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Book Review

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Mind the Gap II: new insights into the Irish postglacial, edited by D. Paddy Sleeman, Jens Carlsson and Jeanette E.L. Carlsson, Belfast, Irish Naturalist Journal, 2014, 150 pp., €20 (paperback) ISBN 978 0 9569704 8 0

This edited volume deals with the important topic of the colonisation of Ireland by both fauna and flora although mostly focusing on the faunal element from mammals to birds to fish to macroinvertebrates. The publication emerged from a number of informal meetings held in Fota, County Cork in 2012 and 2013, and follows on from Mind the Gap: postglacial colonization of Ireland (Davenport et al., 2008) and Proceedings of the Postglacial Colonization Conference (Irish Biogeography Society, 1986). The need for the update is clear as much important work has been published in the meantime, the application of genetic techniques to disentangling native versus non-native species and the identification of three new mammal species in Ireland Nathusias' Pipistrelle bat, Reeves' Muntjac deer and the Hazel Dormouse representing a newly identified native species, deliberate introduction and accidental introduction respectively highlighting the growing issue of invasive species.

The first two chapters by Sleeman and Carlsson review the latest genetic evidence for a vast array of Irish species from mammals to insects, highlighting the increasing number that are now proven to be native and adding to the question of how they got to Ireland and how they survived especially those that may have been around at or before the end of the last ice age. Peter Woodman next reviews the archaeological evidence for the origin of Ireland's native mammals and considers the different approaches taken by geneticists and archaeologists and how to resolve these differences.

Kelly et al. tackles the issue of Ireland's avifauna and its postglacial colonisation, using Iceland, still a partly glaciated island, to give new insights into this process and their contribution to the building up of food chains. O'Toole explores the cultural and archaeological aspects of the Eurasian Crane probably extinct in Ireland by AD 1600. This includes the keeping of cranes as pets, a possible crane cult, place names associated with the crane through the word Cor or Corr; although this is, open to interpretation. Smiddy reviews the success or otherwise of 49 newly identified breeding bird species in Ireland from 1801 to 2010 of which 23 have established sustainable breeding populations with a few other newly arrived species likely to reach this status in the coming years. Most of these species originate in Britain. The list includes ducks and swans, waders, sea birds, passerines, e.g., Mistle Thrush and Carrion Crow, wetland non-passerines, e.g., Little Egret and terrestrial non-passerines, e.g., Great Spotted Woodpecker.

Molloy and O'Connell reassess the post-glacial plant colonisation using pollen analysis and a site on the Aran Islands. This focuses mostly on the woody component of Ireland's flora and notes the survival of many plants, even including cold tolerant ones, was mostly unlikely due to the extensive nature of the ice sheet over Ireland as emphasised by the discovery of glacial landforms offshore. Boland and Bolger consider the issue of colonisation in terms of the soil macroinvertebrate fauna and note that it is poorer generally than in Britain but not in all groups and they suggest multiple origins and modes of transport to Ireland including humans. The chapter focuses mostly on carabid beetles, earthworms and woodlice.

The next chapter by Harrison moves away from particular aspects of the flora and fauna to general issues in exploring the possibility that the climate may be a more important factor than Ireland's insularity. In particular, there is a focus on the cool, cloudy and dull summers and mild, wet winters, which are suboptimal conditions for many temperate species, inhibiting feeding, breeding and hibernation. Harrison focusses on odonata (dragonflies and damselflies), ectothermic vertebrates (amphibians, reptiles and freshwater fish) along with the issue of adaption to the Irish climate. Quigley, in the next chapter, explores in more detail the colonisation of freshwater fish whether natural, anthropogenic or relict and, in particular, explores the idea that low salinity water corridors due to massive ice melt may have helped stenohaline species (intolerant of wide variations in salinity) re-colonise Ireland after the last ice age. The Irish Sea would be an example of one of these possible corridors.

The book concludes with a brief summary of the most up-to-date information on Irish mammals, their likely arrival in Ireland and their closest genetic neighbours where possible by Montgomery. This is followed by a short but very useful glossary of the most technical terms used in the book.

As with a book of this nature and based on a number of informal meetings, it suffers somewhat from a lack of a clearer structure and not enough balance in the chapters published with far too little on flora and macroinvertebrates and on individual species. However, the book is full of critical information, useful ideas and theories to be explored further and future research topics on Ireland's postglacial colonisation. This publication clearly represents a further step in resolving some of the issues of that re-colonisation and raises many more, which no doubt will be tackled in future *Mind the Gaps*.

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