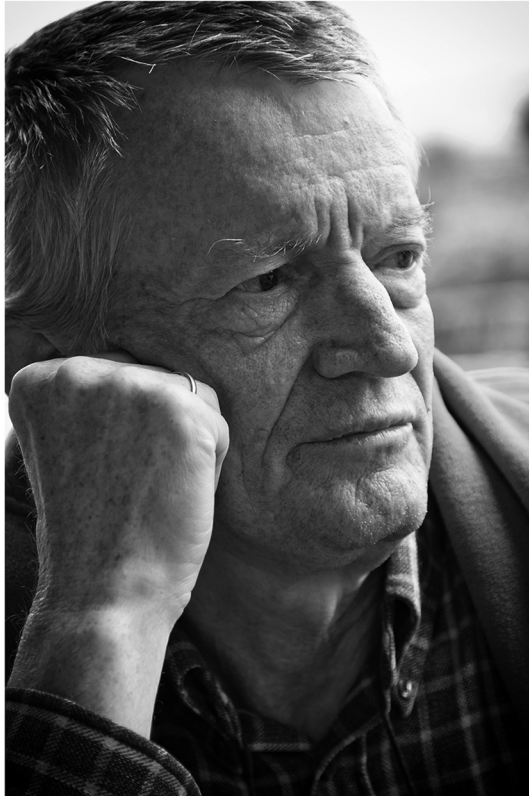


## In memoriam

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**Dr. Ferenc Kozár (1943–2013)**

This issue is dedicated to Dr. Ferenc Kozár, the noted scale insect specialist, who passed away ten years ago.

## Ferenc Kozár (1943–2013) the world-renowned taxonomist and visionary ecologist – A commemoration on the anniversary of his birth and death

Dr Ferenc Kozár was an excellent specialist in agricultural entomology, an internationally recognized expert in the field of scale insect taxonomy, agroecology, as well as the effects of climate change on insects. He was a Doctor of Agricultural Sciences (D.Sc.), for many years the leader of the Zoology Department, Plant Protection Institute of the Hungarian Academy of Sciences (now Plant Protection Institute, Centre for Agricultural Research), and then professor emeritus. Titular professor at Gödöllő University of Agricultural Sciences (now MATE), invited professor in Italy and Turkey, and invited researcher in Switzerland, France, England and many other countries. He died unexpectedly in 2013. His passing away has been an irreplaceable loss for the agrozoology profession ever since. In this volume, we remember Dr Ferenc Kozár on the occasion of the 80<sup>th</sup> anniversary of his birth and the 10<sup>th</sup> anniversary of his death.

Ferenc Kozár was born on March 20, 1943, in Budapest, in the middle of the Second World War. His family lived in Ádánd, a small village near Lake Balaton. He lost his father at an early age, and his mother raised him and two siblings. He graduated from high school in Siófok, a small town on the south-eastern shore of Lake Balaton. He became familiar with scale insects and the problems caused by invasive alien insects at an early age, as the California red scale (*Diaspidiotus perniciosus*), which caused considerable damage at the time in Hungary, did not spare the apple trees in his mother's garden either.

He began his higher education at the University of Agricultural Sciences in Gödöllő in 1962, and two years later he continued his studies in the former Soviet Union at the Plant Protection Faculty of the Leningrad State University (today St. Petersburg). He obtained his diploma in 1965. In Saint Petersburg, he met Raja, who was also a student there, whom he married later. Their first child, Nelly, was born there. After graduating from university, he spent half a year in the northern part of the Caucasus, studying several quarantine scale insect pest species. He worked afterwards at the University of Leningrad on forecasting insect pest outbreaks, population dynamics and faunistics of scale insects. During his Leningrad years, he was greatly influenced by Eugeniy Sugonyaev, a prominent parasitologist, who believed that parasitoids are the best entomologists - and thus the best coccidologists - in the world. There he also met Evelina Danzing, a Russian coccidologist, who became one of his supervisors during his candidate (Ph.D.) studies and they remained in a decisive working relationship. These broad experiences were well used and helped him to be able to observe biological phenomena from various scientific points of view.

Returning to Hungary, he worked at the rural Csopak Plant Protection Service for a few years. He found his first scale insect species new to science in Csopak and this result was published in 1973 in joint authorship with E. Danzig. In the same year, Tibor Jermy offered him a position at the Zoology Department of the Plant Protection Institute in Budapest, where he had worked for the next forty years until his death. He was the head of the Department between 1978 and 1990. In spite of being a devoted leftish thinker, under his leadership, he was able to mitigate controlling attempts from any party influenced demands and created a free atmosphere where science was always the priority. His good leadership is best exemplified by the



fact, that afterwards he was welcomed to be an ordinary member of his closer scientific community, and could stay on as a scientific adviser and later as professor emeritus.

