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Celebrating Easter, Christmas and their associated alien fauna

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ABSTRACT

Easter and Christmas are the most important events in the Christian calendar. Despite their global reach and cultural significance, astonishingly little is known about the festivals' genesis. Equally obscure is our understanding of the animals that have come to be associated with these celebrations – notably the Christmas Turkey and the Easter 'Bunny' (brown hare and the European rabbit). Like Christianity, none of these animals are native to Britain and the timing and circumstances of their arrivals are poorly understood, often obfuscated by received wisdom. This paper firstly refines the bio-cultural histories of the species that, in contemporary Britain, form integral parts of Easter and Christmas festivities. Secondly, we celebrate the non-native species which have played such an important role in the creation of Britain's cultural heritage.

KEYWORDS

Easter; Christmas; rabbits; hares; turkeys; festivals

Introduction

Animals have been central to human celebrations throughout time and space (see Sykes [2014, 116–31]). In many cultures the importance of livestock goes beyond consumption, and the ritual sacrifice of livestock is used to mark special occasions as part of a *do ut des* ('I give so that you will give') relationship with the supranatural that focuses on the immaterial rather than the physical (Abbink 1993, 709, 2003, 348; Sykes 2014, 116–31; Durkheim 1995, 350–1). Other festivities do not require the death of the animal and may instead be linked to seasonal cycles of husbandry – e.g. breeding, branding or ear-clipping, birthing and milking – but these equally have a religious dimension (e.g. Landais [2001, 472]; Crate [2008]).

Anthropological studies (notably Helms [1993]) have demonstrated that communities often equate geographical distance with supranatural distance, perceiving things derived from remote realms to be powerful and often associated with gods, ancestors or cultural heroes. By example, within farming communities, hunting is frequently bound up with social and religious celebrations that are seen as particularly significant because the animal is obtained from a world beyond settlement boundaries (Helms 1993, 153–7). In this way, exotic animals have the potential to be viewed as similarly powerful. Indeed, research on ancient animal introductions has suggested that,

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almost without exception, the spread of exotic fauna can be linked to the introduction of new ideologies and cultural practices (Sykes 2014). For instance, it has been argued that the arrival of domestic cattle, sheep and pigs during the Neolithic was associated with a cosmological shift that brought new opportunities for social gatherings and feasting (Figure 1) (Thomas 2007; Viner et al. 2010). Similarly, the spread of horses appears to have been accompanied by an equine-divinity that also emerged in the Bronze Age and Iron Age (Creighton 1995, 2000, 22). The Graeco-Roman cults of Artemis and Diana were possibly translocated across Europe and into Roman Britain in tandem with the fallow deer (Miller et al. forthcoming) and the spread of the chicken was closely associated with the cult of Mithras and the god Mercury (King 2005; Crummy 2007; Feider 2017).

In this context, it is interesting to note that the animals associated with modern Christian celebrations of Christmas and Easter – namely the Christmas turkey (*Meleagris gallopavo*) and the Easter 'bunny', represented by both the brown hare (*Lepus europaeus*) and European rabbit (*Oryctolagus cuniculus*) – are, like Christianity itself, alien to Britain. It seems possible that it was their exotic status that led them to become symbols of these religious festivals, or even that their arrival may have contributed to the establishment and spread of beliefs still celebrated today. This possibility is difficult to test as the precise timing and circumstances of these animals' introductions are poorly understood (as are the detailed circumstances surrounding the Christianization of pagan festivals). This difficulty stems from two major challenges: the identification of distinct species and the dating of their remains. Lagomorph species, due to their similar anatomic features, are particularly difficult to differentiate in the historical, iconographic and zooarchaeological record (Callou 1997, 2003; Sykes and Curl 2010). Similarly, turkey remains are easily confused with other large galliformes, such as peafowl (*Pavo cristatus*) and guinea fowl (*Numida meleagris*). The dating

