


Obituary: Dr Richard Charles Newell (1939–2021)

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Cite this article: Linley EAS(Annie), Brown BE, Field JG (2022). Obituary: Dr Richard Charles Newell (1939–2021). *Journal of the Marine Biological Association of the United Kingdom* **102**, 550–552. <https://doi.org/10.1017/S0025315422000789>

Received: 21 June 2022
Revised: 9 September 2022
Accepted: 9 September 2022
First published online: 15 November 2022

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Early career 1966 to 1977: Queen Mary and Westfield Colleges

Richard Charles Newell was born in Purley, Surrey on 18 January 1939, and grew up in Whitstable, Kent, the eldest son of six, and from the age of eight he was enlisted together with twin brother Peter by their father Gordon, to help with fieldwork on mud flats at Whitstable, where Gordon was working on the life cycle of *Arenicola marina*. This laid the foundation for a career in marine science, with Richard achieving a 1st in Zoology at Queen Mary College (QMC). He then took up a lectureship at Westfield College whilst doing his PhD on the biology of *Hydrobia ulvae*. Subsequently research with a series of talented PhD students – all investigating aspects of the physiology of intertidal animals (e.g. Newell & Pye, 1971) – enabled him to build towards writing *The Biology of Intertidal Animals* (1970) which became an essential companion for students of marine biology. Most of Richard's PhD students from QMC days have now retired; however, Professor Islay Marsden and Professor Barbara Brown have continued to publish and build on his influence and interest in adaptive physiology. Richard and his father revised *Marine Plankton – A Practical Guide* (1977), another marine biology student essential and generally regarded as a first-class reference work for identification of plankton.



1978 to 1980: University of Cape Town

Following a productive few months at Aarhus University during 1977 (e.g. Newell & Kofoed, 1977), Richard visited Cape Town to see the site of T.A. Stephenson's first description of intertidal zonation on rocky shores. He was so enchanted by what he found that he returned to the UK to fetch his yacht, 'Pegasa', surviving an adventurous voyage to the Cape with a small crew of friends and family. He stayed in Cape Town for three years and during this period, he revised *The Biology of Intertidal Animals* (3rd edn, 1979), studied the physiology of rocky shore invertebrates (Newell & Branch, 1980) and worked with the kelp-forest research group. He charmed the students and staff with his infectious enthusiasm and demonstrated how writing up research can be fun and expedited, by first arranging the figures and tables in 'story-telling' sequence and then writing about the figures in one or two enjoyable sessions. The kelp forest research group focused on the role of bacteria in the formation of kelp detritus and quantifying its importance in invertebrate diets (e.g. Koop *et al.*, 1982; Newell *et al.*, 1982; Stuart *et al.*, 1982; Seiderer & Newell, 1988). Richard rented a house on the seafront where he and his young family looked out over the sea at the whales, dolphins and seabirds feasting on the abundant krill and sardines of the Benguela Upwelling whilst marvelling at the shy Cape clawless otter foraging on the seashore.



1980 to 1984: Royal Society Research Group

Richard first descended on the Plymouth science community in 1980 to take up a prestigious Royal Society research award, focused on developing further understanding of the ‘microbial loop’ in marine ecosystems. His Royal Society team was hosted by the Institute of Marine Environmental Research (IMER) where the director Brian Bayne offered state of the art analytical and microscopy facilities. Meanwhile word rapidly spread about his purchase of ‘Fire Dancer’, a stunning classic 42-foot Holman Sloop – unsurprisingly, finding crew to take on cross-channel races and eventually the Armada Cup and Fastnet races proved to be relatively straightforward.

The Royal Society Group investigated microbial decomposition rates and productivity associated with different sources of plant detritus, not only with collaborators at the Marine Biological Association (MBA) and IMER, but also at Duke University and NOAA labs in Beaufort, NC, producing a steady flow of papers (e.g. Holligan *et al.*, 1984; Linley & Newell, 1984; Lucas & Newell, 1984). Much of this research contributed to Richard’s DSc which was awarded in 1983.

