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Short communication

First evidence of a Late Upper Palaeolithic human presence in Ireland

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ABSTRACT

The colonisation of North West Europe by humans and fauna following the Last Glacial Maximum (LGM) has been the subject of considerable discussion in recent decades and within multiple disciplines. Here we present new evidence that pushes back the date of human footfall in Ireland by up to 2500 cal BP to the Upper Palaeolithic. An assemblage of animal bones recovered from a cave in the west of Ireland during antiquarian excavations in 1903 included a butchered brown bear bone (patella) which was recently subjected to two independent radiocarbon dating processes; the resultant dates were in agreement: 12,810–12,590 cal BP and 12,810–12,685 cal BP. This find rewrites the antiquity of human occupation of Ireland and challenges the traditional paradigm that certain biota may have naturally colonised the island prior to human arrival.

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1. Introduction

The colonisation of North West Europe by humans and biota following the amelioration of severe conditions after the Last Glacial Maximum (*circa* 28,200–20,400 cal BP; Clark et al. 2012) has been the subject of considerable discussion for many decades and within different disciplines (Corbet, 1961; Woodman, 1998; Yalden, 1999; Jacobi and Higham, 2011; Woodman, 2011, 2015; Montgomery et al., 2014). Evidence for the recolonisation of Britain by humans dates from *circa* 15,000 cal BP, represented by lithic assemblages, human remains and worked animal bones from at least 16 caves (Yalden, 1999; Pettitt and White, 2012). Until now, the earliest detected human presence on the island of Ireland has been the Early Mesolithic hunter-gatherer camp at Mount Sandel, Co. Derry–occupied from 10,290–9790 cal BP (UBA-2357, 8990 ± 80 BP) (Bayliss and Woodman, 2009) (Fig. 1). Even though an island since approximately 20,600–18,100 cal BP (Clark et al., 2012; Peters et al., 2015), that human colonisation of Ireland should take place so late has been considered improbable because of the potentially suitable environmental conditions and ecosystem present for several millennia prior to the Mount Sandel settlement (Woodman, 1986; Woodman et al., 1997; Wickham-Jones and Woodman, 1998; Woodman, 1998, 2011, 2015, 171–9). Furthermore, Palaeolithic settlements are known from along the Welsh coast (Pettitt and White, 2012), western Scotland (Mithen et al., 2015), Scandinavia (Aaris-Sørensen et al., 2007), and Iberia (Birks et al., 2015)–all locations that would have been navigable by boat.

This study involved dating three brown bear (*Ursus arctos*) bones, two of which have been humanly modified in the form of exhibiting butchery or cutmarks. The bones were recovered from two caves located just 380 m apart - Alice and Gwendoline Cave and the Catacombs - in County Clare in the west of Ireland, during excavations conducted by the *Committee Appointed to Explore Irish Caves* in 1902 and 1903 (Scharff et al. 1906) (Fig. 1). To date, at least 25 brown bear bones and 30 brown bear bones have been identified from Alice and Gwendoline Cave and the Catacombs respectively; many of these were previously unidentified or misidentified in the original antiquarian report (Carden, unpub. data). The bear patella, which forms the focus of this paper, was found in one of the deeper strata in Alice and Gwendoline Cave. The antiquarian report noted the find as, 'a knee-cap of a large bear (E.A. 131) [*which*] shows clearly the incisions of a knife, which was probably used to divide the tendons' (*ibid*., 44). The patella, along with the entire faunal assemblage from the site, was packed in cardboard boxes and deposited in the National Museum of Ireland (NMI) (Natural History Division) in the early 1920s. In 2011, one of the authors

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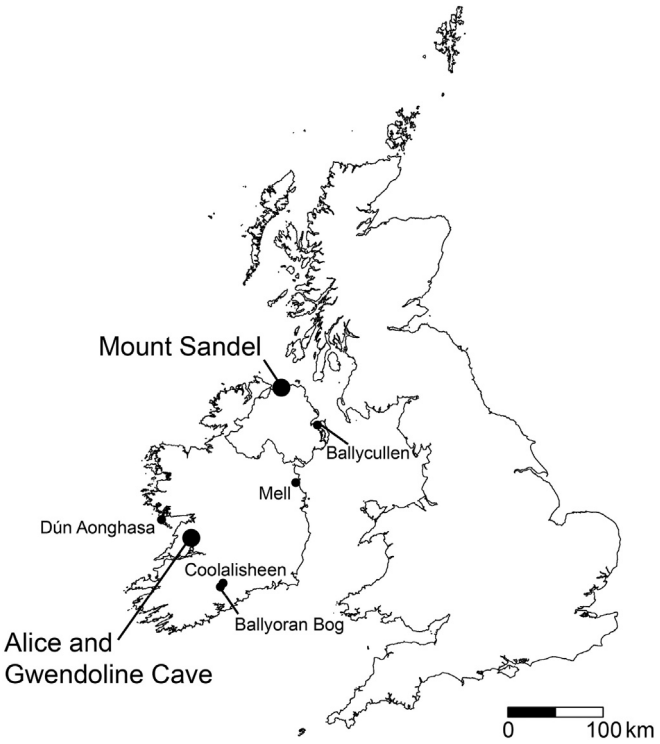

Fig. 1. Location of principal sites mentioned in text.