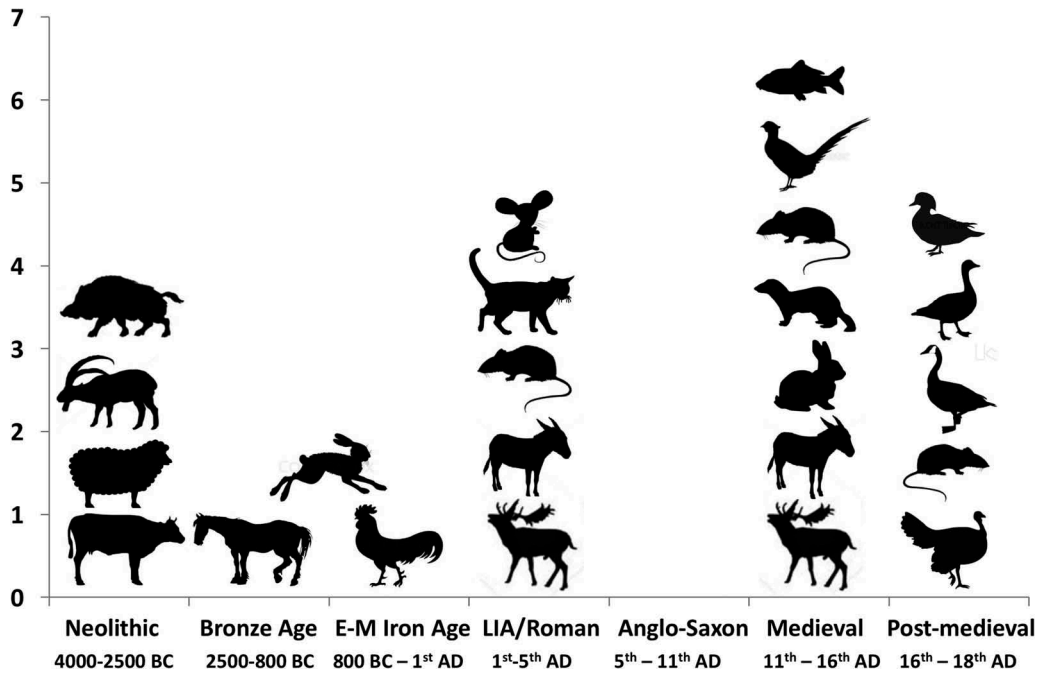


Figure 1. Approximate timings of animal introductions to Britain (Data from '' O'Connor and Sykes [2010] and '' Sykes [2014]).

of osteological remains is also challenging due to the fact that the bones of small animals often migrate through archaeological stratigraphies (Albarella 2016). This is especially true of the European rabbit since this species actively burrows into archaeological deposits (Sykes and Curl 2010). Not only is the dating of these species' arrival problematic, it is also unclear when and how they became associated with Christian festivals that pre-dated their arrival.

Despite the lack of knowledge regarding the origin of these animals, people today consume them in both flesh and chocolate form (the latter itself an exotic import) as part of their celebratory traditions. Given the centrality of turkeys, rabbits and hares to Britain's religious and secular festivals, we believe that we can, and should, do better to understand their histories. To this end, this paper presents preliminary data – drawn together from zooarchaeological, iconographic, historical and genetic evidence – that begins to refine the ancient biogeographies of these three species and, in so doing, celebrates the bio-cultural contributions made by these alien fauna to modern Christian celebrations.

Textual evidence for early Christmas and Easter

Some of the earliest historical evidence for the Easter and Christmas festivals in Britain is found in Bede's early eighth-century AD computistical treatise *On the Reckoning of Time*, which describes the pre-Christian calendrical system of the Anglo-Saxons (Bede 1997). While Bede's account provides some evidence for pre-Christian religious belief and celebrations, it also explains many of the names of months in terms of agricultural practices. Since the Anglo-Saxon months were lunar months, they do not map precisely onto modern calendars, but the month that would have tended to fall around October in our terms was called *Blotmonath*. This name most likely derives from the Old English word *blōt* meaning 'sacrifice', and Bede interprets it as the month during which cattle dedicated to the pagan gods were killed. The sacrifice was presumably as much a practical necessity as a religious duty, since the herd would need to be reduced in order to overwinter the remaining animals. Nevertheless, this suggests ways in which human interactions with animals may have been imbued with a religious dimension.

