Dr. Bové began his research career investigating the replication of plant viruses and made significant contributions to knowledge of how turnip yellow mosaic virus (TYMV) interacts with its host plant and elucidated major steps in the virus replication process. Dr. Bové frequently collaborated with his wife Colette on virus research.

It was Dr. Bové's decision to investigate the cause of stubborn disease of citrus in 1960 that led to the main focus of his research career. It was first assumed that stubborn disease of citrus was caused by a virus, but by 1970 a research group led by Dr. Bové and a research group led by E. C. Calavan of the University of California, Riverside, independently established that stubborn was caused by a culturable mycoplasma-like organism. This was the first plant pathogenic mycoplasma-like disease agent cultured.

Dr. Bové and his laboratory have played an instrumental role in the characterization of spiroplasmas and in defining how they fit taxonomically with other mycoplasmas. Dr. Bové has always made extremely effective use of his extensive network of international collaboration to rapidly incorporate the newest technologies in the study of spiroplasmas.

Always noted for his amazing energy and stamina, at age 64 Dr. Bové continues at a rapid pace. Dr. Bové is a dynamic and provocative speaker and participant at conferences and meetings and has actively pushed new concepts, approaches, and technologies. He is an internationally recognized authority in his field.

As professor of microbiology at the University of Bordeaux II, Dr. Bové teaches courses in molecular virology and molecular biology of prokaryotes and serves as a graduate advisor. In addition to his exceptional research productivity, Dr. Bové has spent much of his prodigious energy promoting international cooperation in science, bringing needed technology and information to developing countries, and serving various professional societies. In addition to serving as chairman of the International Organization of Citrus Virologists and the International Organization of Mycoplasmaology, he has helped organize numerous conferences and national and international workshops. Dr. Bové's laboratory has hosted many visiting scientists and served as a training ground for graduate students and postdoctoral fellows. Dr. Bové also has found time to serve as municipal counselor of his community. He is a member of the Academy of Agriculture of France and a corresponding member of the French Academy of Science.

William G. Dougherty



William G. Dougherty was born in Washington, DC. He obtained a B.S. degree in biology from Rutgers University and an M.S. degree in botany and Ph.D. degree in microbiology and cell science from the University of Florida.

During his Ph.D. program Dr. Dougherty developed his career-long interest in potyviruses. He moved to the Department of Plant Pathology, North Carolina State University, as an assistant professor in 1980, where he established an aggressive research program in potyvirology. In 1987 Dr. Dougherty moved to his present position

in the Department of Microbiology, Oregon State University and attained the rank of full professor.

Few individuals have had the impact on their research field that Dr. Dougherty has had on plant virology. His ascent as one of the world leaders in this discipline has been fueled by his intense work ethic, devotion to science, and ability to focus on pressing problems. His accomplishments are even more remarkable considering that his laboratory has always been modest in size—a testament to his abilities to organize and concentrate the collective effort of a small group.

Although his research deals with molecular aspects of potyviruses, Dr. Dougherty is an authority on potyvirus pathology and disease. He has devoted considerable effort toward designing strategies for potyvirus protection using genetic engineering approaches.

Those of us who have interacted with Dr. Dougherty have benefited from his expertise in plant virology and from his professional generosity. His record of service to science in general, and APS in particular, illustrates his desire to contribute to the scientific community. He has served as an associate editor for *Virology* and for *Molecular Plant-Microbe Interactions*. He has been an influential participant in the peer review process of grant proposals submitted to several agencies. He has served on three USDA competitive grant panels, and he has been a panelist for the Eukaryotic Genetics Section and the Presidential Young Investigator Awards programs for the NSF. Twice he has been a panelist for the Energy Biosciences Program at the DOE. He currently is a member of the Virology Study Section at NIH.

Dr. Dougherty has served APS as a member of several important committees. Early in his career he participated in the Virology Committee. More recently, he has provided leadership for *MPMI*.

Dr. Dougherty is scrupulously honest. When his opinion is requested, he provides straightforward advice even if it is unpopular. He is a personally generous man with high standards, and he expects the same from those around him. He is a devoted friend who is always willing to help if the need arises.

