

PLANT-MICROBE INTERACTION

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All papers in this issue were presented at the meeting and subsequently peer reviewed according to the usual editorial procedures of SYMBIOSIS.

This issue is dedicated to the memory of Dr. Ruhama Berliner. Dr. Berliner participated at this meeting. She found her tragic death on February 4, 1990 as one of the victims of a terrorist attack on a bus with Israeli tourists near Cairo, Egypt.



Dr. Ruhama Berliner
1942-1990

Ruhama Berliner **1942-1990**

It was initially with great shock and then with lasting sadness that we heard the news of Ruhama Berliner's death as one of the victims of a guerrilla attack on February 4, 1990 on a tour bus from Israel to the cities of Ancient Egypt south of Cairo.

Ruhama Berliner's death at mid-career is a great loss to the botanical community, not only of Israel but of the world. Ruhama's scientific interests and outreach had taken her to many parts of the world where she contributed to our botanical knowledge and had extended an open and warm friendship to many colleagues wherever she went.

Ruhama was born in Tel Aviv, Israel on September 9, 1942. Her training in botanical science was at the Hebrew University of Jerusalem where she completed her BSc degree in the Faculty of Science in 1968 and her MSc degree in 1971 with distinction in Botany. Her Masters thesis was on the vegetation on the post-Eocene volcanic rocks in Galilee published in 1972. In 1971 she spent a period in the Department of Botany at the University of Queensland in Australia. From 1973 until 1980 she held the position of Principal biologist with the Authority for Conservation and Natural Reserves in Israel with an increasing interest and involvement in field ecology.

Beginning in 1980 she returned to her studies in the Department of Agricultural Botany, Faculty of Agriculture, Hebrew University of Jerusalem at Rehovot, taking her PhD degree in 1986. Her thesis title "The effect of the substrate on *Batha* plants and their mycorrhizae" under the supervision of Professors B. Jacoby and E. Zemski reflected her increasing interest in the underground biology of plants and the soil and microbial influences on plant distribution. During her studies for the PhD degree, Ruhama served as Assistant and then as Instructor in the Department of Agricultural Botany which included collaboration with Professor D. Koller in teaching a course in Plant Ecology.

In 1986 Dr. Berliner made a scientific visit to the University of Cape Town, South Africa with travel also to Namibia and the Kalari Desert to extend her botanical experiences.

In November 1986 Dr. Berliner accepted a Charles Bullard Fellowship in Forest Research at the Harvard Forest, Harvard University, to pursue research on mycorrhizal populations of the forests of Petersham, Massachusetts. Her appointment was extended for a second year as post-doctoral fellow supported by funds from the A.W. Mellon Foundation of New York. During this period Ruhama devoted herself to intensive study of the flora of the Harvard Forest and made extensive analyses of mycorrhizal types and associations with the root systems of both herbaceous and woody plants. Her greenhouse studies explored the experimental establishment of mycorrhizal and actinomycete associations in selected plant species. These studies, now published, added significant new information to the underground biology of this region of northeastern United States.

During her stay in the United States, Dr. Berliner attended the 7th North American Conference on Mycorrhizae held in Gainesville, Florida and stayed on for a workshop on techniques for studying mycorrhizal associations, extending both her knowledge and her list of friends and colleagues.

Upon completion of her fellowship at Harvard, Ruhama returned to a position at the Hebrew University of Jerusalem, residing at her home in Mevasseret-Jerusalem and commuting to her place of work at Rehovot in the Department of Phytopathology, the Hebrew University of Jerusalem.

Ruhama Berliner will be long remembered by her many professional and personal friends around the world. She possessed a great capacity for friendship and elicited sincere respect for her high scientific standards and immense enthusiasm and joy in her botanical work. She had a strong artistic bent that expressed itself in her writings, in her excellent photography and in her creative sketches and paintings. She had an unending curiosity and in her way was one of the modern explorers of new places and new ideas, always seeking to extend her knowledge and to make the strange familiar and comprehensible. She will be sorely missed.

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Ruhama Berliner 1942-1990

Dr. Ruhama Berliner, plant researcher and fungi specialist, died on February 4, 1990, the victim of a terrorist attack. She was killed, along with eight other Israelis, during a bus tour in Egypt.

Ruhama Berliner was born in Israel in 1942. As a young woman, Ruhama served in the Israel Defense Forces in the Nahal unit, which combines farming with military service. At the completion of her service, she became a member of Kibbutz Rosh haNiqra.

Ruhama studied at the Hebrew University of Jerusalem, where she earned her B.Sc. (in botany and physiology, in 1968) and M.Sc. (botany, 1971) degrees. Within the framework of her M.Sc. thesis she studied the vegetation on the post-Eocene volcanic rocks in Galilee. During the years 1973-80 she served as chief biologist in the central region of the Nature Conservation Authority. Her studies towards the Ph.D. degree (1980-85) were carried out in the Department of Agricultural Botany at the Faculty of Agriculture of the Hebrew University under the supervision of Professors E. Zamski and B. Jacoby. Her thesis dealt with the effect of the substrate on the development of Batha plants and their mycorrhizae.

In 1986 Dr. Berliner carried out postdoctoral work at the Department of Botany of the University of Cape Town, South Africa. She studied, jointly with Drs. D.T. Mitchell and N. Allsopp, vesicular-arbuscular mycorrhizal infectivity of sandy soils in the southwestern Cape in South Africa. In 1986 she was awarded the Charles Bullard Fellowship in Forest Research at Harvard University in Massachusetts, U.S.A. Her studies during 1986-88, at Harvard Forest, jointly with Dr. J.G. Torrey, dealt with mycorrhizal associations and with tripartite actinomycete mycorrhizal associations.

At the end of 1988, following completion of her work in the U.S.A., Dr. Berliner joined the Department of Plant Pathology and Microbiology at the Faculty of Agriculture of the Hebrew University where she studied, jointly with Prof. J. Katan, mycorrhizae in solarized soils. Dr. Berliner gave a course in ecology at the Faculty of Agriculture, and was an excellent teacher.

The published works of Dr. Berliner embrace two major topics: the natural vegetation in Israel – with special emphasis on ecology, and mycorrhizal associations. She wrote numerous articles, chapters in books, special publications and other releases, including works on the vegetation of volcanic rocks in Galilee, on flowering and fruiting of *Sarcopoterium*, on hydrophillic habitats, etc. She published a special pamphlet on rare and endangered plant species in Israel and authored a chapter on nature conservation in the Sharon region of Israel.

Dr. Berliner investigated the subject of mycorrhizae in relation to the development of *Cistus inacanus* in basaltic and terra-rosa soils in Israel. She found that growth repression of *Cistus* in soils of basaltic origin was related to failure of ectomycorrhizal development in these soils.

Since her return from Harvard, Dr. Berliner had concentrated on the development of mycorrhizae in crop plants growing in solarized soils. She investigated the effect of elevated temperatures on mycorrhizae and consequently on plant growth. Her studies contributed to the understanding of another aspect of this newly developed field of soil solarization.

Ruhama was a most pleasant and cooperative person, ready to help and to provide advice to all who approached her. She had many friends all over the country and abroad. She built her beautiful house with an unusual garden, near Jerusalem, where she was frequently visited by her numerous friends. Ruhama loved art and was an amateur painter.

It was with the greatest sorrow that Ruhama's friends, the scientific community, nature conservationists and many others, received the bitter news of her untimely death at the hands of terrorists. Her passing is a great loss to us all. She will be remembered always as an optimistic, pleasant friend, and an excellent scientist. May her memory be blessed.

J. Katan

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