Both Christmas and Easter have rich animal associations and appear in Bede's discussion, although the term *Christmas* is not one that Bede uses (according to the OED, s.v. '*Christmas* n.', the term *Christmas* does not appear in English until the twelfth century). Instead Bede references a day 'when we celebrate the birth of the Lord' (translations from (Wallis 1999), which was 'sacred' to Christian Anglo-Saxons, and called *Modranicht* ('night of the mothers'; our translation) by their pagan forbearers ((cf. Shaw [2011; 61–2]; Nordberg [2006]). There is no other evidence for this pre-Christian festival in the British Isles, but it is tempting to see here evidence for an Anglo-Saxon cult of mother figures similar to the cult of matrons seen on the Continent (Shaw 2011, 61–2; Murphy forthcoming) . Bede also provides early evidence for the term *Yule*, which, in the form *Giuli*, is the name given to each of the two midwinter months, roughly corresponding to December and January in our terms. Whether the months were named from the festival or vice versa is hard to say, but in Old Norse texts there is evidence for a midwinter festival that could be termed *Yule* (Nordberg 2006).

Easter is similar to *Yule* in that Bede derives the name of the Christian festival from a name for an Anglo-Saxon month, which in turn derives from the name of a pagan goddess (Shaw 2011). Bede notes that a festival celebrating the goddess *Eostre* occurred in this month (approximately April) but does not suggest that this coincided with the date of the Christian festival of Easter in the way that the pagan *Modranicht* coincides with Christmas. Nor does it specify a link between the Anglo-Saxon goddess Eostre and rabbits or hares. Little is known about what sort of role *Eostre*

might have played in the minds of the pre-Christian population, with Shaw arguing she was probably a tutelary deity for specific socio-political groups rather than a goddess 'of' a specific portfolio such as fertility or hares (Shaw 2011).

The earliest reference to the Easter hare (later the Easter bunny) does not appear until 1682 in Georg Franck von Franckenau's *De Ovis Paschalibus* ('Concerning Easter Eggs'). von Franckenau describes a tradition of Easter egg hunts (albeit with hens' eggs rather than chocolate eggs) in Heidelberg and surrounding Protestant areas of Germany which is readily recognizable as the antecedent of present-day Easter egg hunts (Von Franckenau 1682). It was Jacob Grimm who then connected the Easter hare with the goddess, suggesting in his (1835) *Deutsche Mythologie*, that the hare was probably sacred to Ostara (a putative cognate of the Anglo-Saxon *Eostre* invented by Grimm). Since then, the association has been repeated and recited to the point that it is considered fact by some (Evans and Thomson 1974) but dismissed by others (Boyle 1973). Neither scenario has been considered from an archaeological perspective and there is scope to explore whether a deeper-time religious connection between *Eostre* and the brown hare existed, perhaps deriving from the animal's 'exotic' status. However, any archaeological investigation must first address the issues of identification and dating.

Brown hares in Britain and their religious associations

When the brown hare (*Lepus europaeus)* was introduced to Britain, it joined the native mountain hare (*Lepus timidus*) (Yalden 1999). In Britain today, the mountain hare is found only in the Scottish Highlands, though the extent of their distribution across Britain in antiquity is less clear (Yalden 1999; O'Connor and Sykes 2010). Our preliminary survey of the English zooarchaeological evidence indicates that hares increase in cultural contexts from the Middle Iron Age onwards (Figure 2). However, no standardized, comprehensive methods currently exist for differentiating the two species, and so most zooarchaeological analyses do not attempt to separate them. Thus, the contribution of the mountain hare to Figure 2 is currently unknown, further complicating the precise dating of the arrival of the brown hare.