Ernest Hiebert

Ernest Hiebert was born in Rosenfeld, MB, Canada. He graduated with honors from the University of Manitoba with a B.S.A. degree in plant sciences and an M.Sc. degree and Ph.D. degree in plant pathology from Purdue University. He was appointed assistant professor of plant pathology at the University of Florida, Gainesville in 1969 and was promoted to associate professor in 1974 and to professor in 1981.

Dr. Hiebert's research has been on the cutting edge of the science. His doctoral research under Dr. Bancroft involved disassembly and reassembly of spherical viruses in vitro.

Dr. Hiebert's pioneering studies on the isolation and characterization of potyviral-induced inclusion bodies were made possible by his scientific expertise, his cooperative nature, and his leadership abilities. He and his associates purified the cylindrical



inclusions induced by two potyviruses, showed that they consisted of protein, and prepared antisera to the inclusion proteins. Hiebert and his graduate student B. Dougherty provided direct evidence that the inclusions are virus-encoded by immunoprecipitation analyses of the in vitro translation products of potyviruses. Dougherty and Hiebert used the in vitro translation studies to develop the first genetic map of the potyviral genome.

Although studies on the nonstructural proteins encoded by viral genomes are commonplace today, Dr.

Hiebert's studies on the isolation and characterization of potyvirus-specified nonstructural proteins were highly significant because they were apparently the first such reports for plant viruses. In 1992 Dr. Hiebert jointly received the Ruth Allen Award for his role in the characterization of potyviruses and potyvirus-specified nonstructural proteins.

Dr. Hiebert was among the first to recognize that potyviruses undergo proteolytic degradation during isolation and storage, and he demonstrated that antigenic determinants were lost by this process. His observations facilitated the preparation of antisera to numerous economically important potyviruses used extensively in research and teaching programs in Florida.

Dr. Hiebert's current studies include sequencing of potyviruses and geminiviruses and participation on cooperative projects on the development of transgenic plants for virus resistance. He has been involved in several cooperative international projects on potyviruses and geminiviruses and has traveled to Brazil, Canada, Colombia, Costa Rica, France, Israel, and Venezuela to confer and work with other scientists.

Dr. Hiebert sets very high standards in his own research and expects the same from his students. In the classroom, his lectures are well organized and cover the latest significant reports in plant virology.

Dr. Hiebert has served APS as chair and vice-chair of the APS Virology Committee and as an associate editor of *Phytopathology*. He has contributed significantly to the research programs of others by his generous donation of antisera to potyviral capsid and nonstructural proteins and monoclonal and polyclonal antibodies to geminiviruses.

Steven E. Lindow



Steven E. Lindow was born in Portland, OR. He received a B.S. degree in botany from Oregon State University and his Ph.D. degree in plant pathology from the University of Wisconsin. He accepted an appointment as an assistant professor of plant pathology at the University of California, Berkeley. He moved through the ranks and was promoted to full professor in 1989.

Dr. Lindow's diverse research interests include several aspects of ecology and management of plant-associated microorganisms. His early research focused on the role of ice nucleation

active (Ice+) bacteria in inciting frost damage to plants. He was the first to discover Ice+ bacteria on plants and showed that most plant species could greatly supercool and avoid frost damage if they could avoid ice formation catalyzed by Ice+ bacteria. He has conducted much of the detailed biochemical and genetic studies of the bacterial ice nucleation phenotype and has developed the widely accepted "aggregation" model. He also described, for the first time, the species of Ice+ bacteria that occur on plants and has done detailed studies of their population dynamics. His most innovative work, however, has been in detailed studies of

the feasibility and approaches to biological control of Ice+ and phytopathogenic bacteria on plants.

Dr. Lindow has developed extensive information to address the interactions between bacterial strains on plants. This seminal work has shown that competition is the major interaction that determines the composition of bacterial strains that occur together on leaves and that biological control can be effectively implemented by a process of preemptive competitive exclusion.

Dr. Lindow has made a major contribution to the study of the ecology of bacterial epiphytes using molecular genetic approaches. His most publicized studies have involved tests of the hypothesis that genetically similar bacterial strains are efficient competitors and, thus, effective in biological control. His studies of the behavior and biocontrol potential of recombinant Ice-strains of *Pseudomonas syringae* on potato plants in the field were the first authorized field studies of genetically engineered bacteria in the open environment. In this role, he was a prominent spokesman for the fields of microbiology and plant pathology during the many years of close public scrutiny of this activity.

