Mummification in Bronze Age Britain

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Introduction

In previous issues of *Antiquity* (volumes 79 & 81) we have presented the first evidence for mummification in prehistoric Britain. Skeletons recovered from beneath Late Bronze Age roundhouses at Cladh Hallan, South Uist (Outer Hebrides or Western Isles of Scotland), were shown to have been formerly mummified (Parker Pearson *et al.* 2005; 2007; 2013); the osteological and ancient DNA analyses also indicate that these ostensibly articulated single individuals had been reconstructed from the preserved anatomical parts of several people (Parker Pearson *et al.* 2005; Hanna *et al.* 2012). These findings raise questions about the extent, distribution and nature of mummification in prehistoric Britain, a difficult research area since similar circumstances of preservation and recovery to those found at Cladh Hallan are unlikely to be present in most parts of Britain or Europe. Our aim has been to develop a single method of analysis that can be used consistently to identify previously mummified skeletons more widely.

Microscopic analysis of bone histology was one of the main methods used to infer mummification at Cladh Hallan. The most common, almost ubiquitous, form of diagenetic alteration observed within archaeological bone microstructure consists of bioerosive tunnelling produced by invasive microorganisms (Hackett 1981; Hedges 2002; Turner-Walker *et al.* 2002; Jans *et al.* 2004; Nielsen-Marsh *et al.* 2007; Figure 1). There is a growing body of evidence indicating that this bacterial bioerosion is produced by an organism's intrinsic gut bacteria during putrefaction (Child 1995; Bell *et al.* 1996; Guarino *et al.* 2006; Jans *et al.* 2004; Nielsen-Marsh *et al.* 2007; White & Booth 2014), suggesting that bacterial bioerosion of archaeological bone reflects the extent of bodily putrefaction experienced during the early post-mortem stages.

Histological analysis of the femur of Cladh Hallan skeleton 2638 (a composite adult male: Parker Pearson *et al*. 2005) revealed that it had been subjected to only limited levels of bacterial bioerosion, indicating that initial putrefactive activity was arrested. A similar conclusion was reached for the composite female–male skeleton 2613 (Parker Pearson *et al*. 2005; 2013). The condition of the two composite human skeletons contrasts with results of previous microscopic studies on archaeological articulated human bones which usually show extensive tunnelling by bacteria (Hedges 2002; Jans *et al.* 2004; Nielsen-Marsh *et al.* 2007). By contrast, faunal bones recovered from the same machair (shell sand) sediments demonstrated extensive bacterial alteration (Parker Pearson *et al.* 2005; Mulville *et al.* 2011).

Putrefaction is a highly destructive process and the most successful methods of mummification neutralise or remove visceral bacteria to prevent this stage of bodily decomposition (Aufderheide 2003). Bacterial bioerosion can be expected to be absent or limited within bones from mummified bodies. The arrested pattern of bacterial bioerosion observed within the Cladh Hallan skeleton is theoretically consistent with mummification. Consequently, microscopic investigation may be the best and most consistent method for identifying previously mummified skeletons.

A diagenetic signature for mummification?

In most cases previous investigations of the bone histology of *bona fide* mummified archaeological remains (Table 1) have not reported directly or in detail on histological preservation. However, their descriptions of samples and their images reveal that mummified bones usually demonstrate immaculate levels of histological preservation. These results support the hypothesis that ancient mummified bones are unlikely to have been affected by putrefactive bioerosion. However, this typical absence of bacterial bioerosion in known mummified bone is not entirely consistent with the arrested pattern of attack observed within the Cladh Hallan skeletons.

Those mummified bodies examined in previous histomorphological studies are preserved in ways that would have affected putrefaction immediately after death (Weinstein *et al.* 1981; Thompson & Cowen 1984; Stout 1986; Brothwell & Bourke 1995; Garland 1995; Hess *et al.* 1998; Monsalve *et al.* 2008; Bianucci *et al.* 2012). The evidence for onset and subsequent halting of putrefaction in the Cladh Hallan bodies suggests that the method of mummification employed here had an inconsistent or delayed effect on bodily decomposition (Parker Pearson *et al.* 2005). To test the relationship between bone bioerosion and the extent of soft tissue preservation, the microstructures of bone samples from a mummy and a bog body were examined using thin-section light microscopy. These samples consist of the patella of a desiccated prehistoric mummy retrieved from the town of Kawkaban in northern Yemen and the tibia of a partially mummified Bronze Age body recovered from a sphagnum peat bog at Derrycashel, Co. Roscommon, Ireland. The soft tissue preservation of the Yemeni individual suggests that putrefaction was arrested soon after death because of the arid environment (Brothwell pers. comm.). In contrast, only the top half of the Derrycashel bog body retained soft tissue and it is likely that it had putrefied to some extent before it was preserved (Kelly pers. comm.).

Thin sections of the mummified bones were assessed using the standard Oxford Histological Index (OHI) which translates the percentage of remaining intact bone microstructure into an ordinal scale ranging from 0 (worst preserved) to 5 (best preserved) (Hedges *et al.* 1995; Millard 2001). The histological preservation of the Yemeni mummified patella is excellent (OHI=5), although enlarged osteocyte lacunae (natural cavities in the bone microstructure which house osteocyte cells) were observed towards the periosteal (outer) surface (Figure 2). Post-mortem enlargement of osteocyte lacunae has been linked to acidic erosion, staining and the initial stages of bacterial bioerosion (Gordon & Buikstra 1981; Garland 1987; Bell *et al.* 1996; Turner-Walker & Peacock 2008; White & Booth 2014):

- Acidic erosion: it is unlikely that the attack observed within the Yemeni patella was a result of acidic erosion because the bone was still protected by soft tissue, there were no other typical signs of acidic degradation such as microfissuring, whilst the distribution of attack did not form a characteristic diffuse wave of destruction (Gordon & Buikstra 1981; Turner-Walker & Peacock 2008). Acidic degradation would normally result in the destruction of the whole bone over an archaeological timescale (Nielsen-Marsh *et al.* 2007; Smith *et al.* 2007).
- Staining: enlarged osteocyte lacunae caused by staining are usually accompanied by discolouration of the surrounding bone microstructure (Garland 1987; Schultz 1997). Such discolouration was not apparent within the Yemeni sample.
- Bacterial bioerosion: the best explanation for the enlarged osteocyte lacunae observed within the Yemeni patella is that it was exposed to initial putrefactive activity which was rapidly curtailed (Bell *et al.* 1996; Jans *et al.* 2004; Hollund *et al.* 2012).