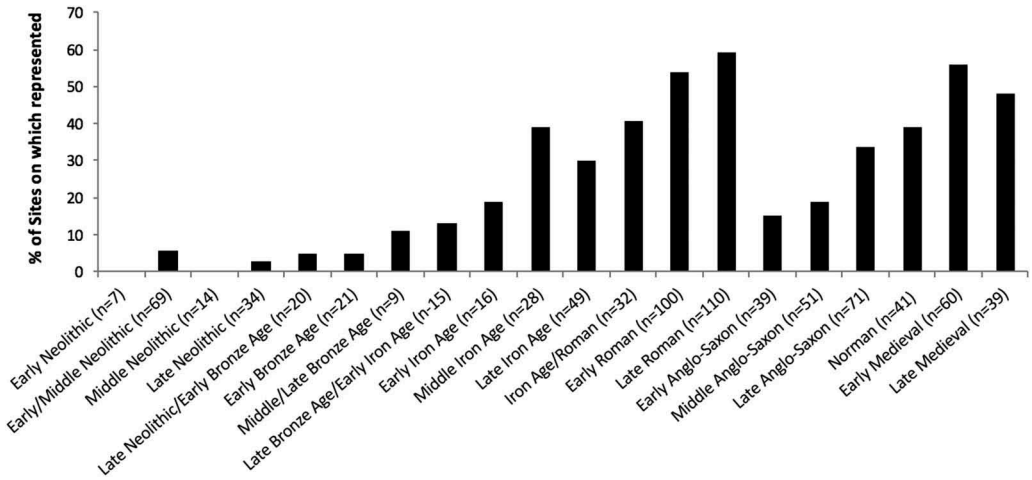


Figure 2. Diachronic shifts in the representation of hares in British zooarchaeological assemblages (Sykes 2007; Serjeantson 2011; Hambleton 2008; Poole 2011; Allen 2011).

Osteometric analysis is often undertaken to aid archaeological species identification (e.g. Jacobson [2003]; Rowley-Conwy [1998]; Sykes [2004]). For this reason, we have begun to collate linear measurements, following the standards of von den Driesch (1976) for modern brown and mountain hares from Britain (for full methods and dataset see Fowler et al. [forthcoming]). Figure 3 (a,b) depict these preliminary modern data, against which are plotted Iron Age and Roman hares from Fishbourne Roman Palace (Sussex) and Whitehall Roman villa (Northamptonshire). All the archaeological specimens are more consistent with the brown hare distribution, suggesting that they are likely *L. europaeus*. The Iron Age tibia from Fishbourne (Figure 3(a)) formed part of an