Dr. Lindow is active in professional service. He has served on the APS Bacteriology and Epidemiology committees and as an associate editor of *Phytopathology*. He also has been active in the American Society for Microbiology and has served on the influential USDA Agricultural Biotechnology Research Committee. He served as an associate editor for the journals *Biological Control* and *Molecular Ecology* and coedited the book *Biological Control on the Phylloplane* for APS Press.

Dr. Lindow is active in education, teaching graduate courses on epidemiology and advanced phyto bacteriology and an undergraduate course on environmental microbiology. He is active in the plant pathology graduate program in Berkeley and has been chair of the Graduate Student Affairs and Teaching committees.

Dr. Lindow received the Ciba-Geigy Award in 1985 and the Ruth Allen Award in 1987 from APS. He was awarded the prestigious Initiatives in Research Award in 1985 from the National Academy of Sciences.

Donald H. Marx



Donald H. Marx was born in British Columbia, Canada. He received his B.S. and M.S. degrees in plant pathology from the University of Georgia and was awarded a Ph.D. degree from North Carolina State University. His professional research career began in 1963 at the Forestry Sciences Laboratory, Southeastern Forest Experiment Station, NC. In 1966 he transferred to Athens, GA, and in 1976 became the founding director of the Institute for Mycorrhizal Research and Development. In 1990 he became the founding director of the Institute of Tree Root Biology.

He retired from the Forest Service in January 1994 and is currently president of Marx Forest International, Frogmore, SC.

Dr. Marx's first research assignment was to investigate the reproduction of various *Phytophthora* spp. pathogenic to forest trees. He showed that *P. cinnamomi* was dependent on associated soil bacteria for the initiation of root-infecting spore stages. He found that ectomycorrhizae are not only beneficial to plant health, but also act as biological controls against pathogenic root infections. His work has been recognized by many as a major landmark in the biological control of root diseases.

Dr. Marx was one of the first researchers to study the function of basidiospores of hymenomycetous symbiotic fungi. Information needed by tree geneticists concerning the influence of tree genotype on ectomycorrhizal development led Dr. Marx to show that the genetic constitution of slash pine regulates the degree of mycorrhizal development and that certain associations can benefit progenies of slash pine more than others.

Dr. Marx's recognition that the application of the ectomycorrhizal technology to reclamation and forest regeneration programs is valueless unless tree seedlings can be tailor-made with respect to their mycorrhizae led to the development of a procedure for artificial infestation of nursery soils and container substrates.

Dr. Marx and his associates have shown improvements in tree seedling performance due to *Pisolithus* ectomycorrhizae on routine reforestation sites throughout the United States, as well on a boreal forest site in Canada and with tropical pine seedlings planted in Brazil, the Congo, Liberia, Mexico, Nigeria, Senegal, and the Philippines.

Dr. Marx has authored over 230 scientific articles, including publications in scientific journals, book chapters, and proceedings of scientific meetings. He is engaged in cooperative research with colleagues worldwide, holds adjunct professor status at the universities of Georgia and Florida, and is a member of the Institute of Ecology, University of Georgia. He has served on the editorial boards of *Forest Science*, *Tree Physiology*, *Biology and Fertility of Soils*, and *Mycorrhiza*. He is a consultant to the International Foundation of Science in Sweden. He has served on four special scientific panels of the National Academy of Science, Washington, DC.

Dr. Marx has received many awards for his outstanding research accomplishments, including the Marcus Wallenberg Prize, forestry's highest honor, in 1991.

Don Marx is considered the father of ectomycorrhizae by many scientists.

Dalice I. Mills



Dalice I. Mills was born in Endeavor, WI. He received his B.S. degree from Wisconsin State College, Stevens Point. He earned an M.S. degree in general science at Syracuse University and his Ph.D. degree in plant pathology at Michigan State University. Dr. Mills joined the University of Illinois at Chicago Circle as an assistant professor of biology. In 1979 he became an associate professor in the Department of Botany and Plant Pathology at Oregon State University.

Dr. Mills is internationally recognized for his work on the molecular basis of plant-parasite interactions. He has gained particular recognition for his work on the molecular genetics of plant pathogenic pseudomonads. His laboratory was one of the first to use transposon mutagenesis to isolate genes involved in pathogenicity. Studies on the characterization of endogenous plasmids resulted in the development of a shuttle vector for transformation of *Pseudomonas*. Dr. Mills developed a rapid method for monitoring bacterial growth in planta that has been important in analyzing pathogenicity mutants. More recently, his laboratory has developed a simple method for preparing samples for analyzing fungal chromosomes by pulsed-field gel electrophoresis.

