

Fellows of The American Phytopathological Society

Ten members of The American Phytopathological Society were elected Fellows of the Society at the 1970 Annual Meeting in Hot Springs, Arkansas. Election as a Fellow of the Society is a reflection of the high esteem in which each is held by his colleagues. The award is given in recognition of outstanding contributions in extension, research, teaching, or other related activity to the science of plant pathology, to the profession or to the Society.



Leonard Jay Alexander was born April 3, 1903, in Treynor, Iowa. He received his B.S. degree from Louisiana State University in 1926, and continued his schooling at the University of Wisconsin, earning the M.S. degree in 1928 and the Ph.D. degree in 1934, both in plant pathology. In 1930 he joined the faculty of the Ohio Agricultural Research and Develop-



Durward Franklin Bateman was born in Tyner, North Carolina, on May 28, 1934. He was awarded the B.S. degree at North Carolina State College (now North Carolina State University at Raleigh) in 1956, and the M.S. degree in 1958 and the Ph.D. in 1960 at Cornell University. Upon completion of his graduate program, he accepted a position as

Assistant Professor of Plant Pathology at Cornell University with the assignment of developing a major program on disease and pathogen physiology. He was advanced to Associate Professor in 1965, to full Professor in 1969, and has recently been named Chairman of his department. In 1967 he was a Special NIH Postdoctoral Fellow at the University of California, Davis, working with Drs. Kosuge and DeVay. He has, in a relatively short time, originated and developed a program of teaching and research on disease physiology that has received international acclaim and has continually attracted graduate students and postdoctoral associates from both this country and abroad. He has demonstrated outstanding ability to establish excellent rapport with his students and associates, and in consequence has obtained highly effective team effort, as is witnessed by an impressive list of significant publications. The principal thrust of his research has been in elucidation of the role of various enzyme systems in the degradation of diseased tissues and in induction of resistance reactions by the host. Among other contributions, he and his associates have elucidated the synergistic action of oxalate and endopolygalacturonase in tissue degradation by *Sclerotium rolfsii*, demonstrated the production of phosphatidase by pathogenic fungi and bacteria during pathogenesis, elucidated an induced mechanism of resistance to polygalacturonase in bean tissue infected by *Rhizoctonia solani*, and clarified the role of pectic enzymes in the maceration of plant tissue. The excellence of his program has been recognized far beyond his classroom and laboratory. He has presented invitational papers at international meetings in Japan and The Netherlands, and has conducted special seminars at many institutions in the United States and in foreign countries during the past 6 years. As an active member of several important committees and as a member of the Editorial Board of *Phytopathology*, Dr. Bateman has served the Society in many capacities. He is currently serving on the Organizing Committee for the Second International Congress of Plant Pathology.

Clyde Martin Christensen, Professor of Plant Pathology at the University of Minnesota, was born August 8, 1905, in Sturgeon Bay, Wisconsin. He received the B.S. degree in 1929, graduating with distinction, the M.S. degree in 1930, and the Ph.D. degree in 1937, from the

ment Center (then the Ohio Agricultural Experiment Station) at Wooster, being named Professor in 1951. In 1952 he was made Professor of The Ohio State University and taught there for 4 years. He has served as advisor to graduate students since 1950. He spent a year (1961-62) on sabbatical leave at the Institute for Phytopathological Research at Wageningen, The Netherlands, studying and doing research in virology on grants from the Rockefeller Foundation and the National Institutes of Health. He was guest lecturer at the Università degli Studi, Facoltà di Agraria, Bari, Italy, in 1962. For 6 months in 1968-69, he was a visiting research professor at the University of Florida where he studied the relationship of tobacco mosaic virus (TMV) and resident plant bacteria to the blotchy ripening disease of tomato. He is the author and co-author of more than 160 papers. His major research has been on inheritance of disease resistance in the tomato and the differentiation of physiologic races of a number of pathogens. His work with TMV was especially noteworthy, resulting in assignment of the numerous strains of TMV to five distinct pathogenic races. With associates, he unraveled the temperature, strain, and gene interactions of resistance to TMV. This research led directly to the release of several tomato varieties which have been invaluable to the greenhouse industry. For this research, the Ohio Greenhouse Vegetable Grower's Cooperative Association honored him with a \$1,650 award in 1950, and the following year financed construction of a 5,500 square foot greenhouse at the Research Center for his future work. Probably his greatest contribution was the organization and chairing of a national committee for screening wild species of *Lycopersicon* for disease resistance. His enthusiasm welded together breeders and plant pathologists throughout the world interested in breeding for disease resistance in tomato. Because of this pioneer work, initiated in 1942, tomato now ranks among the three or four plants so intensively studied. He has been active in affairs of the Society, serving as Advertising Manager from 1948 to 1956, Councilor of the North Central Division in 1963-64, and President of the North Central Division in 1968. He is an active member of numerous scientific and honorary societies and community organizations.