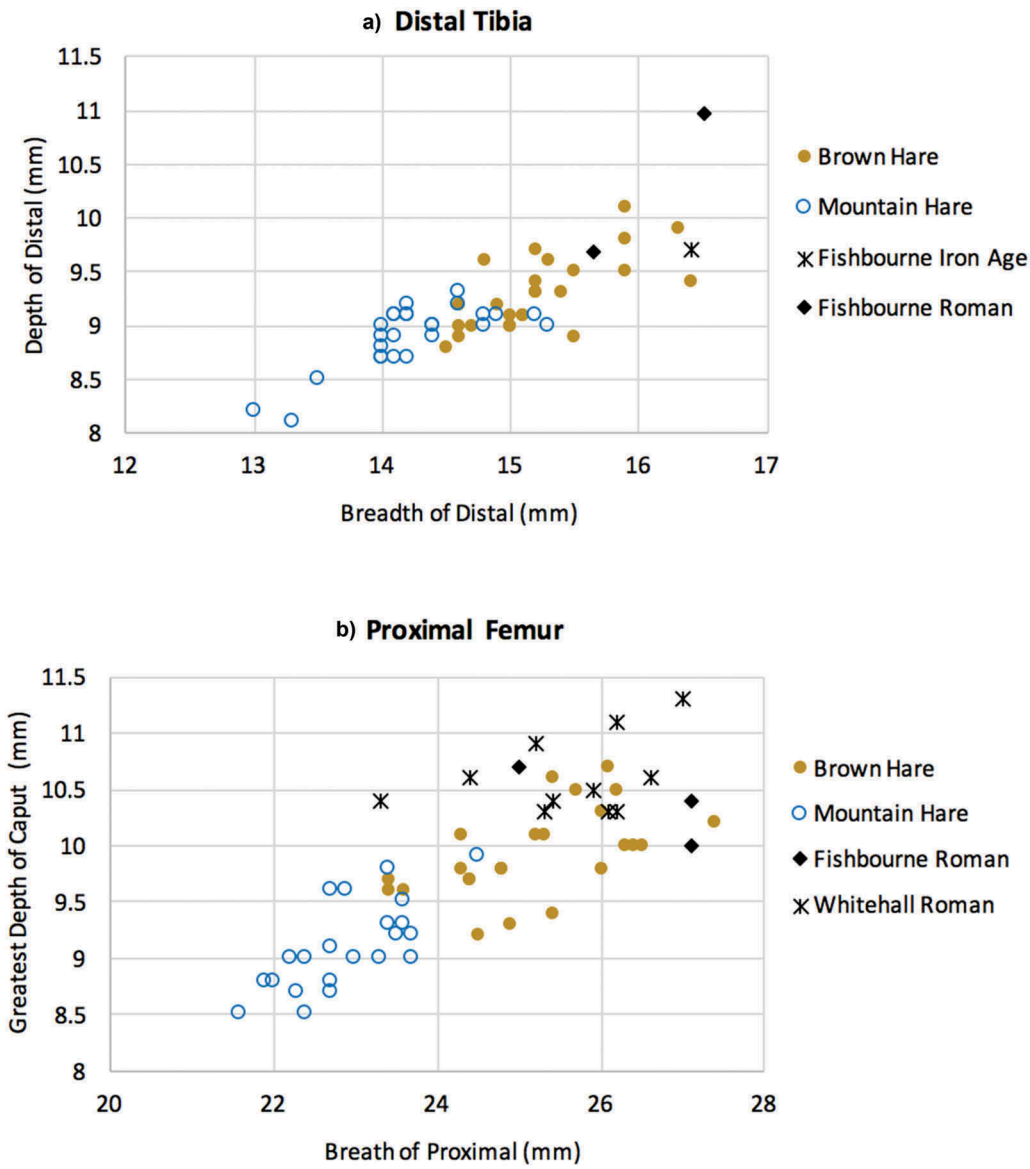


Figure 3. Measurements of archaeological hare a) tibia and b) femora, shown against the distribution of modern brown hare and mountain-hare bones.

articulated hare foot that was recovered from a pre-AD 43 ditch that was filled down its entire length with refuse from what has been described as a single feasting event (Manley and Rudkin 2005). Similarly, nearly all the hare bones from Whitehall Roman villa (a total of 123 specimens, with the measurable femora shown in Figure 3(b)) were recovered from a single context, also interpreted as a feasting deposit (Stephen Young pers. comm.).

Further metric analysis of these, and other, remains from Prehistoric sites across Britain is currently being undertaken to definitively determine these identifications (Fowler et al. [forth-forthcoming]). Particular focus will be given to a series of articulating hare skeletons that are reported to have been recovered from Early-Middle Iron Age sites across southern Britain (see Crummy [2013] for site details). This apparent tradition of hare burial is the kind of special treatment often afforded newly introduced exotic animals, before they become widely considered as components of human diet (e.g see Sykes [2014] and '' Morris [2008]). For instance, the earliest chickens in Britain were not eaten but buried as complete skeletons (Best et al. forthcoming). Intriguingly, the first historical reference to both chickens and hares in Britain comes from Caesar's *de bello Gallico* (5, 12) which mentions that the Iron Age population considered it unlawful to eat them but maintained them for other purposes, potentially sport or divination. The use of hares in divination is also suggested by third-century AD author Cassius Dio (LXII, 6.1) who cites that the Iron Age female warrior, Boudicca, released a live hare as an augury on the eve of a battle with the Roman Army. However, neither of these texts mention which species of hare was involved and both are problematic sources of evidence. Caesar was not writing from personal observation but rather passing on received knowledge, and Caesar's authorial agenda in the *de bello Gallico* has been the subject of much debate (Welch and Powell 2009). Similarly, it is likely that Cassius – a notable historian and bibliophile – was drawing on second or third-hand sources, possibly even Caesar's own work.

Despite the issue with the historical sources, when the evidence is combined with the preliminary metrical results and the zooarchaeological representation data (Figure 2 and see also reviews by Hambleton [2008] and Crummy [2013]) it seems likely that brown hares were well established in Britain by the Late Iron Age. This possibility is further supported by records from the Portable Antiquities Scheme, which show a dramatic increase in the frequency of hare-motif artefacts from the Late Iron Age to Late Roman period (Figure 4), a pattern reminiscent of the zooarchaeological representation data (Figure 2). However, similar to the difficulty of distinguishing between zooarchaeological remains, the specific hare species depicted remains uncertain, and they could even be rabbits which were also known in the Roman world (Sykes and Curl 2010). These lagomorph artefacts include a number of Iron Age and Roman plate-brooches, which Crummy (2007) has argued often reference specific deities, for example, cockerel-shaped brooches dedicated to Mercury. Although no explicit link between hares and a named deity can be proven from these data, Crummy (2013) has suggested that a hare-deity with origins in Celtic folk religion was worshipped in areas of the country where finds of these hare-form brooches cluster, chiefly in the south and east of England. It is in these same eastern regions that place-names containing an Old English element etymologically related to the name of the pagan goddess *Eostre* are found: Eastrington in Yorkshire; Eastrea in Cambridgeshire; and Eastry in Kent (Shaw 2011). This tempts the interpretation that a Celtic hare-goddess may have endured through the Roman period, eventually taking the form of the Anglo-Saxon goddess *Eostre*.