Dr. Mills' current research on the relationship between wheat and barley smut pathogens is typical of his creative, pioneering, yet practical application of molecular biology to significant economic problems. Dr. Mills has shown that although *Tilletia controversa* and *T. caries* have some morphologically distinguishable characters, they readily cross. Moreover, their karyotypes are indistinguishable. His findings are important for resolving the Chinese embargo against grain that is contaminated with *T. controversa*.

Dr. Mills is author or coauthor on numerous journal articles, book chapters, and review articles. He is a member of the American Association for the Advancement of Science, the Genetics Society of America, the American Society for Microbiology, the International Society for Plant Molecular Biology, and APS. He serves on the editorial board of the journal *Physiological and*

Molecular Plant Pathology and on the editorial committee of the *Annual Review of Phytopathology*.

Dr. Mills has taught courses in microbial genetics and host-parasite interactions and consistently receives excellent reviews for his classroom teaching. His dedication to education is reflected in the highly successful Genetics Program at Oregon State University and his role as the program's director. He also was involved in the creation of the Center for Gene Research and Biotechnology and the graduate program in molecular and cellular biology. Dr. Mills is widely respected by his colleagues as one who freely shares his knowledge and skills with colleagues and students.

Dr. Mills recently received the OSU College of Agricultural Sciences Early Price Award for Excellence in Research and in 1983 was awarded a Faculty Excellence Award for Research and Scholarship by the Oregon State Board of Higher Education.

Richard W. Smiley



Richard W. Smiley grew up on dryland wheat and barley farms in California. He earned a B.S. degree in soil science at California State Polytechnic University, an M.S. degree in soils, and a Ph.D. degree in plant pathology at Washington State University. Dr. Smiley was an assistant research soil scientist in the USDA/ARS at Pullman from 1966 to 1969.

One of Dr. Smiley's first publications, "Use and Abuse of the Soil pH Measurement," greatly influenced the way that plant pathologists measure soil pH. His early studies established the principal that soilborne pathogens

avored by ammonium are the same as those favored by acid soils and that those favored by nitrate are the same as those favored by alkaline soils.

As a NATO postdoctoral fellow and research officer with CSIRO-Soils Division at Adelaide, Australia, Smiley studied the influence of rhizosphere pH on the ecology of fluorescent pseudomonads antagonistic to *Gaeumannomyces graminis* var. *tritici*. His work demonstrated that the suppressive effect of the slight acidification of the rhizosphere in response to ammonium uptake by roots was due to biological suppression by the antibiotic-producing fluorescent pseudomonads. This research provided the first clear evidence for the potential of fluorescent pseudomonads as biocontrol agents of root pathogens in the rhizosphere.

Dr. Smiley served as a research associate in plant pathology for Cornell University at Long Island and as an assistant professor and associate professor in plant pathology at Cornell in Ithaca. There he researched the etiology and control of root-infecting pathogens of turfgrasses and wheat. His contributions led to the discovery of two pathogens.

Dr. Smiley is now a professor of plant pathology at Oregon State University and superintendent of the university's Columbia Basin Agricultural Research Center near Pendleton. His recent research has been on the etiology and control of Rhizoctonia root rot, Fusarium crown and root rot, physiologic leaf spot, and cereal cyst nematode of wheat and barley.

Dr. Smiley is active in APS, the International Society for Plant Pathology, and the American Society of Agronomy. His publications include journal papers, books, book chapters, and numerous semitechnical articles. Dr. Smiley produced the first edition of the *Compendium of Turfgrass Diseases*, was coeditor of the second edition, and contributed to the corn and wheat compendia. He served as APS Council representative to ISPP for 10 years. In 1994 he was selected to serve as APS Pacific Division councilor. Dr. Smiley was a senior editor at the inception of APS Press in 1984 and served as its second editor-in-chief from 1987 to 1991.

Dr. Smiley has been an effective superintendent at the Columbia Basin Research Center, bringing recognition to the role and contributions of plant pathology and in supporting and encouraging needed interdisciplinary research in the area. He is an effective and respected community leader.