University of Minnesota. In 1932-33 he studied at the University of Halle, Germany. In 1944, he directed a War Production Board project in Plant Pathology at the University of Minnesota in which more than 30,000 isolates of *Penicillium* were screened in a successful search for strains of high penicillin-producing capacity. His publications include 180 research papers, about 130 of them dealing with the relation of fungi to the deterioration of stored grains and seeds, a field he has pioneered. Since 1963, he and his coworkers have been concerned with the investigation of mycotoxins in foods and feeds. He is the author of four books, *Common Edible Mushrooms* (1943), *Common Fleshy Fungi* (1946), *The Molds and Man* (1953), and *Grain Storage: the Role of Fungi in Quality Loss* (1969); the latter, coauthored by H. H. Kaufmann, Manager, Grain Research Laboratory, Cargill, Inc., won a McKnight Award for excellence. In 1967-68, he served as President of the University of Minnesota chapter of Sigma Xi. He is an honorary member of the American College of Allergists, a recognition of his interest in and contributions to the study of fungi in relation to respiratory allergy, and a consultant to several grain storage and processing firms. During parts of 1959, 1960, 1963, 1964, and 1965 he served with the Rockefeller Foundation in the Mexican Agricultural Program, and in 1967 spent some time in Thailand on a mycotoxin project sponsored by the National Institutes of Health. During the last 10 years, he has participated in many national and international symposia and conferences dealing with the problems of fungi in relation to stored grains and with mycotoxins.



Experiment Station, and in 1931 he joined the USDA as a Plant Pathologist, where he organized a cooperative federal-state project on the control of tobacco diseases. A new serious disease, blue mold, had just made its appearance. It was shown that this disease could be controlled by heat and gas (paradichlorobenzene) treatments, but these methods were not practical. Effective fungicidal treatments were developed, and a long-term breeding program was initiated. Search through collections of tobacco seed from South America resulted in

finding resistance to bacterial wilt, a destructive disease in large areas of North Carolina and Virginia. Varieties have been developed that have practically eliminated this disease. Other collections of primitive tobaccos from Central America yielded good resistance to the root knot nematode disease, widely prevalent in the Southern states.

Edward Eastman Clayton was born in Upper Sandusky, Ohio, on March 10, 1895. He received his B.S. degree in 1916 from Ohio State University, his M.S. degree in 1917 from the University of Chicago, and his Ph.D. degree in 1920 from the University of Wisconsin. From 1922 to 1931 Dr. Clayton worked as a Research Associate on vegetable crop diseases at the New York

finding resistance to bacterial wilt, a destructive disease in large areas of North Carolina and Virginia. Varieties have been developed that have practically eliminated this disease. Other collections of primitive tobaccos from Central America yielded good resistance to the root knot nematode disease, widely prevalent in the Southern states.

The problem of gene transfers from wild *Nicotiana* species to the cultivated crop, *N. tabacum*, was studied intensively. The first success was the transfer of wild-fire resistance from *N. longiflora*. This was determined by a monogenic, dominant character. Black root rot resistance, also a monogenic dominant character, was successfully transferred from *N. debneyi*. The final, and most difficult transfer, that of blue mold resistance, required many years to successfully complete (1935 to 1962). It involved the transfer of three pairs of genes from *N. debneyi*, and led to the conclusions that (i) the transfer of a character such as blue mold resistance can be readily accomplished when certain basic requirements have been met; and (ii) the transfer of three pairs of genes from a very undesirable plant, *N. debneyi*, to the cultivated plant, *N. tabacum*, could be accomplished without any undesirable linkage problems. These five new kinds of resistance have been used in producing improved commercial varieties of tobacco suited to culture in many different domestic and foreign areas. This work was aided by the development of male sterility. As a consequence, hybrid varieties have come into extensive use.