Shaw (2011) undertook extensive analysis of the evidence – linguistic, place/personal-name and epigraphic – for and against *Eostre* concluding that, in all probability, a cult of *Eostre* did exist in certain regions of Anglo-Saxon Britain. Shaw also suggested that a similar cult was present in the

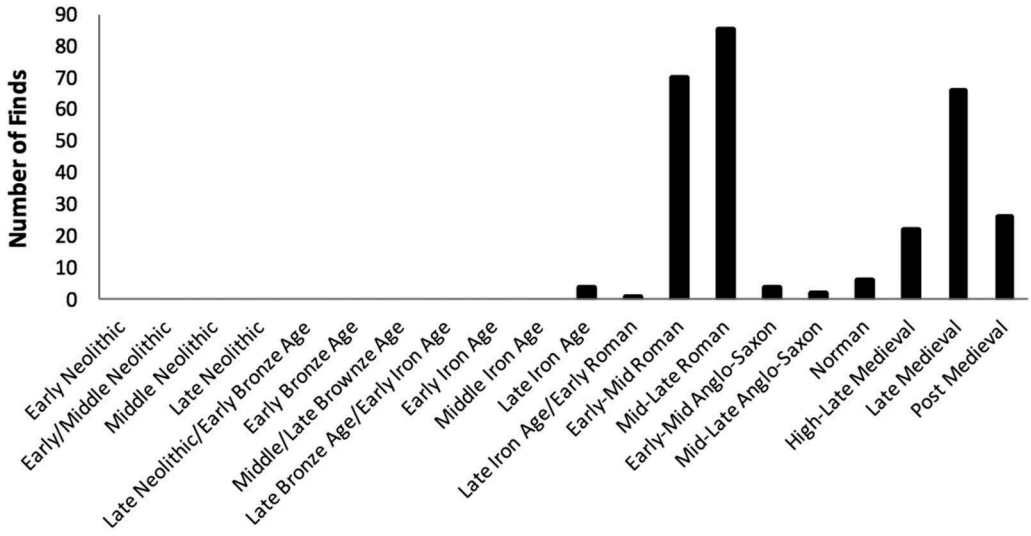


Figure 4. Number of reported hare-motif artefacts from Britain (Data from portable antiquities scheme).

Rhineland. This is based on the recovery of over 150 Romano-Germanic votive inscriptions made to a group of female deities named the *matronae Austriahenae*, which were found near Morken-Harff in north Germany and dated to between 150 and 250 AD. The first element of the name *Austriahenae* is cognate with *Eostre*, suggesting that the two share some parallels, and Derks (1998, 128) has argued that the *Austriahenae* developed from a pre-Roman ancestor cult.

Shaw (2011, 61) warned against interpreting this as evidence for a pan-Germanic cult or using it to suggest that the Anglo-Saxon *Eostre* developed from the Roman (or pre-Roman) *Austriahenae*. There is also no historical or iconographic evidence from Morken-Harff, or elsewhere, to suggest that the *Austriahenae* were associated with hares. That said, a Europe-wide study of modern brown-hare genetics (Stamatis, Suchentrunk, and Moutou 2009) found that British hares are closely related to populations in northern Germany, which Stamatis, Suchentrunk, and Moutou (2009) suggest is the source region for British hares. More specifically, in their investigation of hares from northern Britain, Stamatis, Suchentrunk, and Moutou (2009) identified one haplotype that elsewhere is found only in one north German population, close to the Danish border close to Morken-Harff (Figure 5). A comparable study of modern house mice DNA found that the two most dominant genetic types in Britain were also found in Germany, consistent with a long history of cultural contacts between these two regions (Searle et al. 2009).

