OBITUARY, DR JOHN H. CROTHERS (TD, MA, PHD, FLS, FIBIOL)

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Field Studies Council, Publications.

John Crothers died peacefully at home on 25th December 2024. He spent his entire working life with the Field Studies Council, first at Dale Fort then as Warden at Nettlecombe Court Field Centre, a post he held for over 30 years. As Warden he effortlessly combined the varied roles of teacher, researcher and Head of Centre with that of occasional handy man, caring for an elderly historic building. His legacy to the Field Studies Council is the depth and breadth of his research, reflected in his published papers, some of which are mentioned here.

DR JOHN HUGH CROTHERS

FIGURE 1. Dr John Crothers,1939-2024.
(Photo: Marilyn Crothers)

John was born in November 1939 in Hayes, England. His childhood was spent on the Welsh Coast. There he developed an interest in rockpools and birds, that fired a lifelong passion and interest in the natural world. Although schooled in Solihull, in the middle of England, he decided to be a marine biologist. His interests were supported by the Head of Biology who helped him set up a marine aquaria in the school prep room.*

After graduating from St Catharine's College, Cambridge he joined the Field Studies Council, starting as Assistant Warden at Dale Fort on the Pembrokeshire coast (1963-1967), where he had the opportunity to pursue his ecological research interests as well as teaching. In 1967 he moved to Somerset to take on the new Field Studies Council centre at Nettlecombe Court (Fig. 2, Fig. 5). Previously, occupied by a boarding school, John had assumed he was moving into a going-concern, but found the building had been left in a poor state of repair, needing much repair work and refurbishment to ready it for the arrival of students in March 1968. But by the end 1968 John reported:

> *"The empty house of a year ago... has been transformed into the Leonard Wills Field Centre, newly decorated, with brightly polished floors... The teaching staff, whose conversation last year was dominated by paint, water, electricity and carpentry, are now heard discussing the weather (in abstruse scientific terms) and even, at times research"* (Annual report 1967-68).

John continued as Warden at Nettlecombe until his retirement in 1999, during this period he welcomed over 73,500 visitors to the field centre*. Although a Warden at Nettlecombe for 32 years John never let his interests become stale or his teaching repetitive, as he said;

> "*You are constantly trying to enthuse new people… The longer you stay in one place, the more interesting it becomes to observe the changes that occur*". *

* Source: A Vision Established: History of the Field Studies Council. Internal document.

FIGURE 2. Official opening of the Leonard Wills Nettlecombe Court Field Centre, July 1968. The opening of the centre was made possible by a gift of £15,000 from Professor Leonard J. Wills.
Top: John Crothers (right) receiving the Leonard Wills plaque from Lord Hurcomb (then President of the Field Studies Council).
Bottom: (left to right): Professor Grimes (Chairman), Miss E.P. Wills, Mrs & Mr Leonard Wills, Mr & Mrs David Wills with John Crothers (Warden) behind them. Dr John Carty (Scientific Director), Lord Hurcomb (President), Pat Wolseley (who suggested Nettlecombe Court as a Field Centre), Roger Chapman (Secretary and Treasurer), John Wolseley (owner of Nettlecombe Court).

While at Dale Fort John started research on the local marine invertebrates by updating the local species lists (Crothers, 1966), before focusing on the Shore Crab (*Carcinus maenas*) (Crothers, 1967 1969a, 1969b, 1970) and then moving onto the Dog-whelk (*Nucella lapillus*) (Crothers, 1977, 1980, 1985a). His main research interest throughout his career was the impact of environmental factors on marine organisms. He started his research at a time when there was an explosion of interest in ecology, particularly on the impact of the environment, morphological variation, and population ecology (Berry & Crothers, 1968, 2009; Crothers, 1985b; Wilson. Crothers & Oldham, 1983). The Welsh and Somerset coast provided a wealth of field sites to study with contrasting exposure, and wave action (Crothers, 1974, 1983a). Any visitor to John's office could not remain unimpressed by the enormous number of boxes containing collections of Dog-whelk shells, each painstakingly labelled with dates and origins, ranging far beyond the local Welsh and Somerset coasts (Fig. 3). His passion for sailing meant family holidays were usually spent along coastlines both in the UK and elsewhere collecting Dog-whelks. Friends and colleagues who mentioned - however unwittingly - that they were visiting seashores were invariably recruited to add to his collection from their own travels. This is reflected in his research papers, which include studies of Dog-whelks on the Scottish coast (Crothers, 2008a), Faroe Islands (Crothers, 2008b) and North America (Crothers, 2008c). John's collection of Dog-whelk shells now sits in the Natural History Museum, London. His published papers earned him a PhD from Cambridge University in 1986.

