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Ferenc KOZÁR
A Great Coccidologist and Generous Person

We never imagined that we would be here in Sofia to remember and commemorate Ferenc Kozár. Most of us were looking forward to seeing him again at this Symposium. His last days were busy as usual, working hard on several projects. In May, he was in Greece with Panos Milonas and George Stathas and then returned to Budapest to meet M. Bora Kaydan. He left Budapest on 10th of June, with his dear daughter Nelly, for Padova, Italy, to work there as visiting scientist at the University, and there, very sadly, he suddenly passed away in his sleep on 16th of June. He is already sorely missed.

His First Years and Education

Ferenc was born on March 20, 1943, in Budapest, during the middle of the Second World War. The family lived in Ádánd (Somogy County), a small village close to Lake Balaton. He was born into a farming family and lost his father early, so that his mother had to take care of him and his two brothers. Ferenc went to the secondary school in Siófok, a small town on the south-eastern coast of Lake Balaton.

It must have been his early interest in farming that stimulated his future entomological interests because, in 1962, he went to study at the Agricultural University in Budapest. After two years, he decided to pursue his studies in the former Soviet Union, at the Plant Protection Department, in Leningrad (now St.

Petersburg). This was a good choice because Ferenc was interested mainly in pests, such as the San Jose scale, *Diaspidiotus perniciosus* (Comstock).

In St Petersburg, he met and married Raja, who was also a student there, and his daughter Nelly was born there. He graduated in 1965. His Master's thesis was on the scale insects in fruit orchards and other trees. He also studied the biology of *Phenacoccus aceris* (Signoret), and *Parthenolecanium corni* (Bouché) in the parks of Pushkin, a town about 24 km south of St Petersburg, and also other scale insects in fruit orchards. At that time, he had the opportunity to stay for six months in Pyatigorsk, North Caucasus, where he studied *Diaspidiotus perniciosus*, *D. ostreaeformis* (Curtis) and *Palaeolecanium bituberculatum* (Signoret). He worked on forecasting outbreaks, population dynamics and faunistics of scale insects. This experience gave him many different scientific points of view. In St Petersburg, he was greatly influenced by Eugenii Sugonyaev, the noteworthy parasitologist. He also met Evelyna Danzig there for the first time. In 1969, Ferenc participated in the International Congress of Entomology in Moscow but he did not meet any of the scale insect taxonomists who were there, much to his regret. He also regretted never meeting Nicholai Borchsenius, who died in 1965. Because of his education, Ferenc was the only foreign coccidologist who spoke Russian and he was always well disposed to help in translating important scientific Russian papers.

In 1971, Ferenc started to study for his PhD in both Hungary and Russia and one of his supervisors was Evelyna Danzig, who was an enormous help to him. In 1973, he was employed as a Research Scientist at the Department of Zoology, Research Institute of Plant Protection, Hungarian Academy of Sciences, in Budapest, where he remained for the rest of his working life. He was awarded his PhD in 1975.

Career

After graduation, he worked in Plant Protection Stations in the Hungarian countryside; in 1968 he moved to Csopak (Plant protection Station of Veszprem) where he stayed as leader of the Laboratory till 1973. During these 5 years he wrote around 28 publications.

In 1973, dr. Tibor Jermy, the famous and internationally acknowledged applied entomologist, head of the Department of Zoology, invited him to work in Budapest at the Research Institute of Plant Protection. Dr. Jermy surely recognized in the young Ferenc the talent of a scientist. A few years later, after Jermy's retirement (1978), Ferenc become the Head of the Department.

The main steps in Ferenc's career are here summarized:

From 1970 onwards, Titular Professor of Entomology at the Agricultural University of Gödöllõ (Budapest) and supervisor of PhD students and postdoctoral scientists.

1973 to 1990: Research scientist, Department of Zoology, Research Institute of Plant Protection, Hungarian Academy of Sciences.

1978 to 1990: Head of the Zoology Department, Hungarian Academy of Sciences, Budapest.

Permanent member of the Governmental Examination Commission in the Agricultural University of Debrecen.

1991 to 2013: Scientific Consultant Department of Zoology, Research Institute of Plant Protection Hungarian Academy of Sciences.

From 2012: Emeritus Professor in the Research Institute of the Hungarian Academy of Sciences;

In addition, during his professional life, he was a member of the Council of IOBC (International Organization for Biological Control), for both the Western and the Eastern Palearctic Regional Sections. Also, at various times, he was President, vice President, and member of the Hungarian Plant Protection Society, the Zoological Society and the Entomological Society, and of various Committees. He was also a member of the Editorial Board of the *Journal of Entomological and Acarological Research*, and of *Acta Phytopathologica et Entomologica Hungarica*. In 1983, he organized in Budapest the IV International Symposium on Coccidology. At the XX International Congress of Entomology, held in Florence (Italy), in August 1996, he organized a Workshop on "Insects and global warming".

In addition, he was a Visiting Professor or Visiting Scientist in Italian Universities (1988, 1991, 1994,

1998, 2011, 2013), and in Turkish Universities (2000, 2008, 2010), and a Research Professor at the Plant Protection Research Institute in Switzerland (1992, 1993, 1994), and at the Museum national d'Histoire naturelle - Entomologie, Paris (2000, 2001, 2004, 2007). In 1991, Ferenc was awarded the degree of Doctor of Agriculture (Doctor of Academy) for all his achievements in that field. Some years later he was also given the Highest Hungarian Entomological Award.

In April 2010, in recognition of his outstanding contribution to coccidology the International Advisory Committee of ISSIS honoured Ferenc at the ISSIS held in Chania, Crete.

