

OBITUARY

Tim Halliday 1945–2019

Timothy Richard Halliday, 73, a zoologist, conservationist and artist, died on 10th April 2019, after a long illness caused by lymphoma, in Oxford, England. Tim Halliday was one of the fathers of the study of sexual selection and a leading light in amphibian conservation; he was also a talented illustrator and will be sorely missed by his family, friends and colleagues.

Tim was the youngest son of Jack and Edna Halliday. Jack was a housemaster and taught biology at Marlborough College in Wiltshire, England, whilst Edna was a housemistress. Fascinated by newts and talented at drawing as a child, Tim decided to study Zoology at Oxford University. After graduating, he trained to be a teacher at Cambridge but then decided he would rather do a DPhil and returned to Oxford.

Tim joined the Animal Behaviour Research Group (ABRG) in the Zoology department, led by Niko Tinbergen, in 1968 and began his studies of courtship behaviour in newts. He was supervised by J. M. Cullen for his DPhil and then carried on in the ABRG as a post doc. Throughout this period (1968–1976), Tim published ground-breaking, synthetic work on newt courtship. His approach was observational, quantitative, comparative and experimental – a tour de force that must have impressed

Niko and the rest of the Group. On top of that, Tim's papers were illustrated with beautiful diagrams and portraits of displaying newts. It was characteristic of Tim that he delighted in using the term 'spermatophoreplay', coined by Houck, Arnold & Thisted (1985), in referring to the preliminary stages of courtship in his diagrams (Halliday, 1990). One of Tim's endearing characteristics was his frequently irreverent attitude. For example, he usually referred to Tolkien's favourite Oxford pub (The Eagle and Child) as 'Fowl and Foetus'.

As Tim finished his post doc at Oxford, the new field of behavioural ecology was blossoming at Oxford and Cambridge. One of Tim's most highly cited papers that was crucial in initiating key elements of this approach was a 1978 chapter in the first edition of *Behavioural Ecology: An evolutionary approach* edited by John Krebs and Nick Davies. This chapter entitled 'Sexual selection and mate choice' was enormously influential and continues to be essential reading for students of the field. It pointed out how little we knew about the process of mate choice and provided a theoretical framework for the many researchers that started working in this field in the 80s. Tim outlined the theoretical problems with 'good genes'

explanations for the evolution of female mating preferences, as well as the importance of conflict between the sexes. The chapter starts with a Dorothy Parker poem (extracted here): ‘Woman wants monogamy; Man delights in novelty, ... With this the gist and sum of it, What earthly good can come of it?’

In 1977, Tim took up a lectureship at the Open University where he stayed until he retired as a Professor in 2009. He contributed to many of the distance learning courses and liked the format where – rather than lecture – he was required to produce copious amounts of beautifully written course material.

In 1987, Tim and Marion Petrie started a study at Whipsnade Park on a free-ranging population of Peafowl (*Pavo cristatus*), where they showed observationally and experimentally for the first time that peahens preferred peacocks with elaborate trains (Petrie & Halliday, 1994). In total, Tim published 100 papers during his career and successfully supervised 15 PhD students. He also supported a number of post docs and many visiting researchers (including Caitlin R. Gabor). Tim loved to collaborate and took a nurturing approach to his students and colleagues, for example, never forgetting a birthday of those he worked with. He was a feminist and did all he could to help and promote the women who had the good fortune to work with him even at a time when such attitudes were rare.

Tim enjoyed introducing his American colleagues to British culture and customs. In the 1980s, one of us (Stevan J. Arnold) did a sabbatical at Oxford and rented the house across the road from Tim and Carolyn. One evening Tim suggested that we sample English pub life, so we walked around the corner to a convenient pub and ordered our pints. We were both surprised when the salubrious atmosphere worked its magic. Despite our inebriation, we were able to formulate a novel explanation for what at the time was viewed as a quandary, multiple mating by females. I still remember his laughter that evening as our little creation took shape. When our proposal was published a few years later (Halliday & Arnold, 1987), it immediately evoked spirited rejoinders, as well as numerous citations.