(RFC) rediscovered the patella during a project involving the reassessment of the antiquarian faunal cave assemblages from Ireland stored in the NMI collections. Modified or butchered bear bones are quite rare in Ireland which led one of the authors (MD) to propose a project to radiocarbon date these samples. At the inception of the project there was no idea of what dates to expect. Alice and Gwendoline Cave and the Catacombs had produced remains of Late Pleistocene fauna (Carden, unpub. data) as well as archaeological material suggesting Neolithic and Bronze Age activities (Dowd, 2015); thus the bear bones could conceivably have related to any such period as bear survived in Ireland until the Middle Bronze Age (Edwards et al. 2011).

In this study, we subjected the brown bear patella with human-induced cutmarks to two independent radiocarbon laboratory dating processes. The results are interpreted and discussed in light of current archaeological knowledge of a post-LGM human presence and faunal colonisation history of Ireland.

2. Study site, materials and methods

2.1. Site and context

The humanly modified (butchered) adult brown bear right patella (NMING: F23919) was one of several thousand bones recovered during antiquarian investigations at Alice and Gwendoline Cave in 1903 (*circa* 3.5 km southwest of Ennis town, County Clare in the west of Ireland). The standard of excavation and recording was exceptionally good for the early twentieth century. Each cave was divided into grids measuring 0.6 m in length and as wide as the cave passage. Grids were excavated stratigraphically with all recovered human bones, animal bones and artefacts numbered with the specific grid code. The excavation team recorded three strata in Alice and Gwendoline Cave. The uppermost 'brown earth, with calcareous tufa' contained moderate quantities of charcoal, bones of domesticated animals, and extinct faunal remains including Arctic lemming (*Dicrostonyx torquatus*), giant deer (*Megaloceros giganteus*) and brown bear (Scharff et al., 1906, 5). Most of the archaeological artefacts derived from this layer including a chert scraper and flint scraper (both now lost), at least four bone pins, worked bone, a gold Viking arm-ring, iron nails and iron debris. This uppermost stratum sealed a layer of reddish sandy clay that contained 'charred or gnawed' human bones. The lowermost stratum was a reddish tenacious clay that produced bones of extinct fauna. A bone point, worked antler, a 'ground' animal tooth and an amber bead were recovered from these lower strata, though only the point and bead can be located at present. Other finds included whetstones, quartz pebbles, 'sawn' bone, a copper alloy Viking arm-ring and a post-medieval coin of James II. Stratification was evidently quite disturbed with extinct faunal remains found through all three strata comingled with bones of domesticates and multi-period artefacts, a typical consequence of the active natural and cultural formation processes that take place inside caves; in the case of Alice and Gwendoline Cave, bioturbation due to badger activities was noted by the antiquarian team.

The numbers applied to the recovered bones and artefacts has made it possible to re-establish the original horizontal and vertical findspots of material. The code inked onto the bear patella (EA131) reveals that it came from the second or third stratum in the Alice passage, 10.4 m–10.9 m inside the entrance (Fig. 2). An undated antler fragment with cutmarks was found in the same grid (Scharff et al. 1906, 68). In addition, various skeletal remains from hare (*Lepus* sp.), fox (*Vulpes* sp.) and brown bear all displaying cutmarks and/or burning were recovered from within this cave (Carden, unpub. data). Human bones (now all missing) of unknown date were documented from nine different areas of the cave, and at the time of excavation were recorded as representing one individual. Bones of sheep/goat, pig (*Sus scrofa*), horse (*Equus* sp.), cow (*Bos* sp.), dog (*Canis familiaris*) and cat (*Felis* sp.) – many of which represented young animals–were also retrieved in addition to four unworked boars' tusks, three concentrations of dog bones, a seashell (*Patella vulgata*) and wrasse (Family Labridae) bones (Scharff et al. 1906, 23–34, 38). Skeletal remains of thrush (*Turdus* sp.), blackbird (*Turdus merula*), robin (*Erithacus rubecula*), starling (*Sturnus vulgaris*), mallard duck (*Anas platyrhynchos*), domestic duck (*Anas* sp.) and tufted duck (*Aythya fuligula*) were also recorded

Fig. 2. Alice and Gwendoline Cave; findspot of bear patella indicated (after Scharff et al., 1906).

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