Dr. Smiley has contributed significantly through his research, to his professional society and community. He exemplifies the qualities of an APS Fellow.

Paul S. Teng



Paul S. Teng was born in Muar in the Federation of Malaya, a British colony. He received a B.A. Sc. degree from Lincoln College, New Zealand. He received his Ph.D. degree in plant pathology/systems research from Lincoln College.

Dr. Teng joined the Department of Plant Pathology at the University of Minnesota as an assistant professor. From 1987 to 1989 he was on leave from the University of Minnesota to serve as a plant pathologist at the International Rice Research Institute (IRRI) at Los Banos, the Philippines. In 1989 Dr. Teng became professor

and chair of the Department of Plant Pathology at the University of Hawaii. In 1990 he returned to the Philippines to become integrated pest management (IPM) coordinator at IRRI and, since June 1991, has served as the program leader for cross-ecosystems research. Dr. Teng served for several years as advisor to USDA-CSRS on crop loss assessment, biological assessment, IPM, and computers. From 1985 to 1990 he was also technical assistance specialist and research coordinator for the USAID Pesticide/Pest Management Project, which was managed by the Consortium for International Crop Protection.

Dr. Teng is an international leader in the epidemiology of plant disease and crop loss assessment. He is known for quantification of the effects of plant diseases on crop yields. He was one of the first to develop a comprehensive computer simulation model of a plant disease and is a pioneer in the use of statistical models for predicting and understanding disease and yield losses. Dr. Teng has been instrumental in developing the principles for experimentation and analysis in crop loss assessment now used by epidemiologists and plant pathologists throughout the world. He and his colleagues have contributed significantly to risk assessment with regard to the potential impacts of biotechnology and indigenous or exotic pathogens within a geographic region.

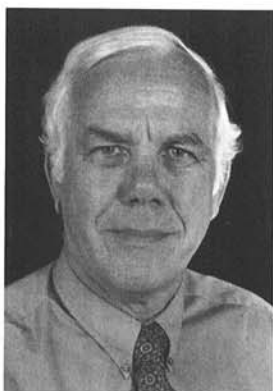
Dr. Teng is an author of many journal papers, book chapters, and technical articles. He has written two books and served as editor or coeditor of eight others. In addition, he is author or coauthor of 30 extension and similar publications.

Dr. Teng has traveled extensively to initiate research and development projects worldwide, has organized many activities to train Third World scientists in modern technology, has facilitated meetings to plan and improve plant pathology in developing countries, is an advocate for sustainable plant protection practices, and communicates research effectively to those who establish public policy.

In 1987 Dr. Teng was awarded the Eriksson Prize Gold Medal for Plant Pathology by the Royal Swedish Academy of Sciences.

Dr. Teng has made significant contributions to the profession of plant pathology through his service on scientific committees, including chairing the APS Epidemiology Committee and the International Society of Plant Pathology Committee on Disease Losses and Production Constraints. For the next 5 years, Dr. Teng will represent APS on the ISPP Council.

Charles L. Wilson



Charles L. Wilson was born in Bristol, VA. He attended the University of Virginia at Charlottesville and graduated with a B.S. degree in biology. He received his M.S. and Ph.D. degrees in plant pathology from West Virginia University at Morgantown.

His career in plant pathology began at the University of Arkansas where he was a member of the faculty from 1958 to 1968. His early interest was in forest pathology and the biological control of weeds by plant pathogens. In 1968 Dr. Wilson joined the USDA/ARS as investigations leader for

shade tree and farm windbreak investigations. He also served as director of the ARS Nursery Crops Laboratory in Delaware, OH, where he was responsible for a national program on shade tree improvement and nursery crop research. During this period he conducted research on the biological control of Dutch Elm disease.

Dr. Wilson joined the USDA/ARS Appalachian Fruit Research Station in 1980 where he initiated a research program to find safe and effective alternatives to synthetic fungicides. This internationally recognized program has yielded a variety of innovative approaches for the control of postharvest diseases of fruit.

Dr. Wilson's preeminence in the biological control of post-harvest diseases is demonstrated by the numerous invitations he has received to present his research around the world. Recently, the CSIRO in Australia asked Dr. Wilson to help them establish a national policy for research on biological control of postharvest diseases. He also was asked by the Crop & Food Research Institute in Levin, New Zealand, to work in their laboratory and conduct joint research.