In 1981 Richard provided evidence to the House of Lords Select Committee on the titanium dioxide industry, which at that time was occupying Greenpeace at several of Tioxide’s international facilities.

1984 to 2020: Marine Ecological Surveys Ltd (MESL)

The involvement in the House of Lords Select Committee enquiry led to Richard’s company (MESL) being invited to develop a strategic environmental programme for Tioxide worldwide. This initially consisted of baseline benthic and intertidal surveys at sites in France, Italy, Canada, Tasmania, Spain, Teeside and Humberside, combined with development of a programme of mitigation, materials recovery and effluent treatment. Richard was also on hand to provide advice and evidence following pollution incidents, sometimes wrongfully blamed on Tioxide. Later in the mid 80s, Tioxide planned a new plant in Malaysia and during this time Richard mentored both Tioxide staff and the regulator’s own environmental scientists in theory and practice of Environmental Impact Assessment (EIA) and environmental monitoring, whilst Barbara Brown and QMC colleagues contributed tropical reef and wetland ecological expertise. The relationship with Tioxide yielded >75 confidential consultancy reports, made possible by collaboration with Richard’s twin brother Peter and Physalia Ltd (Marcus Trett and colleagues) who provided essential macrobenthic and meiofaunal analytical expertise (Newell *et al.*, 1990). During this time Richard maintained his links with academia via his PhD student John Bythell based in the Caribbean (1984–1988) (now a Professor at Newcastle upon Tyne) and continued to publish with Professor Sandy Shumway and colleagues at University of Connecticut (e.g. Shumway *et al.*, 1985).

In the mid 1990s, Richard’s interest shifted to the design of programmes to assess the spatial and temporal effects of physical disturbance on the seabed by aggregates dredging, and the extent to which the disturbed communities might recover. This included monitoring of marine aggregate dredging sites to inform industry and the regulators on the sensitivity and recoverability of the benthic environment (e.g. Newell *et al.*, 2001). He was a contributing author to several key texts and edited the *Aggregate Dredging and the Marine Environment: An Overview of Recent Research & Current Industry Practice* published by the Crown Estate and the British Marine Aggregate Producers Association in 2018 in culmination of the Marine Aggregate Levy Sustainability Fund research programme. During this period, he provided expertise to the developing offshore windfarm industry on marine

environmental resource monitoring, as well as strategic advice for the London Gateway Port Project. He continued in diverse advisory, review and mentoring roles until mid 2020 – including for the NERC Marine Renewables Research and Knowledge Exchange programme, never losing his enthusiasm for innovative ideas or ability to spot unworkable proposals.

Ultimately it was Richard’s insight into how individual living organisms and whole ecosystems function, developed through years of detailed observation and writing about complex processes simply, combined with a fiercely competitive streak and sheer hard work, which led him to publish dozens of peer reviewed articles over his lifetime. He had collaborators and friends all over the world though mainly in the UK, South Africa and the USA, and published in a diverse range of international journals. However, Plymouth and especially the MBA and IMER (now Plymouth Marine Laboratory) remained his scientific homes throughout, and when he went missing from IMER on the west end of The Hoe he could invariably be located some 10 minute walk to the east chatting to colleagues at the MBA. Science was always a game for him – and one to relish and excel at, and he much enjoyed the satisfaction which flowed from a job well done. He could be relied upon to find the humour in every situation and his mastery of double entendre and banter earned him a constant cluster of friends and colleagues. Scientists and sailors alike gained immeasurably from knowing him and will doubtless have fond memories of his amazing stories and the fun we had together.

Acknowledgements. The authors would like to thank the many friends, colleagues and family members who contributed to this article and in particular Peter F. Newell and Lindsay J. Seiderer whose insight and grasp of the facts has been essential.

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