Histologically, the thin section of the Derrycashel tibia shows the bone to be well-preserved (OHI=5), but it displays numerous enlarged osteocyte lacunae within the sub-periosteal zone that have amalgamated to form larger areas of alteration consistent with bacterial bioerosion (Hackett 1981, Figure 3). The survival of the whole bone and the distribution of attack are inconsistent with acidic erosion or staining. The Derrycashel sample demonstrates lower levels of bacterial bioerosion than were observed in the Cladh Hallan specimen but, overall, this result suggests that the Cladh Hallan diagenetic signature is indeed consistent with mummification using a technique that promoted partial soft-tissue preservation. Fourier transform infrared spectroscopy (FTIR) analysis of the Cladh Hallan bone indicates that its surface layers were demineralized prior to burial, suggesting that mummification may have been achieved through deposition within a peat bog (Parker Pearson *et al.* 2005); the evidence from the Derrycashel bog body provides further support for this hypothesis.

Identification of further Bronze Age mummies

The use of measurements of bacterial bioerosion to interpret post-mortem treatment of a body is hampered by problems of equifinality.

- Bones from anoxic or waterlogged environments often display patterns of arrested bacterial bioerosion similar to those from mummified remains (Janaway 1996; Turner & Wiltshire 1999; Turner-Walker & Jans 2008; Hollund *et al.* 2012); microscopic analysis cannot therefore be used to infer previous mummification within skeletons recovered from these contexts.
- Neonatal bones may naturally remain free from bacterial bioerosion after death, as the mammalian gut microbiome only develops in the days after birth (Jans *et al.* 2004; White & Booth 2014).
- Excarnation promotes rapid exogenous skeletonisation and disarticulation by carnivorous insects and limits the impact of soft-tissue putrefaction on the skeleton (Rodriguez & Bass 1983; Bell *et al.* 1996; Fernández-Jalvo *et al.* 2010; Simmons *et al.* 2010; White & Booth 2014).
- Dismemberment, defleshing and other processes that separate the bone from the gut bacteria would also produce disarticulated bones that display limited degrees of bacterial attack (Jans *et al.* 2004; Nielsen-Marsh *et al.* 2007).

Given the rapidity of skeletal disarticulation that accompanies bodily decomposition, the most obvious way in which an articulated skeleton can survive archaeologically is through immediate burial of the corpse (Duday 2006). Burial protects the body from skeletonizing insects, and bones from buried bodies typically exhibit advanced bioerosion resulting from extensive putrefaction of soft tissues, in contrast to reduced or absent bioerosion resulting from mummification (Rodriguez & Bass 1985; Rodriguez 1997).

A microscopic study of archaeological human long-bone thin sections (97% femora) representing 301 individuals retrieved from 25 European (mostly British) sites found that bacterial bioerosion relates to funerary treatment in predictable ways based on models of bodily decomposition (Booth 2014). Most samples of bone retrieved from historic-period contexts (Roman and later), where there is good evidence that these individuals were buried soon after death, produced the lowest OHI score of 0 (typified in Figure 1) and almost all scored less than 2. Less than 3% demonstrated the high OHI scores of 4 or 5 assigned to the Cladh Hallan skeletons and the mummified specimens. These findings suggest that skeletons of mummified bodies are the only ancient articulated remains that either consistently remain free from bacterial bioerosion or demonstrate only limited levels of bacterial attack. Microscopic examination of bioerosion in articulated skeletons thus provides a plausible method for identifying past mummification.

The patterns of bacterial bioerosion observed amongst Bronze Age articulated skeletons, with the addition of a further 6 individuals from Canada Farm, Dorset, were remarkably distinctive compared with the results from the historical, Neolithic and Iron Age assemblages (Figure 4a). Just over half of the Bronze Age samples (20 out of 36) produced low OHI scores consistent with immediate burial, but the remainder produced high scores of 4 or 5, indicating excellent bone preservation. Most of these high-scoring samples are free from bacterial bioerosion. Two of these were recovered from waterlogged sediments at Bradley Fen, Cambridgeshire (Gibson & Knight 2006) and Langwell Cist, Strath Oykel (Lelong 2010; 2012). Additionally, some of the other high-scoring Bronze Age human remains were recovered in various stages of skeletal disarticulation (Bell *et al.* 1996; Fernández-Jalvo *et al.* 2010; Simmons *et al.* 2010).

However, the exclusion of waterlogged and disarticulated bone samples does not affect the overall distinctive distribution of Bronze Age OHI scores (Figure 4b & c). The Bronze Age sample set from aerobic environments is distributed quite evenly between articulated (n=18) and disarticulated (n=16) skeletons. The regular occurrence of histologically well-preserved articulated human bone samples is exclusive to the Bronze Age sample. Only 3 of the 35 Neolithic samples originate from articulated skeletons. All articulated Neolithic bone samples are extensively bioeroded, but the possibility that a proportion of Neolithic articulated skeletons will demonstrate high levels of histological preservation cannot be dismissed entirely. The distribution of variably articulated skeletons amongst the Iron Age sample set was more balanced (9 articulated, 13 disarticulated).

Instances of well-preserved Bronze Age bone were identified from remains at several different sites, removing the possibility that these results are attributable to the disproportionate influence of one large but anomalous sample set. It is highly unlikely that sampling of a small number of Bronze Age individuals from a varied group of sites would have repeatedly captured anomalous specimens. Most Bronze Age sites that have yielded histologically well-preserved bones also provide examples of extensively bioeroded remains. In all cases, these contrasting samples originate from skeletons found only a few metres apart, within similar sediments. These results suggest that histological bone preservation has not been dictated by either specific environmental conditions or exogenous soil bacteria (Fernández-Jalvo *et al.* 2010; Turner-Walker 2012). The simplest explanation for the unconventional patterns of putrefactive bioerosion observed amongst samples of articulated Bronze Age skeletons is that a substantial proportion of these bodies were previously mummified.