In recognition of his contributions, Dr. Clayton received the Distinguished Service Research Award, Gold Medal and Certificate from the USDA, the Annual Research Award from the Cigar Manufacturers Association of America, a bronze plaque and certificate from the Cigar Institute of America, and was awarded an honorary degree of Doctor of Science by North Carolina State University. He has served as Vice-President, President, and Councilor of the Potomac Division of APS.



Robert Watt Fulton was born in Sistersville, West Virginia, on January 29, 1914, but grew up in Wisconsin. He received an A.B. degree from Wabash College in 1935 and spent the next 2 years at Wabash as an instructor in botany. He entered the University of Wisconsin in 1937 and received a Ph.D. degree in 1940 under the direction of James Johnson. He was inducted into the Army as a private in 1942, and received an honorable discharge in 1946 with the rank of First Lieutenant. In 1946, he returned to Wisconsin on a joint appointment with the USDA involving research on tobacco diseases and tobacco breeding. He resigned from this position in 1955 to accept a position in the Plant Pathology Department at Wisconsin involving research on virus diseases of fruit trees. He was pro-

moted to Associate Professor in 1956 and to Professor in 1960. In 1964, he was Visiting Professor at the University of California, Berkeley. His research interests have centered on virus diseases, first those of tobacco and later those infecting woody hosts. For several of these, methods of inoculating, stabilizing, and purifying were developed which have made possible serological detection and differentiation as well as characterization of the viruses. Among his other virus studies, he has made contributions on cross-protection phenomena and nonspecific resistance to viruses in tobacco plants. In 1962, he critically studied plant virus dilution curves which indicated a requirement of two or three particles, rather than one, for infection by certain viruses. Dr. Fulton has also been involved in the development of a graduate course in virology at the University of Wisconsin. He was on the Board of Editors of *Phytopathology* from 1958 until 1960, and was Editor-in-Chief from 1961 through 1963. He also served the Society as a member of the Virology and Publications committees. He was a member of the Board of Editors of *Virology* from 1957 to 1963, and has been an Editor of *Virology* since 1964. As author or coauthor, he has contributed chapters to *Plant Virology* (Corbett & Sisler), *Methods in Virology* (Maramorosch & Kowrowski), and *Annual Review of Phytopathology*.



William Frantz Rochow

was born in Lancaster, Pennsylvania, on March 12, 1927. He received his bachelor's degree, cum laude, at Franklin and Marshall College in 1950, where he was elected to Phi Beta Kappa, and completed his Ph.D. program in 1954 at Cornell University, specializing in virology under A. F. Ross.

He spent the following year at the Virus Laboratory at the University of California, Berkeley, on a National Foundation for Infantile Paralysis Fellowship. In 1955, he joined the Cereal Crops Research Branch, USDA, to initiate a basic study of oat viruses in a cooperative program with the Department of Plant Pathology at Cornell, where he rapidly rose to the rank of Professor of Plant Pathology. His research has centered on the nature of a persistent or circulative virus, barley yellow dwarf virus. By perfection of techniques utilizing aphid vectors, he has contributed to our knowledge of virus variation, of vector-strain relations, of aphid-virus specificity, the nature of a circulative virus, and basic information on phenotypic mixing and other phases of virus reproduction in plants. His research also has involved assay and interactions of plant viruses. As a result of his research, his clarity of expression, and his clear view of the relation between so-called basic and applied work in the area of viruses, Dr. Rochow has been extremely active and effective in presenting plant pathology as a science to many groups, especially to administrators and legislators. As a USDA employee

located in a land grant institution, he has demonstrated the excellence that can result from such an association. Dr. Rochow has served on the editorial board of *Phytopathology*, as Associate Editor of *Virology*, on the Editorial Committee of *Annual Review of Phytopathology*, and on several Society committees. He is currently serving on the Organizing Committee for the 2nd International Congress of Plant Pathology. He has served as adviser to a number of graduate students and has been productive in undergraduate research programs and High School National Science programs in introducing students to the science of plant pathology. Dr. Rochow has insisted on his devotion to an active research role, and although he has had many opportunities to go into administrative work he prefers to remain in the laboratory as a productive plant pathologist. His outstanding research, much of it cooperative with other scientists at Ithaca, at Lincoln, Nebraska, and at Beltsville, was recognized in 1966 by the Superior Service Award of the USDA.