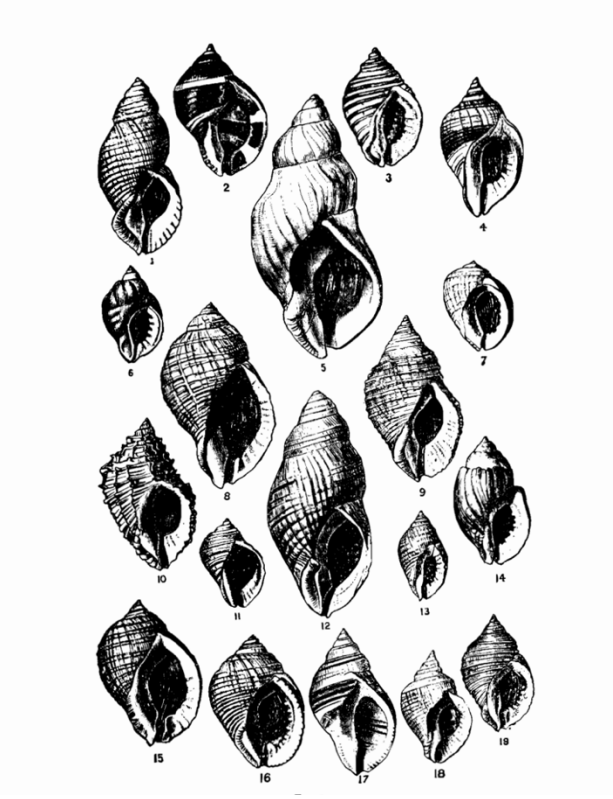

FIGURE 3. Dog-whelks (*Nucella lapillus*) from around Great Britain show variation in shell morphology. In general, there is a graduation from short squat shells found on exposed headlands, to more elongated shells on sheltered shores. The selective pressures of wave action and crab predation, as well as genetics, all impact shell form. (Illustration from Crothers, 1985; Field Studies **6**, p.310).

John's passion for sailing also provided other benefits. Colleagues from the 1980s remember his beloved boat spent long periods in dry dock at the Centre (at least 5 miles as the gull flies from the nearest sea), providing John with some respite from the Centre's pressures as he sanded, hammered, painted, and completed the seemingly endless set of 'essential' tasks needed to keep the boat afloat. The fact that the boat then sank on its regular return to Watchet harbour was apparently of little concern... just being a sign that the shrunken wooden hull was returning to its seaworthy state.

John was passionate about his work, even stopping on the way to the interview for the position of Warden at Nettlecombe Court to check out was what teaching opportunities and potential field sites the local coast offered. Studies of the distribution of fauna and flora along his local coast often started as preparatory work when sourcing new field sites (e.g. west Somerset, Crothers, 1976; Somerset, Crothers, 1981; Severn Estuary, Boyden, Crothers, Little, Mettan, 1977). His continued curiosity led him to revisit some of these areas in later years, looking at changes in distribution and long-term trends (e.g. west Somerset, Crothers & Hayns, 1994; Severn Estuary, Crothers, Little and Mettan 1994).

FIGURE 4. Teaching on a rocky shore (centre: John Crothers).

John was very forward thinking, setting up long-term study sites of natural 'rewilding' and establishing the Nettlecombe Grassland Experiment (Crothers & Lucas, 1982; Crothers,1991) to investigate the impacts of grazing on succession in grassland communities (Fig. 5). This study, like many of John's other initiatives, became a core part of the Centre's teaching (e.g. Crothers, 1987). It highlighted the value of high quality, but accessible, research in field biology. This link was further strengthened by his support for PhD students, some of whom based their research in and around the Centre. At least one doctorate - an investigation into natural selection acting on local land snails - was overseen by John.

FIGURE 5. Aerial view of Nettlecombe Court and Nettlecombe Parish Church circa 1980.
The mown squares (top arrow) are the Nettlecombe Grassland Experiment. The rows of circles (bottom arrow) are snail cages used for research by S.M. Tilling on *Cepaea.*

Long before 'citizen science' became fashionable, John saw the potential value of the student data collected at the centres. Although student data were regarded as 'noisy' as it would probably contain some errors, the large sizes of the datasets, with hundreds of observations being made at the same sites throughout the year(s), allowed trends to be seen. John found students gained confidence in their own results by comparing to datasets for sites* and these datasets allowed for studies of populations structure and long-term change. Student data lead to papers such as Wilson, Crothers, & Oldham (1983) and Crothers (1989a, 1994).

