

## News

### JEB Editor, Malcolm Burrows FRS, retires from Cambridge Zoology Department

On 10 September 2010, Malcolm Burrows retired as the Head of Department in the Department of Zoology at the University of Cambridge after 15 years. During his career, Malcolm has not only achieved a reputation as an inspirational mentor to students and postdocs and a respected co-worker amongst his colleagues, but he has also contributed enormously to *The Journal of Experimental Biology*. Since his first publications in 1968, Malcolm has published 50 papers in the journal – to date, many single-authored – and served not only on the Editorial Advisory Board (1987–1994) but also as an editor, overseeing peer review of neurobiology manuscripts from 1995 to 2004.

Arriving at Jesus College in 1961 as an undergraduate to read Natural Sciences at the University of Cambridge, Malcolm remembers that he was fortunate enough to be given a room in the house of Brian Bush, a neuroscientist in the Department of Zoology. Malcolm recalls, 'At the time, Brian was working on the control of crab joints because of the simple signalling by a small number of sensory neurons at those joints and I thought that was a really neat thing to do.' This turned out to be the beginning of a life-long interest in the association between nervous systems and how they control behaviour. Graduating after specialising in Zoology during his final year at Cambridge, Malcolm joined Adrian Horridge at the Gatty Marine Laboratory in St Andrews to look at the control of eye movements in crabs. Malcolm says, 'Crabs have their eyes out on stalks so they are pretty vulnerable and they have to pull them back in to a socket to tuck them out of harm's way.' Making recordings from the minute muscles that coordinate eye movements as the crustaceans responded to moving visual targets, Malcolm was able to determine the control mechanisms of the eye and published his discoveries in a letter to *Nature* in 1967 and in six back-to-back papers appearing in *The Journal of Experimental Biology* in October 1968.

After completing his PhD, Malcolm went west to the University of Oregon to join Melvin Cohen to look at the strike mechanism of mantis shrimp and teamed up with Dennis Willows to investigate the beating movement of crab mouthparts. After two years in Cohen's lab, Malcolm joined Graham Hoyle, and together they made some of the first intracellular recordings from nerves cells in an intact insect that was able to express some of its normal behaviour. Malcolm explains that, up until then, most neurobiologists measured the biophysical properties of individual cells with little attempt to relate the signals to behaviour. He modestly describes tracing how the motor cells were organised in locusts, recording their electrical activity and then showing how the cells interacted with each other to produce movements.

Bringing these new techniques back to the UK, Malcolm moved to the University of Oxford, where he studied flight and breathing in locusts for three years before being invited by Torkel Weis-Fogh to return to his old undergraduate lab to take up a prestigious Balfour Studentship. Accepting a lectureship two years later, Malcolm reflects on his teaching responsibilities at Cambridge. He says, 'I think research and teaching go well together. They both feed off each other and both are essential to each other. It is fantastic to have interactions with students who bring you down to earth and have wonderful ideas. They make you realise that you don't understand what you thought you did and you'd better go back and think about it a bit more.' At this time his research focused on understanding the properties of tiny local interneurons in insect

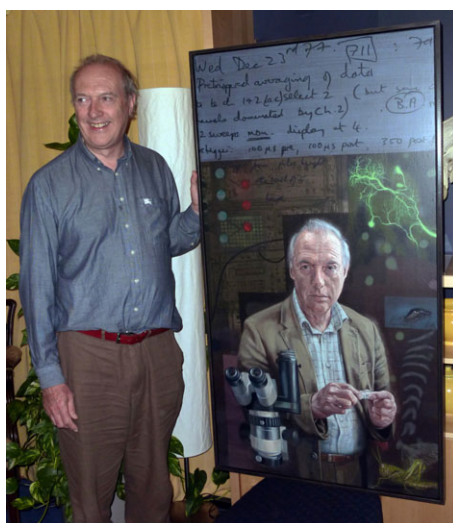
nervous systems. Some of these interneurons did not produce action potentials but organised the outputs of the motor neurons that control leg movement, and others did spike and processed the incoming signals from mechanosensory neurons on the legs.

During his career, Malcolm continued publishing with and reviewing for the JEB and, in 1987, the then Editor-in-Chief, John Treherne, invited Malcolm to join the journal's Editorial Advisory Board. 'I have always been an admirer of the journal,' says Malcolm, and adds, 'I always thought that the niche that it filled was an incredibly valuable one and its policy towards its authors had always been one of understanding what it is to do science,' so when Charlie Ellington invited Malcolm to join the journal as a full editor in 1994, he accepted the invitation. Over the 10 years that Malcolm served as an editor, he oversaw the peer review of papers on neurobiology

and neuroethology, recruiting referees and successfully guiding a wide range of manuscripts through to publication.

Shortly after joining the JEB, Malcolm was invited to become the head of the Zoology Department. 'I think I didn't realise the immensity of what the job entails,' he admits. Despite steering a department of over 300 people through the significant changes that have occurred in higher education, Malcolm managed to maintain his research interests. However, he acknowledges that his personal focus had to shift from neurobiology to biomechanics and behaviour. 'The sort of things I did up until about 15 years ago required huge, long experiments that would last many hours each day. It just wasn't possible to spend that amount of time doing experiments, so I adjusted my research so that it now involves briefer – just as intense – periods, but not so long'.

To mark this transition in Malcolm's career, the Department of Zoology recently honoured him with a symposium reflecting on his scientific career. Inviting colleagues and past students and postdocs back to the department, many remembered their time in Malcolm's



Malcolm Burrows with the portrait painted by Tom Wood that was commissioned by the Department of Zoology.

lab with affection, but also recalled the rigorous training they received. His colleague Simon Laughlin paid tribute to his integrative approach, brilliant experimental technique, clarity of thought and 'deep commitment to getting it right'. Since leaving Malcolm's lab, many of his students and postdocs have gone on to establish their own research labs, applying their scientific training to problems ranging from locust vision to the role of biogenic amines in insects, intracellular recording in rats and the role of the cerebellum in locomotion.

Reflecting on Malcolm's tenure at the Department of Zoology, Prof. Alison Richard, Vice Chancellor of the University of Cambridge, spoke warmly about him and said, 'He is an absolutely exemplary figure, not only a distinguished and great research scientist and teacher, but also somebody who has been ready to put his shoulder to the institutional wheel.' Unveiling a portrait of Malcolm by the artist Tom Wood to commemorate his leadership, Richard attributed the department's current success in no small part to Malcolm, describing him as 'a very fine leader and catalyst

bringing the department's activities together in thoughtful and intelligent ways.'

Closing the symposium, Malcolm thanked his colleagues and co-workers for their help and support over the years before going on to talk about his own current research passions: the transformation of locusts from a solitary to a gregarious lifestyle and fast-moving animals. Having described a trip to the Algerian desert to visit what he hopes will soon be a locust research station funded by the Algerian government, Malcolm also showed new high-speed movies of insects that ranged from owl midges jumping to ant lions righting themselves with a forceful head flick. Having stepped down as Head of Department, Malcolm is looking forward to returning to the lab to concentrate on his research and continue answering the question that has driven him over the last 40 years: how is it doing it and why?

**Kathryn Knight**  
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