Lee M. Hutchins Award

The Lee M. Hutchins Fund was established in 1979 by means of gifts from the estate of Dr. Lee M. Hutchins. The award, consisting of a certificate and income from the invested fund, is made for the best contribution to basic or applied research on virus or viruslike infectious diseases of fruit plants. The results of the research must have been published in an official journal of the Society.

Moshe Bar-Joseph **Michael F. Clark** **Stephen M. Garnsey** **Dennis Gonsalves** **Dan E. Purcifull**

Moshe Bar-Joseph, Michael F. Clark, Stephen M. Garnsey, Dennis Gonsalves, and **Dan E. Purcifull** are jointly honored by the Lee M. Hutchins Award for their individual and collaborative roles in developing reliable serological procedures for the large-scale detection and diagnosis of citrus tristeza virus (CTV). Some of their important findings were published in *Phytopathology* during 1978 and 1979.

Drs. Gonsalves, Purcifull, and Garnsey collaborated on studies involving purification of CTV and the development of CTV-specific antisera, described in 1978 (*Phytopathology* 68:553–559). They developed purification procedures for CTV from bark and leaves of infected citrus and prepared antisera to formaldehyde-fixed CTV and to unfixed CTV. Both antisera reacted in microprecipitin tests, but only the antiserum to unfixed virus gave good results with purified CTV and with extracts from CTV-infected plants in sodium dodecyl sulfate (SDS)-immunodiffusion tests. They were able to improve efficiency of the purification procedure by monitoring the virus using SDS-immunodiffusion tests and eliminating a step where considerable virus was lost.

In a second paper (*Phytopathology* 69:88–95), Drs. Garnsey, Gonsalves, and Purcifull prepared highly specific antiserum to CTV protein following purification of the protein by polyacrylamide gel electrophoresis. In SDS-immunodiffusion tests, the anti-protein serum reacted with extracts from plants infected with any of several distinct CTV isolates but not with either extracts from plants infected with other citrus viruses or extracts from healthy plants. The SDS-immunodiffusion procedure was reliable and practical for diagnosing CTV in field trees.

Subsequently, Drs. Bar-Joseph, Garnsey, Gonsalves, Purcifull, Clark, and others (*Phytopathology* 69:190–194) developed procedures for mass-indexing of CTV using the enzyme-linked immunosorbent assay (ELISA) developed earlier by Dr. Clark. They demonstrated suitability of ELISA for detecting a broad spectrum of CTV strains in Israel and Florida, and they detected CTV in a wide variety of citrus hosts. They also have developed sampling and extraction methods that increased efficiency of the indexing procedures.

These collaborations have added greatly to information on the biology, chemical properties, immunology, epidemiology, and control of CTV. They have demonstrated that rapid serological test procedures are very effective for detecting CTV and have stimulated interest in the practical use of such procedures in virus disease control. For example, an ELISA indexing program for CTV has been used extensively in Israel, and similar programs are being initiated in California and Spain. About 600,000 trees worldwide have already been indexed for CTV by ELISA.

Moshe Bar-Joseph was born in Turda, Romania, April 12, 1939. He has been a citizen of Israel since 1951. He earned a B.Sc. degree in 1963, an M.Sc. degree in 1967, and a Ph.D. degree (supervised by G. Loebenstein) in 1972, all at the Hebrew University, Jerusalem. He has been at the Volcani Research Center, Bet Dagan, Israel, since 1966, except for leaves as visiting Fellow at the John Innes Institute in England (1972–1973) and as visiting researcher at the University of California at Riverside (1980–1981). Dr. Bar-Joseph has been a leader in the modernization of indexing techniques for detecting CTV using electron microscopy and serology.

Michael F. Clark was born in Singapore in 1938. He obtained a B.S. degree at Wye College, England, in 1960, an M.S. degree at Cornell University in 1962, and a Ph.D. degree at Auckland University, New Zealand, in 1965. From 1965 until 1971 he was a research scientist with the D.S.I.R. in New Zealand, except for leave as a visiting worker at Purdue University, from 1969 to 1970. Since 1971, he has been at the East Malling Research Station in England, where he and his colleagues were the first to demonstrate the applicability of enzyme immunoassay procedures to plant viruses.

Stephen Garnsey was born in Oceanside, CA, August 3, 1937. He received a B.S. degree from the University of California at Riverside in 1958 and a Ph.D. degree (supervised by T. A. Shalla) from the University of California at Davis in 1964. Since 1963, he has been a research plant pathologist at the U.S. Department of Agriculture's Horticulture Field Station in Orlando, FL. Dr. Garnsey has made many important discoveries relating to the etiology, characterization, transmission, diagnosis, distribution, and control of virus or viruslike diseases of citrus.

Dennis Gonsalves was born in Kohala, HI, April 2, 1943. He obtained a B.S. degree in 1965 and an M.S. degree in 1968 at the University of Hawaii and a Ph.D. degree (supervised by R. J. Shepherd) at the University of California at Davis. He was assistant professor from 1972 to 1977 and associate professor from 1977 to 1978 at the Agricultural Research and Education Center, Institute of Food and Agricultural Sciences, University of Florida at Lake Alfred, where he conducted his research on citrus viruses. Since 1978, he has been associate professor at Cornell University's N.Y. State Agricultural Experiment Station at Geneva. Among other research contributions with Dr. Garnsey and others, Dr. Gonsalves has demonstrated a "protein activation effect" whereby the nucleic acid of certain multicomponent viruses requires association with capsid protein for infectivity.

Dan E. Purcifull was born in Woodland, CA, July 1, 1935. He received a B.S. degree in 1957, an M.S. degree in 1959, and a Ph.D. degree (supervised by R. J. Shepherd) in 1964, all at the University of California at Davis. He has been assistant professor from 1964 to 1969, associate professor from 1969 to 1975, and full professor from 1975 to the present at the University of Florida at Gainesville, specializing in the study of the immunology and structure of viruses of citrus and vegetable crops.