Tim was always a conscientious member and contributor to the animal behaviour and amphibian scientific communities. He was an editor of *Animal Behaviour* and Senior Editor of *Journal of Zoology*. Tim was incredibly efficient and could be relied upon to produce a required piece of work on time. His office was always immaculate and well-organized. He filed every piece of paper as soon as he received it and said that was the only way he could retrieve anything as he had a poor memory.

He was well respected in the scientific community and served on many committees such as the Council of the Association for the Study of Animal Behaviour and the Council of the Zoological Society of London (ZSL). The ZSL dedicated their 2-day international symposium ‘Mitigating single pathogen and co-infections that threaten amphibian biodiversity’, held recently, to Tim in recognition of his remarkable contribution to amphibian conservation. A special issue of *Froglife* published in November 2018 was also dedicated to Tim: <http://www.amphibians.org/wp-content/uploads/2018/11/FL120low.pdf>.

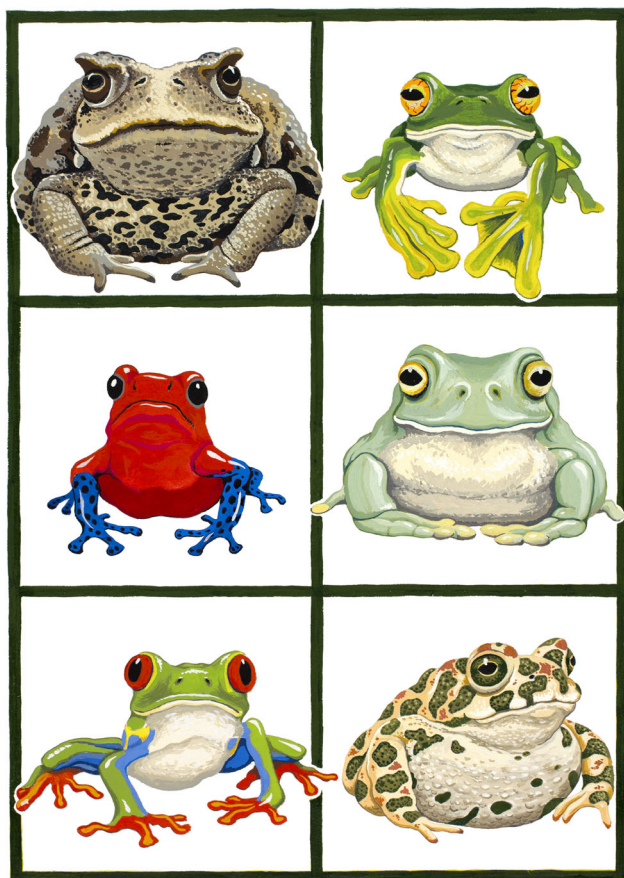
In spite of all his achievements and many accolades, he never became arrogant. In fact, on the contrary, he was often unhappy with his own performance and this self-critical streak sometimes resulted in periods of depression. Despite this, he remained hugely productive: Few people make such important contributions to more than one major field.

Tim’s talent as an illustrator always played an important part in his life. Whilst at college, and during his DPhil, Tim had a phase of illustrating books. Then, he discovered that illustrators did not get paid well so to make more money whilst pursuing a developing passion for conservation, he published his own book in 1978 called ‘Vanishing Birds: Their Natural History and Conservation’ where he was both the author and illustrator. Much later in Tim’s career, a publisher from Oxford approached Tim to work on *The Encyclopaedia of Reptiles and Amphibians* with Kraig Adler. The book was a huge success. Tim once said he was happiest when painting whilst listening to Radio 4.

Tim felt his biggest accomplishment was getting other people interested in amphibians, and he became very good at producing popular papers which highlighted the alarming global decline in this diverse and important group. When Tim tried to persuade the BBC to make a programme about newts, they said no at first. But eventually an episode on amphibians appeared in the BBC series ‘Life on Earth’ with Tim as an advisor. In 2008, the Open University produced ‘Life in Cold Blood’ which was shown on BBC 1 and ‘Under the Skin’ which revealed the in-depth scientific studies which went into the making of each episode. Tim acted as chief academic consultant on these programmes, and he is quoted as saying ‘My personal interest is in the current dramatic decline of amphibians worldwide, a process that has already led to the extinction of several remarkable species. “Life in Cold Blood” shows how challenging survival and reproduction are for many amphibians and reptiles, as well as highlighting what we will lose if these fascinating animals disappear for ever’.

