

Preface

This book is dedicated to Zoltán Tuba. Its origin was a symposium entitled *Ecological Responses of Bryophytes to Changing Climate*. It was presented at the American Bryological and Lichenological Society (ABLS) meeting with the Botanical Society of America (BSA) in Chico, California, in 2006. Nancy Slack, then president of ABLS, and Zoltán Tuba of Gödöllő University, Hungary, organized the symposium, which included speakers from many different countries. An editor at Cambridge University Press (England) saw the program on the Internet and asked the organizers to write a book on this subject. All the symposium speakers agreed to contribute chapters; subsequently, others doing important work in this field were asked to join them. Zoltán Tuba worked on the book with Nancy Slack from 2006 until shortly before his untimely death at 58 in July 2009. In the fall of 2009 Lloyd R. Stark, an active researcher in this field and co-author of two of the chapters, agreed to work with Nancy Slack to finish the book. Zoltán was a major contributor to research in ecophysiology of bryophytes in relation to climate change, as well as in other fields. He will be greatly missed as a scientist as well as a friend and co-worker.

A number of people have written to the present editors about Zoltán. In addition, part of an obituary by Zoltán's mentor, Professor Gábor Fekete: In Memoriam Zoltán Tuba (1951–2009), in *Acta Botanica Hungarica* vol. 52/1–2 (2010), is quoted here:

On July 4, 2009, Professor Zoltán Tuba, a leading expert in plant ecophysiology, left us forever. Even though his tolerance and desire for life had been as strong as the intensity with which he had lived his life, the horrifying illness won over him after one-and-a-half years of heroic battle.

Zoltán was born in 1951 in Sátoraljaújhely in northern Hungary, and received a degree from József Attila University in Szeged. In 1976, wrote Professor Fekete,

A young college student showed up in my office at the Department of Botany of the Hungarian Natural History Museum. He was Zoltán Tuba. His eyes reflected intelligence and his words were full of ambition.

Later, in 1978 they became colleagues at the Botanical Research Institute of the Hungarian Academy of Sciences, where Fekete was the leader of a research team. Professor Fekete wrote:

Zoltán Tuba started his work at an extraordinary pace. He wanted to become a great researcher. It did not matter whether there was twilight, rain, summer or winter, he always completed his scheduled fieldwork. In 1985 he was invited to the University of Agriculture at Gödöllő where he was a full professor from 1992, and a department chair.

Zoltán Tuba received a Doctor of Science degree in 1998 and directed doctoral studies in biology at Szent István University. Fekete continued,

His dreams came true one after another. The establishment of a great scientific school without any local tradition... is unprecedented. Foreign scientists were a daily sight in the internationally renowned plant physiological laboratory... He developed the only postgraduate doctoral program in ecophysiology in Hungary. His exceptional achievements were acknowledged by the Hungarian Academy of Sciences with the establishment of a research group in plant ecology within his department.

Tuba himself was a visiting professor at the University of Karlsruhe and at Edinburgh and Exeter. His research had an enormous range, including much work on the desiccation tolerance strategies of plants. In terms of this book, one of his most important accomplishments was, in Fekete's words:

He was among the first in Central and Eastern Europe to launch an experimental research program to study the ecological effects of climate change (rising atmospheric CO₂ levels and temperature). He established in 1993 an experimental research station and a field laboratory with CO₂ fumigation equipment at Gödöllő, which was regarded as one of the core projects of the Global Change and Terrestrial Ecosystems international research program.

Zoltán was one of the first to work on poikilohydric and desiccation-tolerant cryptogams [mainly bryophytes] under elevated CO₂ concentrations, the subject of one of his chapters in this book.

Fekete continued:

Zoltán was not an easygoing man. He did want to accomplish his far-reaching goals and ideas ... He always focused on scientific goals and not on personal success. He was aware of the importance of teamwork ... He generously supported his young colleagues, helped to build their careers, and introduced them into the international community.