All of the histologically well-preserved disarticulated Bronze Age bones were free from bacterial bioerosion. Sub-aerial exposure could be responsible for this result, although bones from exposed carcasses usually demonstrate some bacterial bioerosion; skeletonization in temperate environments is rarely quick enough to prevent the bones from experiencing soft-tissue putrefaction altogether (Bell *et al.* 1996; Fernández-Jalvo *et al.* 2010; Simmons *et al.* 2010; Hollund *et al.* 2012; White & Booth 2014). Immaculate histological bone preservation is more consistent with mummification than with sub-aerial exposure (Weinstein *et al.* 1981; Thompson & Cowen 1984; Stout 1986; Brothwell & Bourke 1995; Hess *et al.* 1998). When it is considered that the Cladh Hallan bodies were constructed out of the partially disarticulated elements of several individuals (Parker Pearson *et al.* 2005; 2007; 2013; Hanna *et al.* 2012), the most parsimonious interpretation of all of the histologically well-preserved Bronze Age bone samples is that they represent parts of or whole previously mummified individuals.

Archaeological bones from intermittently waterlogged environments demonstrate variably elevated levels of histological preservation, most likely corresponding with the varying degree of bodily decomposition that took place before the grave was inundated (Turner-Walker & Jans 2008; Hollund *et al.* 2012). The two waterlogged articulated Bronze Age skeletons from Bradley Fen and Langwell Cist were both free from bioerosion. Waterlogged environments more often influence the extent rather than the actual appearance of putrefactive bone bioerosion; therefore the absence of bacterial bioerosion from these samples is unusual (Booth 2014). It is possible that these two waterlogged Bronze Age skeletons are those of previously mummified individuals, but the variable effects of waterlogging on bacterial bioerosion mean that this interpretation must remain uncertain (Nielsen-Marsh & Hedges 2000; Turner-Walker & Jans 2007; Hollund *et al.* 2012).

Distribution of Bronze Age mummified human remains in Britain

The distribution of Bronze Age human skeletal remains demonstrating diagenetic signatures consistent with mummification extends across large areas of Britain (Figure 5; Table 2), regardless of whether disarticulated and waterlogged remains are included, suggesting that mummification was practised throughout Britain during the Bronze Age. These sites are dated to the Early, Middle and Late Bronze Age (*c*.2200–750 BC), indicating furthermore that mummification was a long-lived mortuary practice. These results raise the question – yet to be addressed – of whether similar funerary treatments were practised more widely among European Bronze Age societies.

Methods of Bronze Age mummification

Arrested patterns of bacterial attack were observed within individuals from Neat's Court, Kent (Morley 2010), and Bradley Fen (Figure 6; Gibson & Knight 2006), although mummification techniques may have differed between the two sites. The Neat's Court skeletons demonstrate macroscopic discolouration and fissuring consistent with low-level heat treatment (Figure 7; Deter & Barrett 2009), suggesting that these bodies may have been mummified by desiccation through smoking. In contrast, the Bradley Fen skeletons display no post-mortem alterations that are indicative of a particular method of mummification; however, their provenance close to substantial wetlands raises the possibility that they were preserved through initial deposition within watery anoxic environments. Bone samples from Windmill Fields, Teeside (Annis *et al*. 1997), Cnip Headland, Western Isles (Lelong 2011), and Canada Farm, Dorset (Green 2012; Bailey *et al*. 2013) were free from bacterial bioerosion, which indicates that bodily putrefaction was curtailed at an early post-mortem stage, and that their treatment may have involved evisceration (Figure 8).

The evidence for variability in methods of mummification is consistent with suggestions that Bronze Age communities made innovative use of available local resources to preserve their dead (Parker Pearson *et al.* 2005). Techniques that produced a partial or ephemeral mummy might have been deliberately utilized by British Bronze Age communities to enable fragmentation, circulation and recombination of bodies and anatomical parts. Consistent production of such relatively short-lived mummies might partly explain why preserved soft tissue of Bronze Age individuals has not usually survived archaeologically (with the exception of some bog bodies) though, in any case, Britain's temperate climate is generally poorly suited for long-term soft tissue preservation above or below ground.

The Cladh Hallan bodies had been manipulated into tightly flexed positions (leg flexion at the hip was above 45°), suggesting that they had been wrapped (Parker Pearson et al. 2005). Body position was highly variable amongst the Bronze Age mummified skeletons identified here and there is no significant association between posture and OHI score (n=29, Kruskal-Wallis X^2=3.752*,* p=0.305). There is no regional variation in posture amongst the mummified specimens and positions often varied considerably across single sites (Table 2). Evidence for tight wrapping of bodies in the Bronze Age does not equate to mummification, although prior mummification may provide an explanation for articulated skeletons that appear to have been manipulated beyond what might be possible on a fresh corpse (Parker Pearson *et al*. 2005).

Conclusion

Microscopic analysis of diagenesis in a dataset of 307 samples of human bone recovered from 26 archaeological sites in Europe reveals that 16 of those 36 British human remains dating to the Bronze Age (*c*.2200–750 BC) demonstrate an unusual pattern of arrested bacterial bioerosion. These same patterns of histological preservation have been observed regularly within bone samples from mummified individuals. The Bronze Age assemblage includes samples of skeletons retrieved from the Cladh Hallan settlement where there is a suite of evidence that at least two (composite) bodies had formerly been mummified (Parker Pearson *et al.* 2005; 2007; 2013).

The simplest explanation for the persistence of these diagenetic signatures is that Bronze Age populations throughout Britain practised mummification on a proportion of their dead. The numbers of disarticulated bone samples that display the diagenetic signature of prior mummification and the occasional evidence for deliberate reconstruction of anatomical parts suggest that a significant proportion of buried Bronze Age mummies may be composites. The common appearance of diagenetic signatures of mummification on Bronze Age bone samples might lead us to infer that this practice was introduced as one aspect of the cultural changes associated with the appearance of metalworking and other Bronze Age innovations in, for example, ceramic or textile manufacture.

