

IN MEMORIAM
Michael Lockhart Baillie
1944–2023



Photo courtesy of Jonathan Pilcher

European dendrochronology lost one of its leading players with the passing of Michael L. Baillie on November 13, 2023. To understand his varied and colourful career, it is helpful to understand how his post and his PhD project came about. In 1964, Reader in Botany Alan Smith and Professor of Archaeology Martin Jope set up an innovative and unprecedented venture of a laboratory to study the environments of past Irish cultures – the Palaeoecology Laboratory of Queen’s University. Initially the laboratory concentrated on pollen analysis but in 1967 laboratory staff were called out to witness the destruction of a 1700-year-old lake dwelling at Teeshan, Co. Antrim by a team of ill-advised road engineers. Horrified by the destruction, the question arose “could we not do something with all this ancient wood?” The seed of dendrochronology in Belfast was sown. Shortly after this, Sir Harry

Godwin, a giant of botanical studies in England, commented “Don’t waste your time, dendrochronology will never work in Ireland as there are no extremes of climate.” In spite of this (or maybe because of it) Alan Smith decided to appoint a newly graduated physics student as a laboratory assistant and allow him to spend two years on tree rings. If there was no progress after that Mike would have been set to work on pollen analysis – what a lucky escape for Mike and for the dendrochronology of Europe! While working in the Palaeoecology Centre, Mike registered for a PhD in the Institute of Irish Studies of Queens University. Early encouragement came from Hal Fritts who visited Belfast in the 1970s and from others in the Tucson laboratory where Mike later spent 6 months in 1986.

Early in his work on extending a chronology back from the present (living trees), Mike

became aware of gaps in the availability of timbers. One of the most obvious was around AD 1349 where there seems to be a cessation of building activity in Ireland, which Mike showed coincided with the Black Death. (*New Light on the Black Death: The Cosmic Connection*; Tempus Publishing, 2006). Mike was able to bridge this gap using building timbers from South-West Scotland. However, his investigations into various gaps in chronologies and also into the rather regular re-occurrence of time periods of consistently narrow rings led him to suggest that these events were linked to the return times of comets.

Later, in 1980/81, another gap in available samples showed up at 950 BC. In this case it was timbers from North-East England that bridged the gap. As Mike often told, he was travelling to a conference in Eastern England, looking out of the train window, when he saw a heap of bog oaks in a field. By luck he saw a road sign that enabled him to locate where the site was. Returning later in the year, a collection of samples enabled the building of the Swan Carr Master chronology spanning 775 years and dating from 1155 to 381 BC.

Mike was involved in a great many projects and to place these on a realistic timeline, we have drawn extensively on his second book *A Slice through Time*. Establishing a tree-ring chronology required building back from the present so once the living oaks had been exhausted, Mike was quickly involved in studying building timbers. This resulted in collaborations with building historians and archaeologists. However, this time in the early 1970s saw a major programme of road building and also land drainage. These works cut through large areas of bogland and revealed many thousands of sub-fossil oak tree trunks offering the promise of a chronology extending into prehistoric times. It was possible that the tree-ring patterns in these bogs was unique to each bog, being driven by local water levels. Once again, the continuation of the project was conditional on demonstrating crossdating between different bogs or areas. The potential offered by these sub-fossil trees was considerable, not only might it be possible to assign 'real' dates to much of the time

span of Irish Archaeology, but also at this time there was great interest from the radiocarbon community in the possibility of a long European tree-ring chronology that could be used as the standard for radiocarbon calibration.

While researching sources of timbers from late mediaeval times, Mike came across the work of art historian John Fletcher who claimed to have dated a number of famous paintings on oak boards, by crossdating with English timbers. After several years of acrimonious correspondence Mike was finally able to prove that the dating was false and also to show that the oak boards were of Baltic rather than English origin. Mike always insisted that a tree-ring date was either right or it did not exist – there were no 'probable' or 'possible' dates. Once a long Irish chronology was established, Mike looked for long-distance connections and naturally turned to consider the long German tree-ring sequence. Although correlations were found between the Irish and German sequences at some time periods, the correlation broke down around 158 BC. After extensive correspondence with German colleagues, Mike was able to demonstrate an error of 71 years that the present German workers had inherited from previous work. Clearly Mike was starting to get a reputation for 'fixing' other people's chronologies. This surfaced again more recently when he was able to suggest errors in the Greenland ice core chronology, which were finally proved using ^{10}Be records in trees and in the ice.

Mike was certainly not just a lab boffin. Over the years he developed a keen eye and vast knowledge in a number of aspects of the antiques trade and for a while had his own market stall. He taught a range of scientific topics to archaeology and geography students and lectured widely in Ireland and elsewhere on dendrochronology, comets, and volcanos. He was a skilled flint knapper and made a number of 'replica' flint tools for the archaeology teaching collection. Mike was also a formidable chess player.

Mike has been a leader and catalyst in the field of tree-ring research, radiocarbon calibration, history, and pre-history for decades. He will be greatly missed by colleagues, and the

significance of his work to researchers around the world will live on.

Mike's Books:

Tree-Ring Dating and Archaeology, 1982, Croom Helm, London.

A Slice through Time, 1995, Batsford, London.

Exodus to Arthur - Catastrophic Encounters with Comets, 1999, Batsford, London.

McCafferty and Baillie, *The Celtic Gods, Comets in Irish Mythology*, 2005, Tempus, Stroud.

New Light on the Black Death - The Cosmic Connection, 2006, Tempus, Stroud.

—Contributed by Jonathan Pilcher
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