A great advantage that the rocky shore offers for student studies is that much of the flora and fauna sits out on the rocks, readily visible to the naked eye. However, students still need to be able to identify what they find. To support this John produced keys for crabs (Crothers and Crothers1983, 1990), marine invertebrates, (Crothers, 1997) and rocky shore snails (Crothers, 2003a). His key for marine invertebrates is still in use in today (2025). His interests were not restricted to Dog-whelks; other rocky shore snails were also studied leading to papers on the variation in shell size and shape of Edible Winkles (*Littorina littorea)* (Crothers, 1992) and the biology of Common Topshells (*Osilinus lineatus*; Crothers, 2001).

Working on coastal communities, oil pollution was a continued threat to habitats but also provided another opportunity for studying the impact of crude oil and dispersants on rocky shore plants and animals (Crothers, 1983b). The Field Studies Council's Orielton Field Centre had many field sites around Milford Haven Harbour, an area of special scientific interest but also a busy harbour with an oil refinery, with the associated risk of oil pollution incidents. Student distribution data from the 1950s onwards provided a resource for studying the change in rocky shore communities and the impact of pollution incidents. Barnacles, Topshells and Limpets proved useful as indicators of pollution damage (Little, Dicks & Crothers, 1986). In February 1996, the oil tanker *Sea Empress* ran onto rocks at the entrance to Milford Haven, spilling 140,000 tonnes of crude oil and 360 tonnes

* Source: A Vision Established: History of the Field Studies Council. Internal document.

of heavy oil, contaminating over 100 kilometres of the Pembrokeshire coastline. Student data were used to monitor the fate and recovery of the Limpets following the spill (e.g. Crump, Wiliams & Crothers, 2003). John also looked at the impact of the anti-fouling paint TBT on shell form in Dog-whelks and the associated population decline (Crothers, 1989b) and post pollution recovery (Crothers, 2003b).

Over his lifetime he wrote a wealth of papers, which continued long after he retired. He was the long standing editor of Field Studies Journal (from 1976-2003), the Field Studies Council's own peer-reviewed journal (www.field-studies-council.org/resources/field-studies-journal/). Whilst being viewed as esoteric by some academics, the journal reflected John's determination to make all aspects of fieldwork understandable to non-specialists. He was an advocate for delivering 'public understanding' decades before it became fashionable in education. As a result, many Field Studies papers became essential reading for students and teachers engaged in fieldwork, including outside the UK. The popularity of some published papers, and the sales of their reprints, convinced the Field Studies Council to create a separate unit in 1989. Since then, *Field Studies Council Publications* has grown into one of the charity's most successful ventures, helped by the growth of the AIDGAP (Aids to Identification of Difficult Groups of Animals and Plants) project. AIDGAP was founded on a simple concept: putting a scientific name to plants and animals, even those in 'difficult groups', should be something that non-specialists should be able to do. To achieve this, hundreds of 'test versions' were sent to non-specialists for trialling before the final version was published. The transition of AIDGAP into a nationally recognised project, which undoubtedly influenced the approach used by publishers of natural history guides and identification keys well beyond the Field Studies Council, was overseen by John. It is truly a living legacy.

John was an active member of the ecological community serving on many committees over the years. His roles included: Fellow of the Linnean Society London (council member 1980-1984, editor 1991-2025); member of the Malacological Society (council member, vice president 1996-1999); and member of the British Ecological Society (serving on both the education and careers committees). He also served as an Editor of the Linnean Society's Series of *Synopsis of British Fauna* from 1991-2025, a role he enjoyed and continued in later life as his mobility became more restricted. He oversaw the editing of 26 Synopses on groups including centipedes, marine nematodes, polychaetes; marine gastropods, and echinoderms.

Post retirement he continued his research (e.g. Crothers, 2003a-c, 2008a-c, Berry & Crothers 2009) and published a book on rocky shore snails (Crothers, 2012). He was an active member of the Somerset Natural History Society, working on a Checklist of the fauna of the Somerset coast (Crothers, 2014).

Married to Marilyn in 1964, they raised their children at Nettlecombe. His passions were his dogs, sailing, and family, supported by his strong Methodist faith. He is best remembered in the words of a colleague:

> *"John was an academic, a teacher and a warden. Proud of his family, loved his dogs and his centre, and always provided ample whisky for late evening discussions in the warden's flat."*
>
> (A.D Thomas pers. comm: Director 1984-2009).

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