Perhaps more plausible is the likely growing role of deceased ancestors in the legitimation of rights over land and property. Increasing concerns with the genealogical significance of individual ancestors are evident in the round-barrow cemeteries of the earlier Bronze Age (*c*.2200-1500 BC; *e.g*. Garwood 2007). The second millennium BC in Britain was associated with increasing pressures on land use and intensification of agriculture (Field 2008: 71-83), especially from 1600-1500 BC onwards, as evident in the laying out of co-axial field systems (*e.g*. Yates 2007).

Whatever the motives were for adopting practices of post-mortem preservation, these results confirm the value of microscopic examination of bone microstructure. Indeed, it may be the only consistent method for identifying formerly mummified skeletons in the archaeological record. Further research is required to confirm the extent and nature of these practices in later prehistoric Britain, and whether they extended into continental Europe. One line of inquiry could involve investigating skeletons from Bronze Age sites which demonstrate anomalous early radiocarbon dates, although the success of this approach would depend upon the precision of dating methods and the interval between death and burial.

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Figures

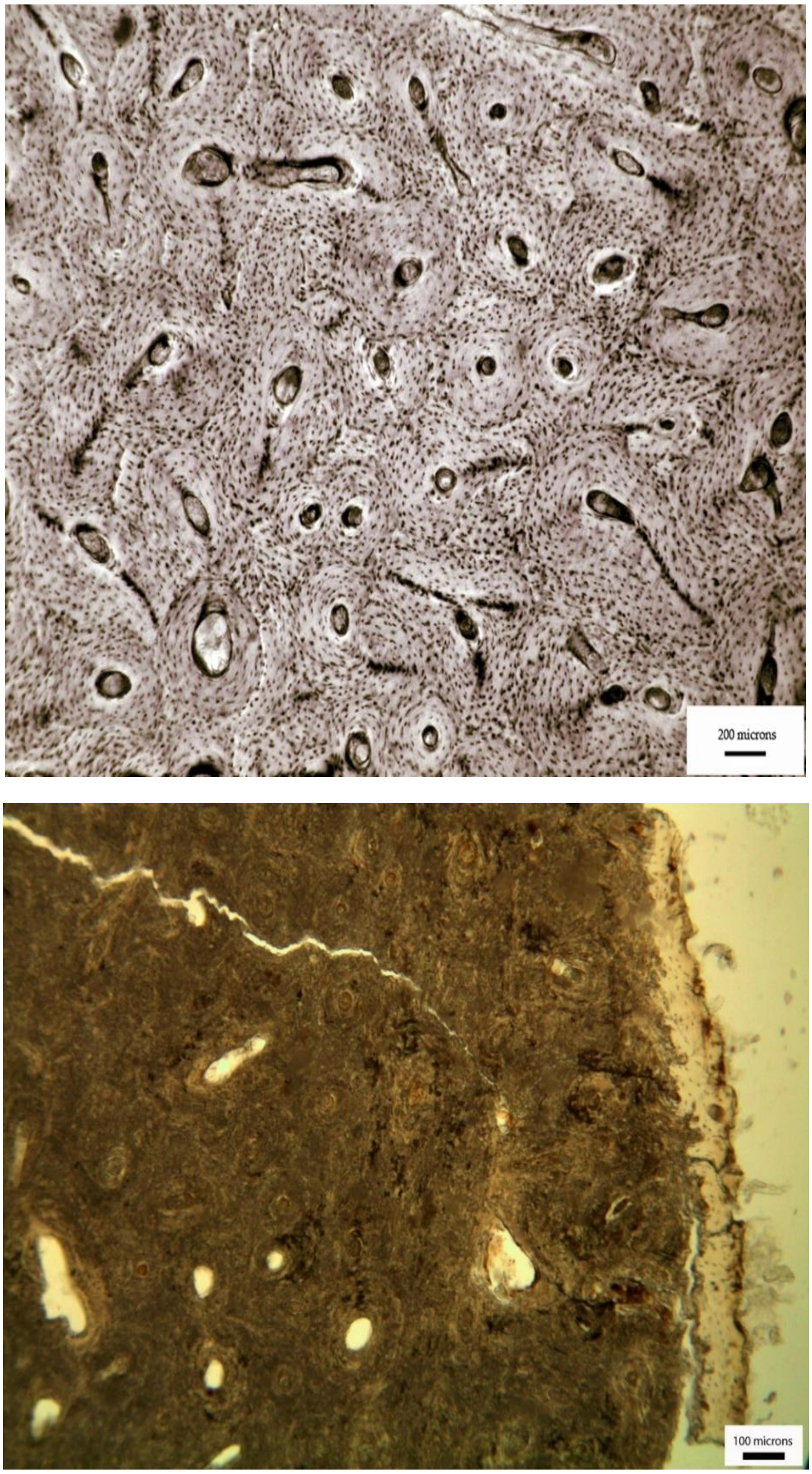

Figure 1: Transmitted light micrograph of a human fresh bone transverse femoral thin section (top) demonstrating perfect microstructural preservation and a typical archaeological femoral section (bottom) where the internal microstructure has been extensively altered by bacteria.