Main Scientific Interests

For over 40 years, Ferenc published a steady stream of scientific papers, either as the sole author or as joint author. The total number of published works in scientific journals and book chapters now exceeds 448, with nine books (including 2 university textbooks). Interestingly, his last paper, published in June 2013, was entitled "An annotated update of the scale insect checklist of Hungary (Hemiptera, Coccoidea)". In this paper, all his faunistic data on scale insect of Hungary are summarized.

His publications dealt with:

Taxonomy of Hemiptera, Coccoidea.

Zoogeography.

Biodiversity in agro-ecosystems.

Impact of climate change on insects.

New pest problems in Europe.

He also studied economic aspects of scale insects, including pheromone extracts, pheromone traps, juvenile hormones and their effects on parasitism, the use of color traps for monitoring adult males, and developmental biology. These topics were also studied by his PhD students.

He surveyed national parks, fruit orchards, forests and, more recently, the highways of Hungary for scale insects. He also visited and collected scale insects in many countries in the former USSR and in Europe, particularly in Switzerland, the former Yugoslavia, Greece, Italy and Turkey. From these visits, he gathered a lot of data for his faunistic and bio-geographical studies.

Ferenc was deeply interested in the issue of climate change, and published an article on the northern extension of some species and the possible role of global warming in 1986(!), when climate change was far from the trendy topic that it is today. He studied the northern advance of scale insects, particularly *Diaspidiotus perniciosus* and *Pseudaulacaspis pentagona* (Targioni Tozzetti), and more recently *Pseudococcus comstocki* (Kuwana), *Planococcus citri* Risso and *Planococcus ficus* Signoret. He had at least 25 years of records from central Europe on the distribution of *D. perniciosus* and *P. pentagona*. Ferenc followed up these studies by checking the effects of severe winters and found that some of these scale insects survived to continue their northern advance.

His Taxonomic Work

Ferenc described his first new species, namely *Physokermes inopinatus*, with Evelyna Danzig, in 1973 and from then on he never stopped. Around 1974 or 1975, Ferenc met Michael Kosztarab and they started a cooperation that resulted in their book of 192 pages published in Hungarian in 1978. This was then expanded to a book of 456 pages on the *Scale Insects of Central Europe* published in English in 1988, a work that has been widely used since.

In March 1992, Ferenc met Zsuzsanna Konczné Benedicty, a teacher of mathematics and drawing when she applied for a job in Plant Protection Institute. They started to work on a large amount of material extracted from soil and litter in the collection of the Hungarian Natural History Museum, in Budapest, from which Ferenc showed that a vast scale fauna exists underground. Zsuzsa was an enormous help to Ferenc, by mounting slides and making drawings, and together they wrote many papers and were co-authors of the book *Rhizoecinae of the World*.

Ferenc erected about 13 new family-groups, 32 new genera and described about 209 valid species. He liked naming genera and species after people who had helped him; and many of his colleagues also named scale insect species after him in recognition of his deep knowledge in this group and his help and advice (see Table 1).

Table 1. Genera and species of scale insects named after Ferenc Kozár

Genus	***Kozaricoccus* Avasthi & Shafee, 1984**
Species	*Pseudococcus kozari* Savescu, 1984
Species	*Dysmicoccus kozari* Pellizzari & Fontana 1996
Species	*Phenacoccus kozari* Williams, 2004
Species	*Corandesia kozari* Foldi 2009
Species	*Brevennia (Heterobrevennia) kozari* (Kaydan, 2011)
Species	*Mixorthezia kozari* Vea & Gimaldi, 2012
Species	*Brevennia* (*Brevennia*) *ferenci* Danzig & Gavrilov-Zamin, 2012
Species	*Hadzibejliaspis ferenci* Pellizzari, 2013

Along with several co-authors, Ferenc also described many species of mealybugs, ensign scales, and the peculiar family Carayonemidae, notably with Jan Koteja, Daniele Matile-Ferrero, Dug Miller, Imre Foldi, Giuseppina Pellizzari and Bora Kaydan, and he collaborated with many others. Ferenc also spent time in South Africa with Jan Giliomee working on the family Asterolecaniidae and together described a new species. Recently, Ferenc started to work on the family Eriococcidae and described several new species and has since written a book of more than 650 pages on the Palaearctic Eriococcidae (*Acanthococcidae and Related Families of the Palaearctic Region* - now published posthumously).

Clearly the great breadth of Ferenc's scientific contribution to the study of scale insects has added greatly to our understanding in this field, but here we want to remember also his personality. There is no doubt that he was a great coccidologist but he was above all a very kind and generous man. Indeed, "kind" and "generous" are the two most recurrent words used by people when remembering Ferenc. Ferenc was most generous in all kinds of ways - in giving scientific help, in providing answers to various questions, in suggesting solutions to problems, in providing identifications, in handing over scale specimens and in translating scientific papers from Russian. Everybody could rely on him and, most importantly, he was really happy to help and to discuss scale insect matters. He was the supervisor of several PhD students and hosted many other researchers in his laboratory for short training periods; they still remember the time they spent with Ferenc and the collecting trips they went on all over the country. He introduced many people to the coccidological community and those who had the privilege to work with him remember the friendly atmosphere, his kind manners, the lively way he expounded his opinions, and his humor. He was always looking for scale insects, in every place and in every situation: we suppose that many of us have some anecdote to recall about this. He still had much to offer to science and will be missed greatly and dearly by the coccidological community, but mostly by his team Zsuzsanna Konczné Benedicty, Kinga Fetykó, Balázs Kiss and Éva Szita, who have lost their authoritative guide.

Our sympathies also go out to his beloved family: his wife Raja, his daughter Nelly, his son Fercsi and his grandchildren.

Ferenc was a great coccidologist and a generous person, but for us, who knew him deeply, *he was above all a beloved friend*.

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