

## Awards and Citations

### Presentation of the 2015 Paleontological Society Medal to Derek E. G. Briggs

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Derek Briggs is probably best known to the general public for his work on the Burgess Shale, which he carried out as a Ph.D. student and afterwards, together with Harry Whittington and Simon Conway Morris. Their research was popularized by Stephen J. Gould. The importance of the Cambrian Explosion that Harry, Derek, and Simon highlighted, aided by Steve Gould's book, cannot be overstated. Many students, including myself, read *Wonderful Life* and became interested in evolution, paleontology, and the events that shaped the origins of life. While Harry and Simon stole more of the limelight with their many weird wonders, Derek produced a series of monographs on bivalved arthropods. A particular piece of a great evolutionary puzzle also fell to Derek—the problematic *Anomalocaris*. At that stage it was speculated that what we now know was a segmented grasping appendage might be the tail of the large bivalved arthropod *Tuzoia*. Derek rejected the idea and later, in 1985, Harry Whittington and Derek demonstrated that the *Anomalocaris* appendage is situated on the front end of a large nektonic organism with flaps down the side of its body and a circular mouth apparatus. Nothing like this had ever been seen before. Derek and Harry convincingly demonstrated that this beast does not comfortably sit within the phylum of arthropods, which would suggest in the Linnean classification that perhaps a new phylum should be erected, but we now operate with stem groups and crown groups. A series of discoveries that followed portray *Anomalocaris* as part of the arthropod stem and show how arthropods evolved from velvet worm-like ancestors through a series of large flap-bearing predators, among which the anomalocaridids rose to dominance as apex predators through the Cambrian, Ordovician, and all the way into the Devonian. They evolved into a plethora of predators, and several members even became filter feeders. Derek, Peter Van Roy, and Allison Daley recently described a 2 m long filter feeding anomalocaridid from the Ordovician of Morocco.

Derek branched out during the 1980s to pursue an interest in exceptional fossil preservation and describing other Lagerstätten and their faunas. He and others showed that soft-tissue preservation, while extraordinary at the Burgess Shale, is found geographically and temporally throughout most geological periods. Some noteworthy sites that Derek has researched are Beecher's Trilobite Bed with Úna Farrell, the Hunsrück Slate with Christoph Bartels, the Herefordshire Lagerstätte with Mark Sutton and the Siveters, and the Fezouata Biota with Peter Van Roy.

Among other puzzles, Derek, together with Euan Clarkson, solved the affinities of the conodont animal, showing that it is a chordate. In 1985 Derek moved from Goldsmiths, which is part of the University of London, to the University of Bristol. Realizing that our understanding of how exceptional preservation occurs is poor, he spearheaded the field of experimental soft-tissue taphonomy during the 1990s, decaying worms, shrimps, birds, and lancelets with the help of postdoc Amanda Kear and a number of Ph.D. students. These experiments showed that it is imperative to appreciate a fossil not as a frozen snapshot in time but rather as a corpse: the paleontologist is a forensic scientist who needs to disentangle the effects of decay from anatomy and behavior. However, decay is only one end of the spectrum leading to a fossil, preservation is in many ways more important. Derek's work on phosphatization and pyritization of soft tissues, inducing their precipitation on soft tissues in the lab, as well as his work on organic taphonomy with geochemists at the University of Bristol, made a tremendous impact on our understanding of the original nature of fossil organic tissues. Now soft-tissue taphonomy is a bursting area of research.

Derek's work on the Burgess Shale and the Cambrian explosion, together with Matthew Wills and Richard Fortey, also was of significance to our understanding of the event. By analyzing the disparity of Cambrian arthropods, they showed that, contrary to the views laid out by Steve Gould in *Wonderful Life*, the Cambrian explosion was not a time of wild and woolly experimentation, but rather similar to the modern in terms of disparity.

Derek has always straddled administrative roles alongside his academic career. He served as Deputy Dean of Science and Mathematics at Goldsmiths and as Head of the Department of Earth Sciences at the University of Bristol. His ability to combine administrative excellence with high-level academia did not get unnoticed by the Ivy Leagues. In 2003 Derek was attracted to Yale University as Professor in the Department of Geology and Geophysics. There he directed the Institute of Biospheric Studies, and later became Director of the Yale Peabody Museum. During his tenure as Museum Director he led the planning of a future renovation of the Fossil Halls and was also involved in the delicate diplomacy of returning artifacts collected by Hiram Bingham more than 100 years ago at the Machu Picchu Inca site in Peru. Derek has also been president of both the Paleontological Society and the UK based Palaeontological Association.

My first paleontology book was *Palaeobiology*, edited by Derek Briggs and Peter Crowther, the second edition welcomed as much as the first for summarizing the multifarious studies in the paleontological disciplines. I think I am not the only one that would run down to the book store if *Palaeobiology III* should ever be compiled, but Derek's perspective that resources on the internet such as Google Scholar and Wikipedia have made *Palaeobiology III* superfluous is probably correct... sadly.

Derek's career has facilitated many successful paleontologists that now sit among us through their graduate and post-doctoral studies at Yale and Bristol. Derek's many contributions to the field of paleontology, his mentorship and engagement, make him a more than worthy medalist of the Paleontological Society.

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