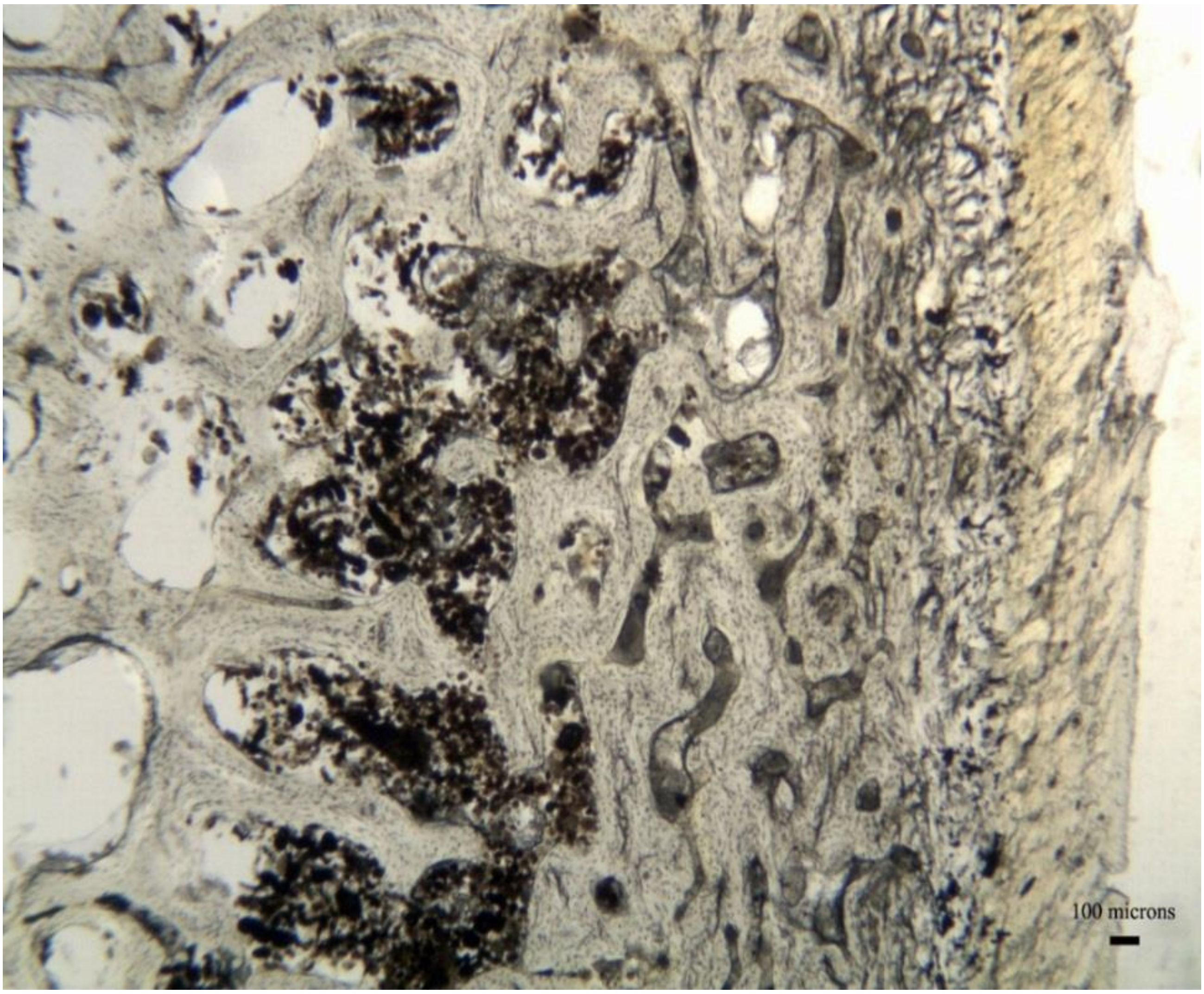

Figure 2: Micrograph of the patella thin section from a Yemeni mummy demonstrating immaculate histological preservation (soft tissue can be observed adhering to the periosteal surface to the right of the image).