James Edward van der Plank

was born in Zululand in 1908. He received the B.Sc. degree in 1927 and the M.Sc. degree in Botany in 1928 at Natal University College, and after a short interval in the South African Department of Agriculture, took the M.Sc. degree in Chemistry in 1932. He then went to the Imperial College, London, and was awarded the Ph.D. degree in

Botany in 1935. His thesis on sugars was subsequently published in the *Biochemical Journal*. After returning to South Africa, he joined the Low Temperature Research Laboratory at Capetown as Biochemist. His work there on the use of hypochlorous acid and its salts for bleaching and disinfection were used as a thesis for the D.Sc. degree in 1944. He joined the Division of Plant Pathology of the South African Department of Agriculture in 1941, becoming Chief, Division of Plant Pathology in 1958, Chief, Plant Protection Research Institute in 1961, and Director of Research (Plant Protection) in the Department of Technical Services in 1966. Dr. van der Plank has made significant contributions to plant pathology through the synthesis of his own experience and abilities with the knowledge of the past century in the area of epidemiology. His innovative approaches have been communicated through articles; his two books, *Plant Diseases: Epidemics and Control* (1963) and *Disease Resistance in Plants* (1968), have been landmarks in these facets of plant pathology. Because of his efforts, new focus has been given to the science of epidemiology, which within the past few years have resulted in new approaches to research in epidemiology and plant disease resistance. His 6 months as visiting professor at Pennsylvania State University and as guest lecturer elsewhere have resulted in a number of new programs of research

and instruction in universities throughout the United States. By nature and outlook, Dr. van der Plank is a provocative personality who delights in controversy. Such personalities are rare in the science and cause strong response, positive and negative, from colleagues. This is the manner upon which knowledge feeds and grows, and this is the true contribution of the man.



Paul Edward Waggoner

was born in Centerville, Iowa, on March 29, 1923. He attended the State University of Iowa before entering the Air Force in 1943. While in the Air Force he served as a weather forecaster and attended the Universities of Wisconsin and Chicago, studying meteorology, physics, and mathematics. He received the bachelor's degree from the Uni-

versity of Chicago in 1946 and received his master's degree in 1949 and his Ph.D. degree in 1951 at Iowa State University, with a major in plant pathology. He became Assistant Plant Pathologist at The Connecticut Agricultural Experiment Station in 1951, was advanced to Associate Plant Pathologist in 1954, in 1956 became Chief of Soils and Climatology and in 1970, Chief of Ecology and Climatology. In 1963, he was a Guggenheim Fellow at the Rothamsted Experimental Station. He has been Vice-Director of The Connecticut Agricultural Experiment Station since 1968, and serves on the National Academy of Science's Advisory Committee to the Secretary of Agriculture. From the time of his graduate studies, when he investigated the forecasting and epidemiology of potato late blight, his principal studies have been epidemiology and climatology. His research in plant pathology has covered a wide range: pathogenesis of wilt diseases, effects of ionizing radiation on plant disease, dispersal and survival of inoculum, effects of climate on disease, forecasting epidemics, and, most recently, the simulation of epidemics with computers. His investigations have broadened the perspective of plant pathologists throughout the world concerning the influence of weather on plant diseases. His studies on computer simulation have opened a new door to the understanding of effects and interactions of climatic variables on plant disease development. Dr. Waggoner's talents have not been confined to plant pathology, but have extended to basic plant physiology, meteorology, and agronomy. In recognition of his contributions in these areas, he received the Award for Outstanding Achievement in Bioclimatology from the American Meteorological Society in 1967, was elected a Fellow of the American Society of Agronomy, and is a member of the Editorial Board of Plant Physiology. Despite his many obligations he has remained active in The American Phytopathological Society, serving as first chairman of the Committee on Epidemiology and Meteorology.



James Merrill Wallace was born in Ripley, Mississippi, on October 13, 1902. He received the B.S. degree at Mississippi State University in 1923, the M.S. and the Ph.D. degrees in 1927 and 1929 at the University of Minnesota. In 1924 he was Assistant Plant Pathologist, Mississippi State Plant Board, and from 1925 to 1928, Instructor at the