Michael C. F. Proctor of Exeter University, who was Zoltán's friend and colleague and the author of one of the chapters in this book, wrote:

I first met Zoltán Tuba at the meeting of the International Association of Bryologists in Budapest in 1985. He was an outgoing, energetic and enthusiastic young bryological physiologist who worked tirelessly to make sure we all had a good meeting and enjoyed Budapest. I met him again ... when he was visiting the Department of Ecology and Natural Resources in Edinburgh. During the 1990s he and his colleagues spent time in my laboratory in Exeter and I made a number of visits to his department in Gödöllő. His department was small but enthusiastic and productive. Its interest ranged widely across ecophysiology, including bioindication of heavy metal and sulphur pollution, plant responses to elevated CO₂, aquatic vegetation, effects of drought in Hungarian calcareous and steppe grasslands, and desiccation tolerance. The department had an open-top chamber and later a free-air carbon-enrichment facility. The lab was like a family, with stresses and strains like all families, but close-knit nevertheless. Zoltán Tuba was the Professor, tireless in working for his department and its place in the world, ambitious for it, sometimes exasperating, quick to spot and try new opportunities, techniques or ideas, a driving force, an enabler, a catalyst. He got things done. He had the good fortune (or good judgment) to be supported by a strong, diverse and loyal team, whose aptitudes were complementary to one another and to his own.

Zoltán was a larger-than life person, sometimes impulsive, but kind, warm and very human. He was very much a family man. I look back with pleasure at time spent with Zoltán, Ildiko and their two boys ... and on expeditions into the Hungarian countryside, and no less on their

visits to England. One of my abiding memories is of the four of them standing in the evening sunshine above the cliffs at Land's End, looking out over the Atlantic. Zoltán will be sorely missed.

Zoltán's close friend from Budapest and author of another chapter in this book, Tamás Pócs, wrote:

I knew Zoltán for more than 30 years, as we worked together at the Vacratot Ecological and Botanical Research Institute and even after he left to head the Gödöllő department, we kept close contact and were good friends until his death. He was a very straightforward man, who did not keep his opinion in secret. . . He supported all good ideas and involved in his research many talented young students and colleagues. It is typical for him, when he received the highest Hungarian award, the Szechenyi Prize for his scientific results, he did not use it for himself nor for his own research but started a foundation to support the higher education of talented secondary school students at his home school. . . He was a many-sided man, fond of geography, ethnography, history, literature, especially in his homeland from which he edited a monograph of 1800 pages, entitled "Bodrogkoz." He was a man with a good sense of humour, always keeping up the mood of his company. He liked to live, liked good food and was a connoisseur of good wines . . . Before his death he was proposed to be a member of the Hungarian Academy of Sciences. To our greatest sorrow he could not live to see this honour.

Zoltán Tuba was fond of fieldwork, and continued to participate in field research until almost the end of his life. In recent years he traveled to India, Madagascar, and Brazil. In 1997, after the International Congress of Bryology near Beijing, many field trips were provided by the organizers. Zoltán Tuba and I (Nancy Slack) together with two other westerners and a larger number of Chinese scientists, chose to go to the far reaches of Sichuan Province. We traveled by mini-bus from Chengdu over the mountains to Jiuzhaigou, a national reserve with magnificent forests full of bryophytes. On our way, we came to an area of loess hills (loess is a deposit formed from wind-blown silt). Zoltán, a large man, hurried out of the mini-bus and scrambled up a loess hill, followed by myself. He was very excited because the vegetation was so similar to the loess vegetation he had studied in Hungary.

Even though much of his professional life took place in the laboratory and as an administrator, he was very much in touch with plant ecology and phytosociology in the field, in Hungary and elsewhere.

Zoltán Tuba was a man of great energy and enthusiasm. For Nancy Slack it was a pleasure to work on this book with him, and so sad that his life was cut short. As you can read in his introductory chapter, many of the aspects of bryophyte ecology with which he was concerned in his laboratory are presented by the authors of this book.

Michael Proctor,
Tamás Pócs, and
Nancy Slack