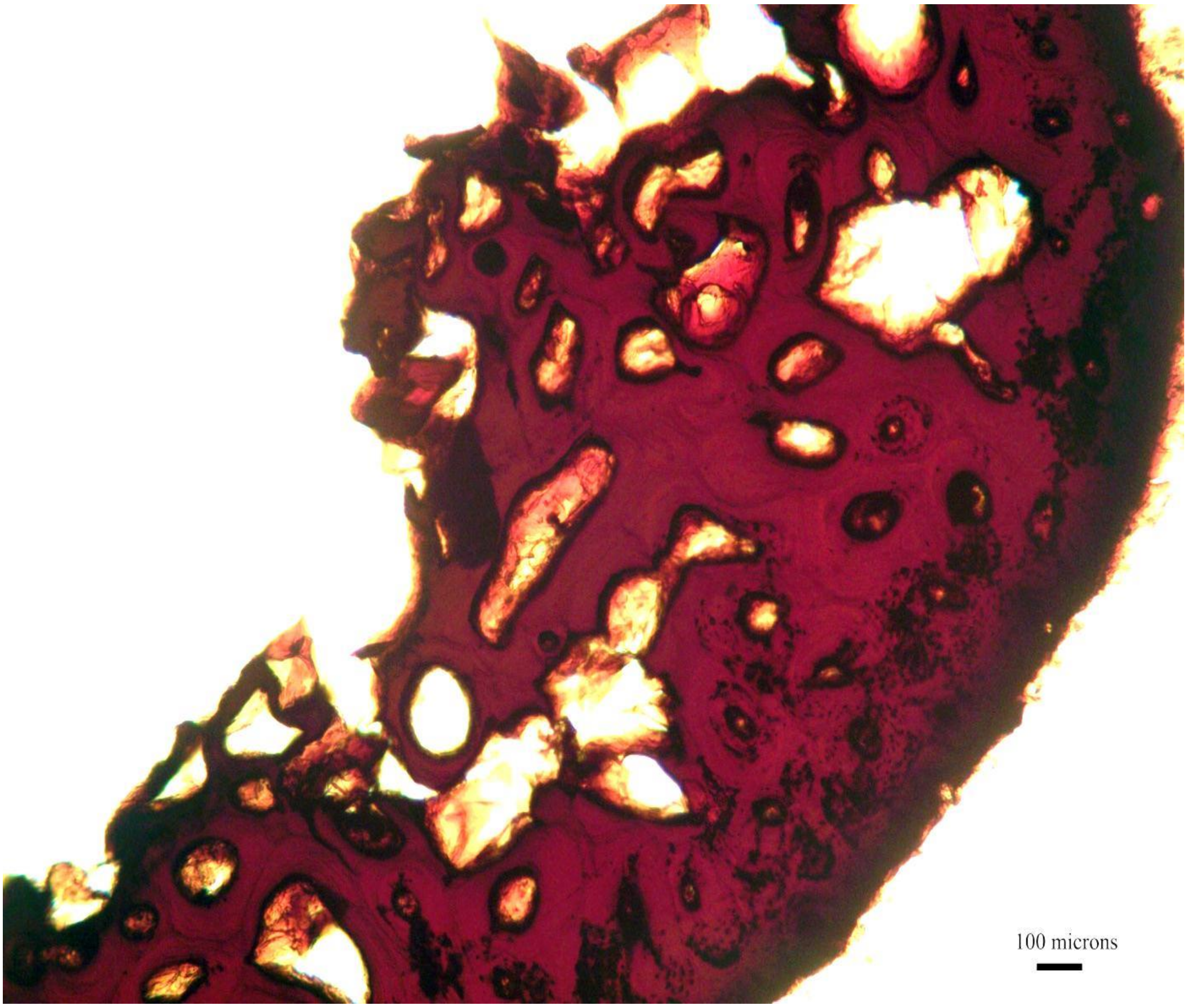

Figure 3: Micrograph of the tibial thin section from the Derrycashel individual. The tannins within the bog environment have stained the bone red. The microstructure is well-preserved but limited accumulations of bacterial tunnelling (black areas) can be observed towards the periosteal surface.

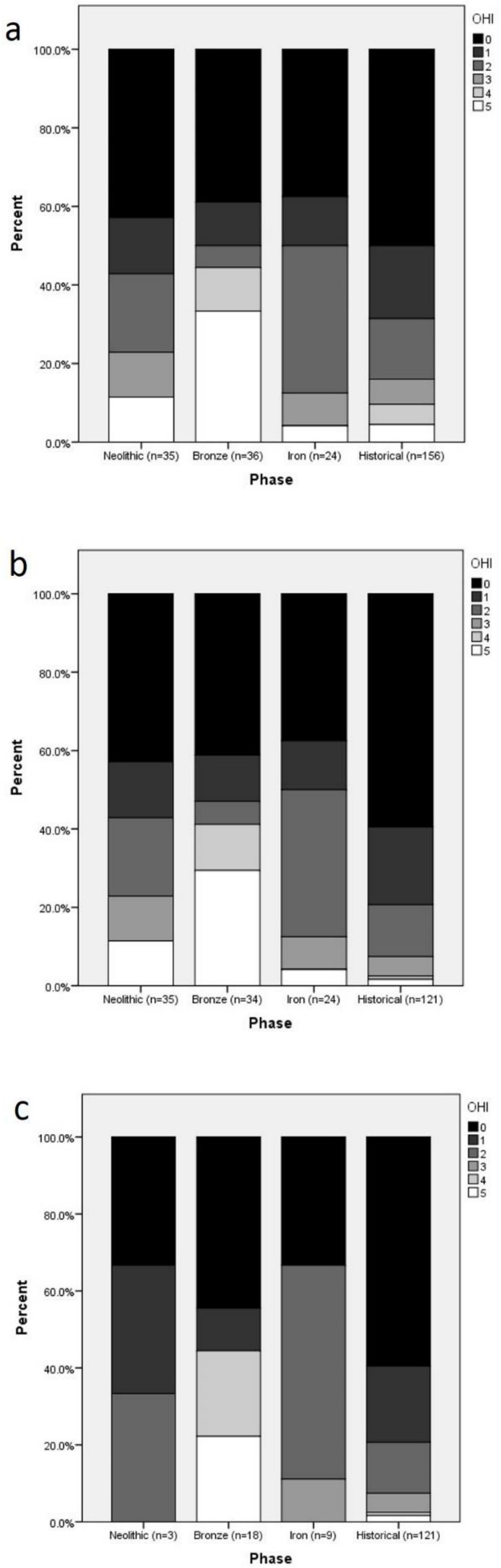

Figure 4: Distribution of OHI scores amongst a) post-neonatal bones b) post-neonatal bones from aerobic environments c) articulated post-neonatal bones from aerobic environments, separated by phase. High proportions of Bronze Age samples retain high OHI scores in each case.