During his extensive work, the research of theoretical and practical issues were always closely connected. Ferenc Kozár had been always open to various ideas and influences coming from the best entomologists and ecologists at the time in Hungary and worldwide. His extremely broad interest becomes apparent if we browse through the titles of his about 460 publications, which included 9 books and 21 book chapters. In over a hundred Hungarian papers, apart from publicising the latest advances in agrozoology, he brought news about emerging pests and exposed and explained many practical plant protection problems to growers, always emphasizing biological control and other environmentally friendly solutions.

Kozár always had a theoretical interest, which also covered ecological issues, such as population dynamics, interspecific competition, food plant specialization and zoogeography. In the 1980s, he was one of the first to draw attention to the changes in the distribution of insect pests in European countries caused by climate change, when global warming was far less a trendy topic than nowadays. In this context, he organized at the XXth International Congress of Entomology (Florence, 1996) the Workshop “Effect of the possible global warming on the insect diversity and distribution”. He contributed to the development and dissemination of the macroecological approach in Hungary. Being a scale insect specialist, he was especially interested in the phenology and population dynamics of his subject animals, even adopting experimental techniques, such as life table analysis and key factor analysis. He developed a complex perspective on this topic and dismissed theories that emphasised only a single biotic or abiotic factor and rather advocated the synthetic theory with its complex, multi-factorial approach. Together with Tibor Jermy and Ferenc Samu in 1992 he wrote a textbook about population dynamics, covering all current theories and models of the time (Kozár et al., 1992). Maybe also stemming from the relatively limited dispersal capability of his group, Kozár was interested in the human impact on the dispersal and spreading of pest species. He saw special importance in men-created linear objects, such as hedges, alleys and road infrastructure, especially highways. He started off research projects that examined the role of such linear infrastructure, which lead to significant discoveries, some of which came about well after his death.

Kozár achieved his most significant results in the field of scale insect taxonomy. He erected 13 new family-groups, 28 new genera and described 195 valid species. He liked naming new genera and species after colleagues and friends, or even his family members (e.g. *Ortheziola jermyi*, *Luzulaspis rajae*, *Benedictyoccina baloghi*, *Coccidohystrix samui*). On the other side, several colleagues named many scale genera and species after his name. In 2015, a new fossil scale insect genus, *Kozaricoccus*, was proposed by Isabella Veá, which has its own family, Kozariidae. Apart from strict taxonomical studies, Kozár had an interest in the biodiversity aspects of scale insect fauna in Hungary, which was extended to the World level, as his detailed faunistic studies were carried out in over 50 countries. In his faunistic studies he has covered nearly all significant national parks and protected natural areas in Hungary.

In 1992 Ferenc and Zsuzsanna Konczné Benedicty met, when Zsuzsa applied for a job at the Plant Protection Institute. Zsuzsa was a teacher of mathematics and arts in a primary school in the neighbouring village, Nagykovácsi. She had excellent classification skills stemming from her mathematical vein and also superb drawing and manual skills as an art teacher. They started to work on a large amount of material extracted from soil and leaf litter from the collection of Natural History Museum and Zsuzsanna was enthusiastic seeing how vast a fauna exists



underground. Zsuzsa was an enormous help to Ferenc by mounting slides and making drawings. The combination of their skills proved to be excellent for taxonomic work. Drawings in over 90% of the new species described by Ferenc were prepared by Zsuzsa.

Ferenc Kozár was not only a flexible thinker, he was also very precise and methodical in collecting taxonomical and faunistical data. He adopted a database approach early on, implemented on a Commodore 6 computer. These databases were later converted and expanded with the help of his then PhD student Ferenc Samu, and resulted in a series of monographs, starting with the “Catalogue of Palearctic Coccoidea” (Kozár, 1998). In further volumes, Zsuzsa Benedicty supplied diagnostic drawings (Kozár, 2004), and they co-authored the monograph “Rhizoecinae of the World” (Kozár and Konczné Benedicty, 2007). This work was later supplemented by the members of the new generation of coccidologists, creating the book of Acanthococcidae and its related families (Kozár et al., 2013).

Ferenc Kozár was a sharp thinker and one, who could always well pinpoint key issues and emerging topics in his broader field of research. Due to his close connection to everyday agricultural practice and his synthetic capability, he never liked oversimplified solutions. His thinking was flexible, and close colleagues tauntingly called him a “sports arguer”, since he was always capable to take an opposing position and find an argument against any view, including those he had advocated just a couple of minutes before. Ferenc Kozár was the supervisor of several MSc and PhD students and hosted plenty of colleagues in his lab for short training periods. All remembering his patience in teaching and the collecting trips over the country together. Those who had the privilege to work with him, can remember the friendly atmosphere, his kind manners, the polite way to expound his opinions, and also his subdued humour and smiles on several occasions. His name was indelibly written in the history of entomology and ecology, and his taxonomic works will be used by future generations of entomologists and plant protection specialists.

Éva Szita, Giuseppina Pellizzari, Ferenc Samu

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