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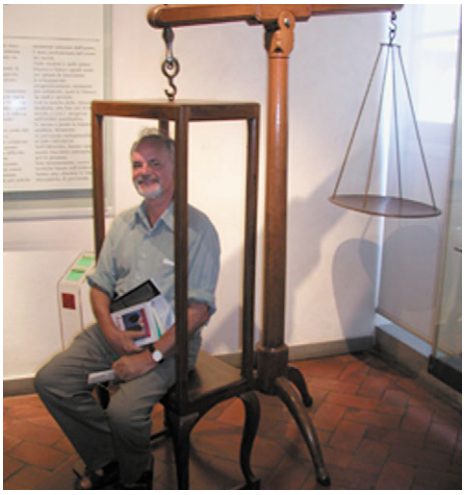
Obituary

Peter L. Lutz

Peter Lutz, a pioneer and thought leader in whole-organism integrative physiology, died from cancer on 28 February 2005 in Boca Raton, Florida, at the age of 65. Peter is remembered by students and colleagues for his charisma, energy and enthusiasm and especially for his insightful and penetrating work in the areas of marine biology and brain anoxia tolerance. Peter was an Editor of *The Journal of Experimental Biology* from 2000, participating in the dramatic growth in quality and readership of the journal led by Bob Boutilier and continued by our current Editor-in-Chief, Hans Hoppeler.

In addition to being remembered by his colleagues nationally and internationally as pre-eminent in his scientific fields, Peter was held in similar high esteem by former students and fellows who enjoyed the privilege of learning under his infectious enthusiasm and nurturing mentorship. This was epitomized by a comment from a friend and colleague, Dr David Jones, of the University of British Columbia, "Peter always had exceptional students and they went on to do exceptional things."



Peter was a role model for all of us, with his lively interest in all things biological as well as his zest for life. Every symposium attended was an adventure, every resulting discussion terrific fun. Peter started his scientific career at the University of Glasgow, Scotland where he completed his PhD in 1970 on osmotic regulation in the perch. Following lecturer positions in Nigeria and in Glasgow, Peter continued as a post-doctoral fellow with Knut Schmidt-Nielsen at Duke University, North Carolina. Following a position at the University of Bath, England, where he explored ion balance in fish, Peter gained a position at the Rosenstiel School of Marine Biology and Atmospheric Science (RSMAS) at the University of Miami, Florida (though whether this was despite or because of his thick Scottish brogue is not entirely clear).

In the 1980s, amongst Peter's major contributions to the field of comparative physiology was an extensive characterization of adaptations to diving in sea turtles. Peter's contributions to the world of sea turtle physiology included studies on blood chemistry, lung mechanics, ventilation and gas exchange, the impacts of beach renourishment on the nest environment, the dangers of latex (balloon) ingestion to sea turtle health, and the only study to examine the effects of oil spill exposure on sea turtle physiology. More recent work has involved the investigation of physiological stress and fibropapilloma disease in Florida turtles, which are heavily impacted by this pandemic disease of large fibrous tumors. As a recognized world expert on physiology, Peter also served on a number of government panels concerned with the health and recovery of sea turtle species worldwide. In 1997 and 2003, Peter, together with John Musick and Jeanette Wyneken, edited the two-volume book *The Biology of Sea Turtles*, creating an indispensable source of information for everyone in the field.

Peter's interest in diving adaptations led to the work for which he is perhaps best known: the mechanisms of anoxic brain survival in the freshwater turtle. These studies established for the first time that one mechanism for brain anoxic survival involved the downregulation of major energy-consuming processes, including a decrease in membrane ion channel activity. Closely related studies in his laboratory further established the critical contribution of tightly regulated neurotransmitter systems in this exceptional survival capacity. These groundbreaking contributions not only formed the basis for numerous studies on the regulation of ion channel and neurotransmitter activity in the anoxic brain but also demonstrated the significance of brain anoxia tolerance for a future understanding of mammalian ischemic brain protection and potential stroke therapies. In 1994, together with Göran Nilsson, Peter comprehensively summarized the field of anoxia tolerance in a book, *The Brain without Oxygen – Causes of Failure – Mechanisms for Survival*, which has now entered its 3rd edition.

While renowned for his work on sea turtle health and

physiology and brain anoxia tolerance, Peter had wide-ranging interests. He was proud to be a Fellow of The Explorers Club and published, over the course of his career, papers on the physiology of prawns, crabs, trematode worms, fish, sharks, birds and crocodilians. Peter joked, on occasion, about having not one, but two, papers published with sample sizes of one (on the platypus and coelocanth)!

Besides the purely scientific, Peter was also greatly interested in (and amused by) politics, history and sociology. Being a long-time subscriber and avid reader of the *Manchester Guardian Weekly*, an intense synopsis of international news from *The Guardian*, *Le Monde* and the *Washington Post*, Peter was always well informed and never without opinions, some of which could be leaning noticeably towards the left but were nevertheless defensible. Peter's recent book, *The Rise of Experimental Biology: An Illustrated History*, integrates coverage of the major milestones in the history of the biological sciences, from earliest recorded times until the 20th Century, and examines how modern scientific method has been influenced by the past. This delightfully illustrated book includes photographs of graveyards, odd museums and historical etchings accumulated during a lifetime of travels. Needless to say, any European conference attended with Peter involved seeing bits of the city and its history, always in sandals and often far from the usual tourist track!

In 1991, Peter left the University of Miami to take up an endowed chair as the McGinty Eminent Scholar in Marine Biology at Florida Atlantic University in Boca Raton, where he also served as Department Chair for a number of years. It was here that much of the work on the anoxic brain was done, but, despite the productivity of his time at FAU, Peter could still be found every Friday evening at the RSMAS bar in Miami, carrying on a lively debate about British politics, biology or the dearth of classical music in South Florida.

Because of his outstanding scientific achievements and his numerous editorial activities, Peter was appointed Editor of *The Journal of Experimental Biology* in 2000. In his capacity as Editor, Peter was instrumental in stimulating a dramatic growth in readership of the journal. Peter shared with his friend Bob Boutilier a firm awareness of the power of combining modern genomics and proteomics with comparative physiology to integrate structure and function and provide real answers to complex biological questions. While Editor of the JEB, Peter also acted as co-organizer of two international SEB symposia, bringing together major contributors in the field of comparative biology and culminating in the publication of two special editions of the journal dedicated, respectively, to *Roles of intracellular movement and intracellular structure in metabolic regulation* (2003) and *Defenses against brain hypoxia: molecule to organism* (2004). He also played a key role in organizing this summer's memorial symposium for Bob Boutilier at the SEB meeting in Barcelona. No symposium that Peter attended, of course, would be complete without a tour of the local pubs or wineries, where scientific discussions would be continued over drinks. It is now our turn to remember Peter; at our next gathering of friends and fellows, let us celebrate the original meaning of 'symposium' (a drinking party!) and lift a glass or two to our dear friend and colleague. Peter, you will be sorely missed.

Peter is survived by his beloved family, including his wife Olive, and his sons Michael, Peter and Steven.

Sarah L. Milton
Göran E. Nilsson
Howard M. Prentice
Keith A. Webster