While the genetic data suggest the origins of British brown hares may be in northern Germany, it is important to recognize that this suggestion is based entirely on modern DNA studies which may bear little relation to the ancient phylogeography. To address this, we have begun to analyse the spatiotemporal patterns of genetic signatures from ancient brown-hare remains in order to test the hypothesis that they were introduced to Britain from Germany. Contextualization through further linguistic and iconographic analyses will help to determine if an association between hares and pre-Roman goddess can be made. It may be that the connection between hares and Easter developed much later, perhaps due to the use of hares in Byzantine baptismal imagery, e.g. the example from Butrint in Albania – (see Mitchell [2008]). In early Christianity, Easter was the usual time for baptisms, which may have resulted in the linkage of the two.

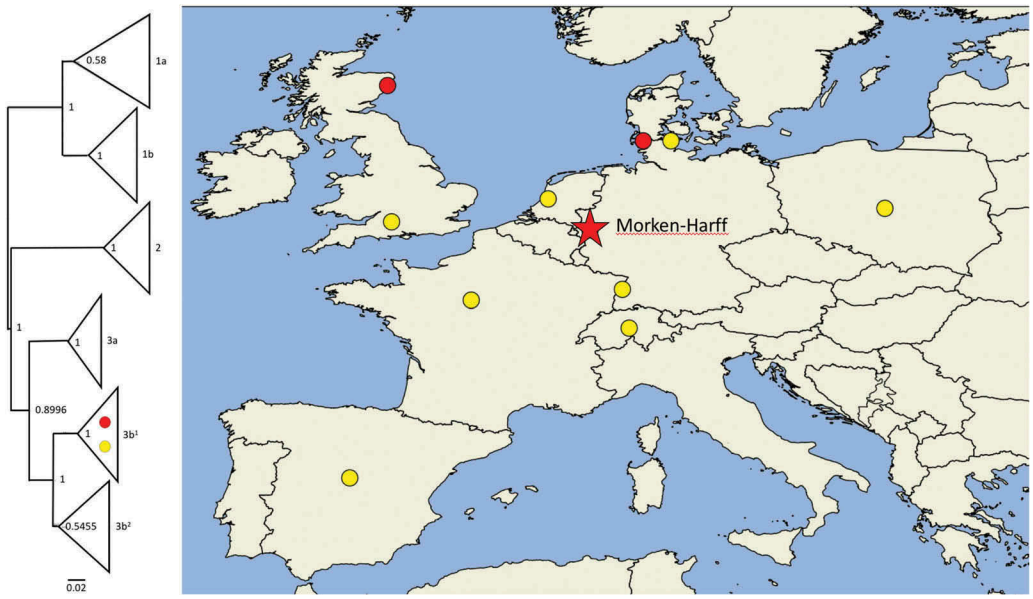


Figure 5. Genetic tree and map showing relationships and locations of >1000 brown hares, most of which possess signatures not found in Britain, where just two haplotypes from a single clade are found. Southern British hare signatures (yellow) are found across Europe, while northern British hare types (red) are only found in Northern Germany, suggesting a possible source. Morken-Harff, the centre of the matronae Austrahenae cult, is located close to where both British types are found on the continent.

Rabbits in Britain and their association with Easter

The origin of the association between rabbits and Easter is unclear, although rabbits have a widely reported connection with Lent. According to many historians, the domestication of rabbits was initiated in the late sixth century AD by French monks who were granted a special dispensation to eat *laurices* (uneviscerated foetal or newborn rabbits) during Lent (e.g. Nachtsheim [1949]; Zeuner [1963]; Clutton-Brock [1981]). Supposedly, since *laurices* come from the 'watery' environment of the womb they were classified as fish rather than meat (Sykes and Curl 2010). This gruesome delicacy had been known since Roman times, and was described by Pliny the Elder in the first century AD as a 'most delicate food' (*Naturalis Historia*, 8.55). The connection between *laurices* and Lent is attributed to the Gallo-Roman bishop and historian, St Gregory of Tours, who in AD 590 documented an isolated case in which a retainer of King Chilperic I ate *laurices* during Lent, shortly before his ignominious death (*Historia Francorum* 5.4). This incidental account was mistranslated by Nachtsheim (1949, 64), who described the practice as 'especially popular'. Nachtsheim's error was repeated and progressively embellished by successive scholars, ultimately leading to claims that Pope Gregory the Great (no relation to St Gregory of Tours) granted a papal edict permitting their consumption during Lent (Carneiro et al. 2011). In fact, there is no evidence rabbits were ever considered 'fish', or any dispensation to eat them during Lent, nor that the practice was ever commonplace; the association between rabbits and Lent appears to be a misinterpretation of twentieth-century academics (Irving-Pease et al. 2018).