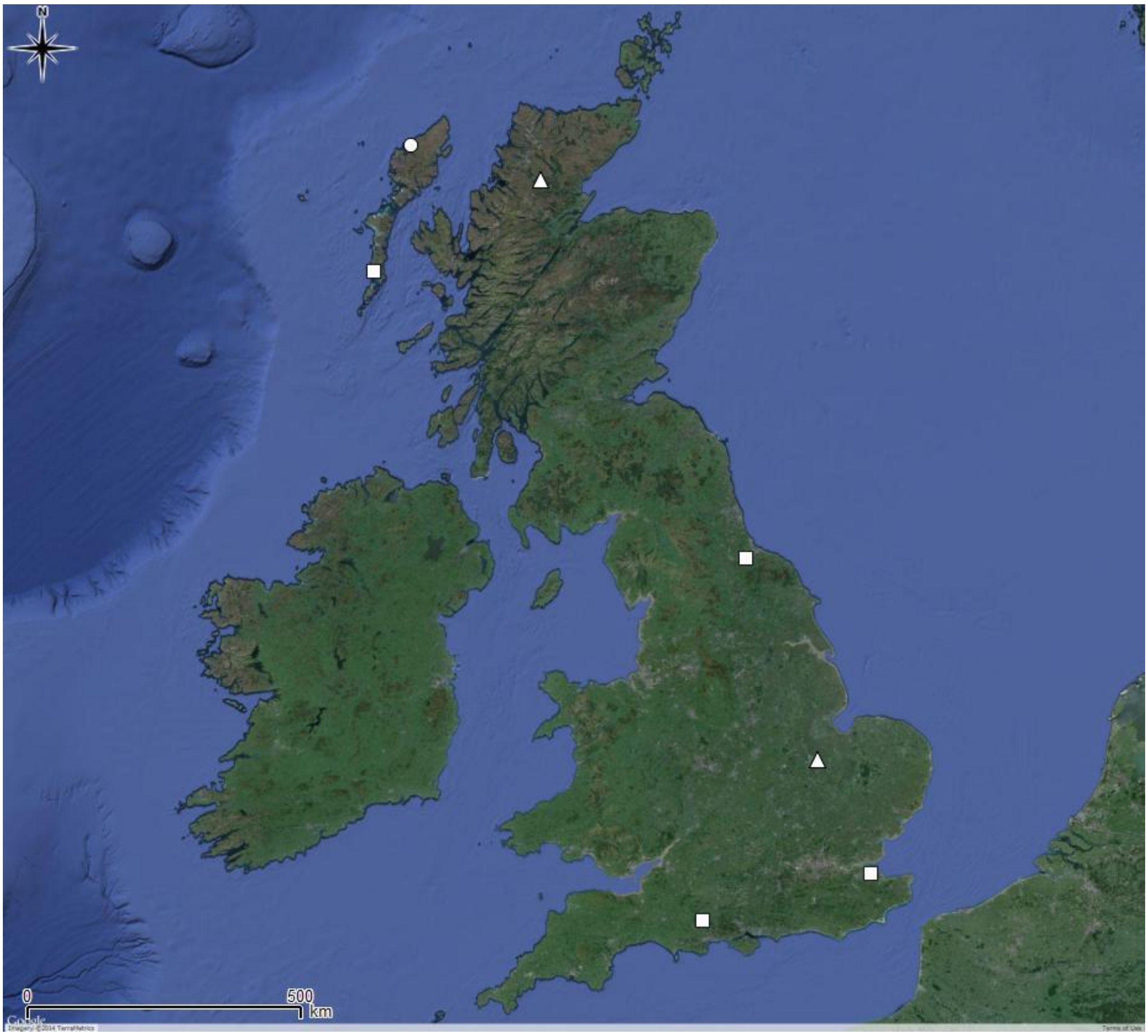

Figure 5: Distribution of Bronze Age sites that included human remains which demonstrated diagenetic signatures consistent with mummification: square = site with articulated 'mummified' skeleton(s); circle = site with only disarticulated or partially articulated 'mummified' skeleton(s); triangle = site includes a 'mummified' skeleton from a waterlogged context.

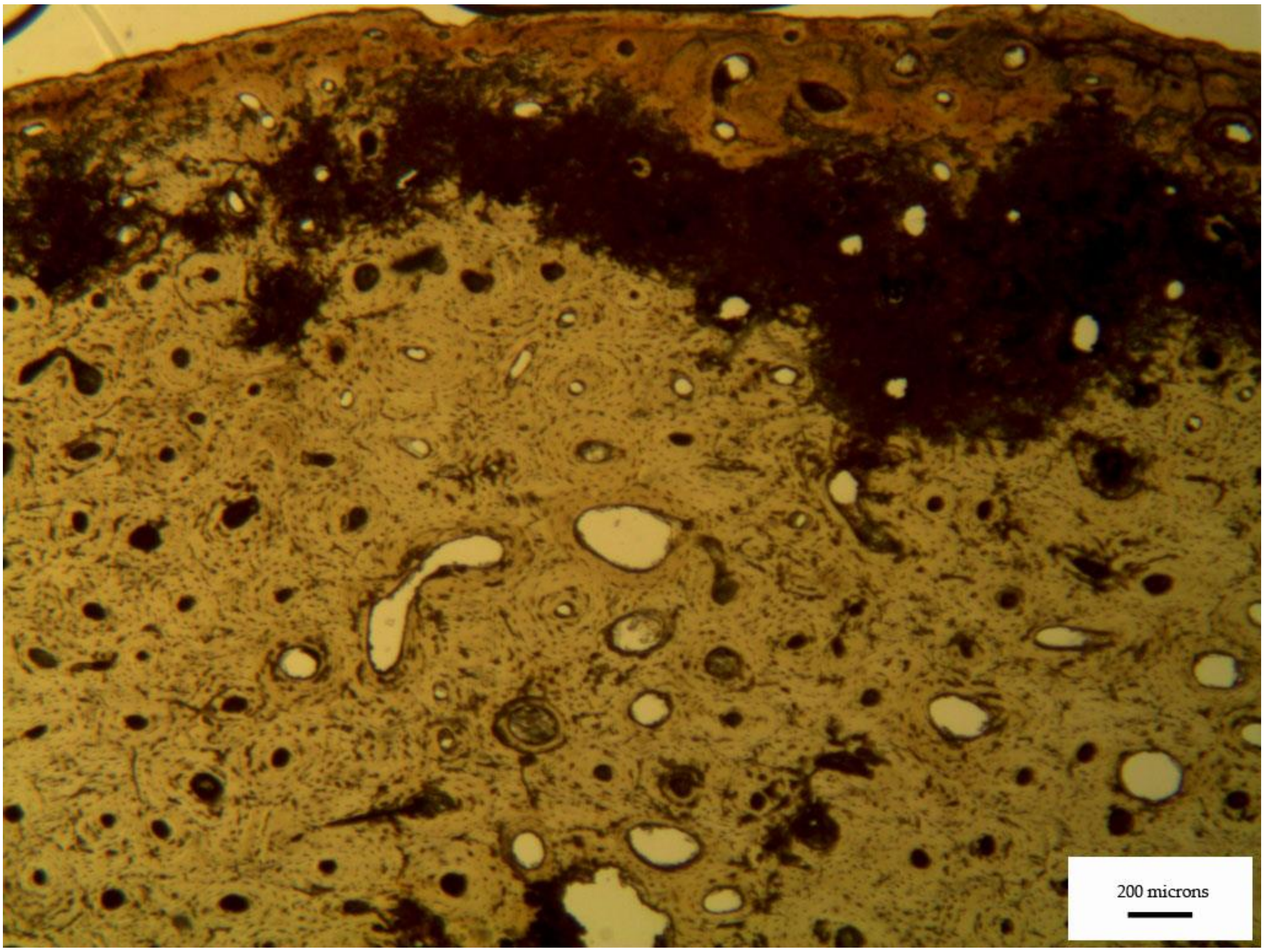

Figure 6: Micrograph of a transverse femoral thin section from Bradley Fen SK 853 – an intense band of bacterial bioerosion can be observed a few hundred microns below the periosteal surface, identical to that observed within the Cladh Hallan SK 2638, suggesting that the bone was exposed to limited bodily putrefaction.

Figure 7: SK 2614 from the Neat's Court round barrow on the Isle of Sheppey, Kent which demonstrated an arrested pattern of bacterial attack consistent with mummification. Discolouration of the cranium, teeth and articular ends of long bones suggest that the individual was exposed to low-level burning consistent with smoking. Photograph courtesy of Geoff Morley and Paul Wilkinson.