By necessity, Tim’s fieldwork in the UK on newts and toads was conducted at small ponds which were often situated on private estates. One evening in Oxford Tim proposed that his guest (Stevan J. Arnold) accompany him to one of his study ponds. He telephoned the pond owner to say that we would be dropping by and off we went with our flashlights to a home inside the Oxford city limits. The pond was only about 15 m in diameter but brimming with life. In our lights, we saw male newts (*Triturus vulgaris*, now *Lissotriton*) displaying to females in the shallow water at the edge of the pond. We heard hedgehogs foraging in the underbrush close to the pond and easily found them with our lights. This pond was one of many crucial amphibian breeding sites that Tim had located in the vicinity of Oxford and Milton Keynes. Later Tim and his students published formal surveys of amphibian breeding sites and emphasized the fragility of amphibian persistence in the English landscape. These early experiences and publications undoubtedly inspired Tim to be one of the first to recognize the immediacy of worldwide amphibian decline.

Tim was instrumental at setting up the *Triturus* group (before the recent taxonomic changes) and organizing their conferences. These conferences were a great place to network and



for new researchers to gain experiences. In 1989, Tim helped organize the first World Congress of Herpetology. It was at this conference that the Declining Amphibian Populations Task Force (DAPTF) was established with Tim at the helm. In honour of Tim's contributions to addressing issues of amphibian declines, a new frog species found in Sri Lanka was named after him, *Philautus hallidayi*.

Tim was married to Carolyn Halliday who taught Biology, and they had three children who all grew up in their delightful home in North Oxford. Sam, 44, is now a senior lecturer in the English Department at Queen Mary University. Jo, 38, is a lecturer in Human and Animal Epidemiology at Glasgow University. Their youngest, Alice, 33, has a fellowship position in Bristol working on vaccines. Tim enjoyed having cats and spending an inordinate amount of time on the pond he built in his garden – it took quite a lot of work to maintain the pond so that its resident amphibians thrived.

Tim and Carolyn were an integral part of the life of the biological community in Oxford. They maintained close friendships with many of the biologists working there and played host to many of the visiting scientists that passed through the city. They loved to entertain and a trip to Farndon Road would include a wonderful meal cooked by Carolyn, invariably made with home-grown vegetables from Tim's allotment, and much laughter as Tim regaled us with colourful reflections of both fellow biologists and all things biological.

During Tim's illness, he had particularly creative spells during which time he focussed on painting. He held an exhibition of his work at St Hugh's College, and the considerable proceeds of the sales went to lymphoma research. Every Christmas, Tim would send a card of one of his drawings to his friends – <http://www.hallidayfarndon.co.uk/amphibians.html>. In 2018, Tim sent a drawing of two fire salamander morphs – the last card from Tim. His passing was a great loss to all who knew him.

There will be a celebration of Tim's life in New College Chapel, Oxford, UK, on the morning of Thursday July 18th 2019. All welcome.

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References

- Halliday, T.R. (1990). The evolution of courtship behaviour in newts and salamanders. *Adv. Study Behav.* **19**, 137–169.
- Halliday, T. & Arnold, S.J. (1987). Multiple mating by females: a perspective from quantitative genetics. *Anim. Behav.* **35**, 939–942.
- Houck, L.D., Arnold, S.J. & Thisted, R.A. (1985). A statistical study of mate choice: sexual selection in a plethodontid salamander (*Desmognathus ochrophaeus*). *Evolution* **39**, 370–386.
- Petrie, M. & Halliday, T. (1994). Experimental and natural changes in the peacock's (*Pavo cristatus*) train can affect mating success. *Behav. Ecol. Sociobiol.* **35**, 1213–217.