University of Minnesota and Agent, USDA. In 1928 he became Associate Plant Pathologist at Clemson College, South Carolina, and in 1929 joined the Office of Sugar Plants, USDA, located first at Twin Falls, Idaho, and later at Riverside, California. He joined the Department of Plant Pathology, University of California, Riverside, as Associate Plant Pathologist in 1942, advancing to Plant Pathologist in 1948. He was appointed Professor of Plant Pathology in 1962 and became Emeritus Professor on July 1, 1970. Dr. Wallace's research has reflected a broad range of interests. He was involved in pioneer work on trapping rust spores from airplanes, and his doctoral thesis dealt with epidemiology of black stem rust of wheat. He discovered acquired resistance to sugarbeet curly top in recovered tobacco plants, and demonstrated transference of that resistance to tomato by grafting. With R. A. Flock, he demonstrated that fig mosaic is transmitted by an eriophyid mite. He also discovered the unusual seed transmission of the avocado sun blotch disease virus in symptomless carriers. Best known for his studies on virus diseases of citrus, he discovered, with H. S. Fawcett, the virus nature of quick decline or tristeza disease. His subsequent studies on its nature and detection led to development of control procedures for a disease that had threatened citrus cultivation throughout the world. Indexing and diagnostic techniques developed by him are now used wherever citrus viruses are being studied. He also demonstrated the virus nature of several other citrus diseases, including tatter leaf, citrange stunt, ringspot, and veinination, showing the latter to be caused by the same virus that causes woody-gall. Dr. Wallace's expertise has received worldwide recognition. He has been consultant on some nine missions, and has assisted in planning research on citrus disease problems in most countries where citrus is grown commercially. In 1957, he organized and for 3 years was chairman of the International Organization of Citrus Virologists, a working group of some 300 members in 41 countries. Since the first meeting in California, this organization has held conferences in Florida, Brazil, Italy, and Japan. An active member of The American Phytopathological Society, he was President of the Pacific Division in 1966 and APS delegate to the International Botanical Congress in Paris in 1954 and in Montreal in 1959. Dr. Wallace has contributed widely to the

literature on citrus viruses and as an enthusiastic teacher has taught a popular course on virus diseases. He plans to continue in research and consulting.



Harry Ernest Wheeler was born January 25, 1919, in West Charleston, Vermont. He received a B.S. degree from the University of Vermont in 1941. Following 4 war-time years in the U.S. Army Air Forces as an aerial navigator, he started his graduate training at the Louisiana State University in 1946. This institution granted him an M.S.

degree in 1947 and a Ph.D. degree in 1949, both in botany. In 1949-50, he was visiting investigator and research participant at the Oak Ridge National Laboratory. He returned to Louisiana State University in 1950 as an Assistant Professor, and advanced to the rank of Professor in 1959. In 1958, he was on leave as a John Simon Guggenheim Fellow and research fellow in biology at Harvard University. He remained at Louisiana State University until 1967, when he accepted his present position as Professor of Plant Pathology at the University of Kentucky. He is the author or coauthor of over 80 papers in the areas of fungal genetics and physiology of parasitism, including review articles in *Annual Review of Microbiology* (1958, 1963) and *Annual Review of Phytopathology* (1968). He is best known for his researches on sexuality in *Glomerella* and the causal role of the patho-

toxin, victorin. He was also one of the first to use radioisotopes to study host-parasite physiology and microbial toxins in plant disease. His cytological and physiological studies of *Glomerella* involved concurrent research on sexual strains, sexual hormones, and the genetic factors involved in perithecium and ascus development. This work has served as a model for studying other ascomycetes. In the mid-1950's, he began to investigate the phytotoxin produced by *Helminthosporium victoriae*. Studies of toxin production, as well as physiological and cytological changes in susceptible and resistant oats, have continued to the present, contributing greatly to our understanding of host-parasite physiology at the biochemical level. He revived, gave impetus to, and established the first set of criteria to test the toxin theory of disease. With associates, he determined the sequence of events, including early permeability changes, during disease development. He is also a coholder of a U.S. patent involving a reproducing process using electron printing. His honors and positions in scientific societies include: Fellow of the AAAS; APS delegate to the Tenth International Botanical Congress; Associate Editor of *Phytopathology*, 1957-1959; member of the executive committee of the Association of Southeastern Biologists, 1958-61; president of the Louisiana Academy of Sciences, 1956; Associate Editor of *Mycologia* (1966-to present); Chairman, Activities Committee of the Southeastern Section of the Botanical Society of America, 1956; Chairman, Research Grants Committee of the Mycological Society of America, 1959-62; panel member, NSF predoctoral fellowships, 1960-64; and President of the L.S.U. chapter of Sigma Xi, 1954.