Although Dr. Wilson's research has focused on biological control, he and his students and associates have made significant original contributions in other areas, including a delineation of the mechanism of mitosis and nuclear motility in imperfect fungi, mycoplasmal etiology of elm phloem necrosis and other forest diseases, and a broad concept of the role of lysosomes in plant disease development.

Dr. Wilson has published extensively in journals, books, book chapters, and patents. His expertise in biocontrol is sought in many venues. His influence can be seen in many programs for biocontrol around the world.

Dr. Wilson received the Biological Sciences Award from the Washington Academy of Sciences and was made a Fellow. He was named Scientist of the Year by the North Atlantic Area of the ARS.

Jan C. Zadoks

Jan Carel Zadoks was born in Amsterdam, The Netherlands. He received an M.S. degree in biology from the University of Amsterdam and took a position as research scientist at the Institute for Crop Protection Research at Wageningen, where he conducted the research for his Ph.D. thesis, which he received from the University of Amsterdam.

In 1964 he was appointed assistant professor in the Department of Phytopathology of the Agricultural University at Wageningen and was promoted to senior lecturer in 1969 and to professor in 1980. From 1989 to 1991 he was head of the department and from 1990 to 1993 was chairman of the Cluster of Crop Protection



Department and of the Sector of Plant Production of the university.

Dr. Zadoks' most important research contributions have been in the development of concepts and theories in epidemiology. He was one of the first plant pathologists to use the logistic equation including corrections for latent period to describe rust epidemics. He published one of the first papers on systems analysis in epidemiology and made another important theoretical contribution with his concept of sequential analysis in epidemiology. Based on extensive crop loss studies, he developed the

concepts of damage, action, and warning thresholds, which were implemented in a computerized pest and disease management system for wheat (EPIPPE). EPIPPE is one of the few pest management systems used by growers, and its use has resulted in a marked reduction in the application of pesticides to wheat. The EPIMUL model developed by Dr. Zadoks was the first fully published model for spatiotemporal spread of plant disease. Using this model, he showed that increased diversity due to multilines causes a decrease in the rates of disease intensification within a focus and of focal spread.

In collaboration with J. E. Parlevliet, Dr. Zadoks arrived at a new integrated concept of disease resistance that suggested horizontal resistance could be explained by polygenic resistance with a gene-for-gene interaction.

More recently, Dr. Zadoks has coauthored papers on risk analysis for biological control of a forest weed and the possible hazards to wild plants of growing transgenic plants, as well as a book chapter on invasiveness of plant pathogenic microorganisms.

Dr. Zadoks reads eight languages and has published in Dutch, German, French, and English. As a visiting professor, he has given lectures in French, German, and Spanish. He has published over 300 papers, including 114 peer-reviewed articles, 72 chapters in proceedings or books, and 5 books.

He has been an outstanding and inspiring lecturer. His lecture notes for an epidemiology course were developed into one of the first comprehensive textbooks on epidemiology.

In addition to his research and teaching activities, Dr. Zadoks has been a member or chair of numerous national and international boards and committees. He was instrumental in the development of the Integrated Farming Systems Project. Since 1990 he has been active as a member of the Committee of Genetic Manipulation and as the coordinator for the Crop Protection Project on behalf of the Agricultural Biotechnology Program Committee. For the past 10 years, Dr. Zadoks has been on the FAO/UNEP Panel of Experts of Integrated Pest Control. He has been a program reviewer for the NATO Scientific Affairs Division and the EEC and has reviewed several international institutes. He has participated in more than 30 consulting missions to developing countries.

In recognition of his innovative research accomplishments and his contributions to agriculture and society, Dr. Zadoks received the Adventurers in Agricultural Science Award of Distinction from the U.S. Secretary of Agriculture in 1979 and the Royal Award for Public Merit (Knighthood) from the Queen of the Netherlands in 1980. In 1986 he was elected to membership in the Holland Society of Sciences and in 1993 was awarded a knighthood in the order of the Netherlands Lion.

Dr. Zadoks is an internationally renowned, innovative, and productive plant pathologist. He is one of the few plant pathologists who has made significant contributions to the theory of plant pathology and tested his theories in the field. He also has made significant contributions to disease control and reductions in pesticide use. His influence has been felt in Europe, the United States, Asia, Africa, and Latin America.