Prof. Dr. rer. nat. Elke Zimmermann

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Prof. Dr. rer. nat. Elke Zimmermann, the director of the Institute of Zoology of the University of Veterinary Medicine Hannover, Germany, died prematurely on July 25, 2019 at the age of only 61 years.

Elke grew up in Stuttgart, Germany, and discovered her love of nature at a very young age. As a young adult she had already developed her scientific skills, winning the prestigious German scientific competition “Jugend forscht,” and breeding frogs in her parents’ house.

Elke studied biology between 1977 and 1982 in Stuttgart-Hohenheim and discovered her interest in primates early on, during a practical on the ontogeny of common marmoset behavior at the Georg-August University, Göttingen, in 1978. She completed

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her PhD in 1985 at the University of Stuttgart-Hohenheim on the behavioral physiology of acoustic communication in poison dart frogs, but soon broadened her scientific scope and completed her habilitation (a German postdoctoral degree that qualifies the holder for a professorship) in 1990 on “Acoustic communication of animals.”

During her habilitation period Elke established one of very few successful breeding colonies of gray mouse lemurs (*Microcebus murinus*) that stayed with her for the rest of her life. This decision profoundly shaped her professional career, and the gray mouse lemur and subsequently other nocturnal lemurs became her most important study species for the next two decades.

After two years of working as senior scientist in Prof. Markl’s working group at the University of Konstanz, Elke moved to the German Primate Center (DPZ) in 1992. She created the Biocommunication working group at the DPZ and in 1994 initiated a long-term field project on nocturnal lemurs in Ankarafantsika National Park, Madagascar. This project is ongoing and has been codirected by her and one of her first PhD students, Ute Radespiel, for more than a decade. Elke and her field students worked on topics ranging from socioecology, reproduction, seasonality, and health to the communication and evolution of mouse lemurs, sportive lemurs, and woolly lemurs. The resulting publications of members of the Zimmermann working group have substantially increased our present knowledge of the species diversity, lifestyles, and adaptations of nocturnal lemurs in Madagascar.

Only after a few years of working in Ankarafantsika, Elke was the lead author on the description of a new mouse lemur species, *Microcebus ravelobensis*, and later contributed substantially to further species descriptions of mouse lemurs and sportive lemurs. Her contributions of species-specific acoustic repertoires, in particular to our growing understanding of loud calls (sportive lemurs) and advertisement calls (mouse lemurs), pointed to the importance of vocalizations in the context of searching for mates and ultimately in the speciation of cryptic primate species. Elke was also one of the first to analyze the ultrasonic acoustic repertoires of mouse lemurs by means of various generations of highly sensitive acoustic recording techniques.

Elke established a second breeding colony of mouse lemurs in 1996 at the DPZ, this time one for Goodman’s mouse lemur (*Microcebus lehilahytsara*), which had never before been bred in captivity. This species served as a comparative model to the gray mouse lemur and allowed us to understand phylogenetic constraints and behavioral plasticity in these two small primate species. A breeding colony of *Tupaia belangeri*, a closely related outgroup to primates, complemented the research opportunities in the Zimmermann working group.

Elke was offered a full professorship at the Institute of Zoology in Hannover in 1996, which she kept until her death. She conducted a multitude of studies on captive mouse lemurs and tupaia over the next 22 years. Topics ranged from aspects of reproductive biology, female dominance, health and lateralization, to her main academic interest: the evolution of acoustic communication, communication of emotions, hearing, and the dynamics of cognitive performance across different life stages. Elke also supervised other primatological projects on apes, galagos, and proboscis monkeys in continental Africa and on Borneo. However, she will always be remembered as one of the few world experts on the acoustic communication of nocturnal lemurs.

Overall, Elke’s scientific legacy consists of more than 170 scientific publications and supervision of more than 40 doctoral students and more than 50 master’s and bachelor

students. Elke was a dedicated teacher with a particular interest in capacity building of Malagasy students, field assistants, and local staff. For example, she accepted six Malagasy PhD students over the years, all of whom spent more than one year of their PhD period in Hannover.

Besides her scientific research, Elke was a member of many scientific societies, including the International Primatological Society (IPS, since 1988). As one acknowledgment of her scientific achievements, she was invited to be a plenary speaker at the 2014 IPS meeting in Hanoi, Vietnam, presenting a talk titled “Modeling the ancestral primate condition: Lessons to be learned from long-term field and laboratory research of the lesser mouse lemur.” She was highly esteemed by her international and national collaborators, colleagues, and by her former and present students.

We will miss this consummate scientist with a profound interest in primates in general and lemurs in particular. Elke Zimmermann was an ever helpful teacher and mentor. She left too early and will not be forgotten.