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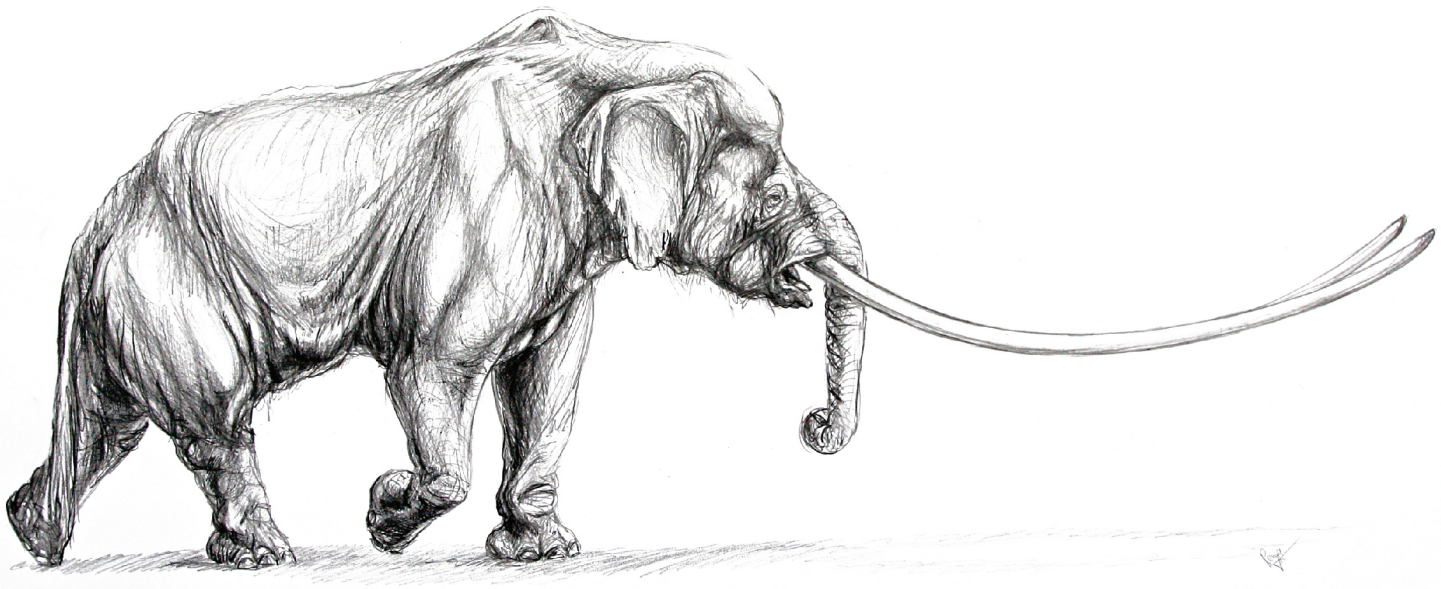

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ABSTRACT BOOK

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Neanderthal-mammoth interactions: re-evaluating evidence for repeated "Mammoth Drives" at La Cotte de St Brelade (Jersey)

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In Europe, Middle Palaeolithic sites with Neanderthal stone tools associated with mammoth remains mainly date to after the MIS-6 glacial (ca. 190,000-130,000 years ago). The recurrent, widespread, though generally sporadic, presence of mammoth remains at Neanderthal sites (e.g. Mont Dol (France), Spy (Belgium) and Lynford (UK)) has been interpreted as evidence for their systematic exploitation (Louguet-Lefebvre, 2005; Schreve, 2006; Germonpré et al., 2012). Isotope evidence further suggests that Neanderthal diets consisted of large quantities of terrestrial meat (Bocherens et al., 2005), which could be satisfied by the exploitation of mammoth and other megafauna. Zooarchaeological evidence for mammoth exploitation (age/body part profiles, bone surface modifications) is, however, limited (Smith, 2012). This paper provides a zooarchaeological re-evaluation and wider contextualisation of the mammoth, and other mammal, remains from La Cotte de St Brelade (Jersey), a site which remains key for understanding and investigating Neanderthal-mammoth interactions during the early Middle Palaeolithic.

La Cotte de St Brelade (CSB) is one of the most prolific Middle Palaeolithic localities in Western Europe (ca. 96,000 lithic and 1,500 faunal remains). Based on the analyses of two distinct "bone heap" levels (Layers 3 and 6), composed almost entirely of megafaunal remains, it has been suggested Neanderthals were repeatedly and systematically driving herds of mammoths over the CSB cliff face. Since publication of the CSB monograph (Callow and Cornford, 1986), the interpretation of the site as a mammoth drive locality (Scott, 1980; 1986) has remained a unique, if untested, hypothesis regarding Neanderthal subsistence strategies and landscape use. Presently, such structured and repetitive subsistence behaviour has been suggested, but never concisely argued, for any other European Middle Palaeolithic site, calling for a re-evaluation of the CSB fauna.

This paper presents results of new, detailed analyses of the fauna recovered during the McBurney excavations (1961-78). 1,494 faunal remains were recorded from all horizons, placing the two "bone heaps" within context. Zooarchaeological techniques, such as species and body part identification, were allied with a range of attributes (weathering, abrasion and root-etching) to fully understand the site formation processes. Furthermore, an oblique light source and hand lens (20xmagnification) allowed for a detailed assessment of bone surface modifications.

Results confirm the dominance of mammoth and woolly rhino with smaller quantities of other species. Overall, per layer, mammoth Minimum Number of Individuals (MNI) are very low, usually 1 or 2. Only within the "bone heaps" do mammoths dominate with MNIs of 7 and 11, respectively. Further data, however, indicates complex site formation and preservation. Bone weathering throughout all horizons, including the bone heaps, suggests more prolonged exposure, repeated input of faunal material and differential preservation, potentially related to shelter from the granite walls.

Neanderthal presence was identified within all deposits through either burnt bone or butchery modifications. Additional cut marks identified on mammoth suggest the exploitation of these individuals, throughout all contexts. Newly identified carnivore modifications were only recorded on faunal material from the "bone heap" horizons. Detailed analysis of the quantity and distribution of these modifications suggests a more complex Neanderthal subsistence pattern than previously acknowledged, questioning the interpretation of CSB as game drive locality. These new bone surface modifications suggests more prolonged Neanderthal occupation in the deposits that underlie the "bone heaps", to the exclusion of other large carnivores. Contrastingly, in Layers 3 and 6 the almost equal quantity and distribution of hominin and carnivore modifications, suggests more discontinuous Neanderthal and carnivore occupation events at CSB.

Contextualising this new research at the broader European scale of Neanderthal-mammoth interactions permits a further, more detailed discussion about the importance of these species in the Middle Palaeolithic diet. Whilst regular exploitation of megafauna by Neanderthals has been suggested, there is no evidence for the systematic hunting of these species and hence their dietary contribution appears limited. Whilst CSB remains exceptional, being unique in the recurrent presence of mammoth remains and Neanderthal stone tools, a more intricate scenario for human-mammoth interactions presents itself. Rather than Neanderthal occupation, punctuated by large-scale game drives, the site is similar to other cave faunas from Europe, with an accumulative role for both hominins and carnivores. At CSB Neanderthals regularly utilised the surrounding landscape, exploiting various species, including mammoth. The CSB ravine system could have provided the perfect location to track and hunt animals, whilst the enclosed site structure provided protection and shelter for butchery and processing. Similarly, this locality would have proved an attractive locale for carnivores, making the fauna accumulated at the site a composite mix of Neanderthal hunts, carnivore kills and natural deaths, and not merely the results of mammoth drives.

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