Figure 8: The primary burial (F1) from the Canada Farm ring ditch. The bone microstructure of this skeleton was perfectly preserved, suggesting that putrefaction was arrested at a very early post-mortem stage, possibly by evisceration. Photograph courtesy of Martin Green

Specimen	State	Date	Publication	Mummification Method	Bone Histology
Peruvian mummy	Skeleton	AD 400-1600	Weinstein *et al.* 1981	Desiccated by wrapping and deep burial in dry, coastal sand.	Perfect microstructure.
Ötzi the Tyrolean 'ice man'	Mummified body	3370-3100 BC	Hess *et al.* 1998	Desiccated by freeze-drying.	Perfect microstructure. Species of gut bacteria identified under the periosteum.
Two Utqiagvik barrow mummies	Mummified body	AD 1475	Thompson & Cowen 1984	Desiccated by freeze-drying.	Perfect microstructure.
Francisco Pizarro	Mummified body	AD 1541	Stout 1986	Application of lime (CaO).	Perfect microstructure.
Lindow II & Lindow I/II	Mummified bodies	2 BC-AD 119	Brothwell & Bourke 1995	Deposition within a sphagnum peat bog.	Well-preserved, but with 'globular pseudopathological points of collagen loss'.
Worsley Man	Partially mummified head	AD 100	Garland 1995	Deposition within a sphagnum peat bog.	Perfect microstructure.
Zweeloo Woman	Mummified Body	AD 78-233	Bianucci *et al.* 2012	Deposition within a sphagnum peat bog.	Perfect microstructure.
Kwäday Dän Ts'inchi	Mummified Body	AD 1670-1850	Monsalve *et al.* 2008	Frozen in a glacier.	OHI=2-3, although no bioerosion observed.

Table 1: Catalogue of ancient human mummies whose bones have been subject to histomorphological analysis.

Site	Location	Type	Phase	Site Details	Specimen	Articulation	Angle of Flexion at Hip	Radiocarbon date (cal. B.C.)	Waterlogging	OHI
Canada Farm	Down Farm, Dorset, England	Ring Ditch	Beaker/Middle Bronze Age	Green 2012; Bailey *et al.* 2013	F8	Articulated	<90° >45°	-	No	0
					F3	Partially Articulated	<45°	1620-1390	No	2
					F6	Articulated	<90° >45°	-	No	0
					F1	**Articulated**	**<90° >45°**	**2620-2470 2470-2290**	**No**	**5**
					F5	Partially Articulated	<45°	-	No	0
					F4	Partially Articulated	<45°	1620-1390	No	0
Windmill Fields	Ingleby Barwick, Stockton-on-Tees, County Durham	Cemetery	Early Bronze Age	Annis *et al.* 1997	**Sk 2**	**Articulated**	**<90° >45°**	**2200-1970**	**No**	**5**
					Sk 3	**Disarticulated**	**-**	**2400-2040**	**No**	**5**
					Sk 5	Articulated	<45°	1740-1530	No	0
					Sk 6	Articulated	<45°	2030-1885	No	0
South Dumpton Down	Broadstairs, Kent	Round Barrow	Early-Middle Bronze Age	Perkins 1994; 1995	B. 6	Partially Articulated	>90°	-	No	1
					B.10	Disarticulated	-	-	No	1
					B. 5	Articulated	>90°	1951-1703	No	1
					B. 2	Partially Articulated	>90°	-	No	0
					B. 7	Partially Articulated	<45°	-	No	0
Langwell Farm Cist	Strath Oykell, Highlands of Scotland	Cist	Early Bronze Age	Lelong 2009; 2012	**Sk 1**	**Articulated**	**<90° >45°**	**2200-1960**	**Yes**	**5**
Cnip Headland	Isle of Lewis, Western Isles, Scotland	Cist Cemetery	Early-Middle Bronze Age	Knott 2010; Lelong 2011	**SF 19**	**Disarticulated**	**-**	**-**	**No**	**5**
					SF 20	**Disarticulated**	**-**	**-**	**No**	**5**
					SF 50	**Disarticulated**	**-**	**-**	**No**	**5**
					SF 54B	**Partially Articulated**	**-**	**1880-1630**	**No**	**5**
					Sk 1	**Partially Articulated**	**<45°**	**1880-1640**	**No**	**5**
					Sk 2	Partially Articulated	<45°	1750-1530	No	0
Neat's Court	Queensborough, Isle of Thanet, Kent, England.	Round Barrow	Middle Bronze Age	Deter & Barrett 2009; Morley 2010	Sk 2326	Disarticulated	-	-	No	0
					Sk 2545	Articulated	<45°	-	No	0
					Sk 2611	**Articulated**	**Extended**	**-**	**No**	**4**
					Sk 2614	**Articulated**	**>90°**	**-**	**No**	**5**
					Sk 2635	**Articulated**	**>90°**	**-**	**No**	**4**
					Sk 2666	Articulated	>90°	-	No	1

					Sk 2673	Articulated	<90° >45°	-	No	0
Bradley Fen	Whittlesey, Cambridgeshire, England.	Settlement	Late Bronze Age	Gibson & Knight 2006	**Sk. 853**	**Articulated**	**Extended**	**-**	**Yes**	**5**
					Sk. 573	**Articulated**	**<45°**	**-**	**No**	**4**
					Sk. 785	**Articulated**	**<90° >45°**	**-**	**No**	**4**
Cladh Hallan	South Uist, Outer Hebrides of Scotland	Settlement	Late Bronze Age	Parker Pearson 2005; 2007; 2013	**Sk. 2638**	**Articulated (composite)**	**<45°**	**1500-1260 1500-1210 1620-1410**	**No**	**4**
					'C'	Disarticulated	-	-	No	0
					Sk. 2613	**Articulated (composite)**	**<45°**	**1370-1050**	**No**	**5**
					Sk. 2792	Partially Articulated	<90° >45°	1440-1130	No	2
					Sk. 2727	Articulated	<45°	1190-840	No	0

Table 2: Catalogue of Bronze Age samples. Skeletons that demonstrated histological signatures of mummification are highlighted in bold.