Zooarchaeological and historical evidence suggest that rabbits arrived on mainland Britain in the late twelfth century AD (Sykes and Curl 2010). One of the most tightly dated references is in the *Close Rolls* for 1235, which records that Henry III gave a gift of 10 live rabbits from his park at Guildford (Veale 1957, 88).

Rather than being associated with Easter or Lent, historical texts suggest they were more commonly linked to Christmas. For instance, in 1240 Henry III ordered 500 rabbits from across his estates for his Christmas feast. Eleven years later, in 1251, he provided his Christmas dinner guests with 450 rabbits, along with hundreds of other exotic game animals including 290 pheasants and 120 peafowl (Rackham 1997, 119). Throughout the rest of the mediaeval period, there are numerous references in the *Close Rolls* and household accounts of rabbits being provided and received as gifts for Christmas feasts (Veale 1957; 88; Bailey 1988; Woolgar 2011). The remains of such feasts are found archaeologically at sites such as the royal residence of Woking Palace, where hundreds of rabbit head and foot bones (representing a minimum of 39 individuals) were recovered from a single fifteenth-century kitchen midden (Roberts et al. 2017). Similar deposits have been found on contemporary high-status sites, such as at the manor of Little Pickle in Bletchingley, Surrey, where large quantities of rabbit feet were found associated with the wing and foot bones of hundreds of wild birds (Bourdillon 1998, 143).

As an elite feast food, demand for rabbits increased and widened during the fourteenth and fifteenth centuries, reflected by the many commercial warrens that were established at this time (Williamson 2006). Populations flourished, facilitated by a period of warm weather between the 1370s and 1390s, enabling many warrens to sustain an annual cull in excess of 2000 individuals (Bailey 1988, 6). As rabbits became more numerous and escapees came to be viewed more as a pest than a luxury, their status declined. Rackham (1997, 48) shows how the price of rabbits, relative to daily wage, dropped from the thirteenth to nineteenth century. The aristocracy, however, continued to seek the exotic for their feast-day tables and, eventually, rabbits were replaced by other species, notably the turkey (Poole 2010; Fothergill 2014).

Turkeys in celebrations

How turkeys became established as the ultimate Christmas fare is unclear, although Thomas Tusser's book *Five Hundred Pointes of Good Husbandrie* indicates the association was in place by 1573. Tusser suggests that Christmas feasts should include 'Beefe, mutton, and porke, shred pies of the best, pig, veale, goose and capon, and turkey well dressed' (Tusser 1812, 57). It is interesting to note that this first reference to Christmas turkeys in England predates the use of turkeys in American Thanksgiving celebrations by over 150 years. The earliest specific references to turkeys at American Thanksgiving relates to the consumption of eight birds by the colony of Georgia in 1732, and in Savannah in 1733 (Smith 2006, 68). Both cases are associated with new arrivals from England, rather than existing American colonists, suggesting the possibility that including turkeys in celebratory meals was developed in England and only later exported back to the turkey's continent of origin.

The date of the turkey's first appearance in Europe is unknown, but written documents suggest a 1511–12 introduction to Spain and 1520 in Italy (Crawford 1992; Fothergill 2014). Their introduction to England is credited to William Strickland, who claimed to have bought six turkeys from Native American traders and sold them in Bristol in 1524 or 1526. Until recently, there were no archaeological finds to support a 1520s introduction, as the earliest closely dated physical remains were from a 1534–50 context at St Alban's Abbey (Hertfordshire) and almost all other finds have broad date ranges (Poole 2010; Fothergill 2014).

Fothergill (2012) suggests that when turkeys were initially introduced to Europe their status as exotic animals meant they were more likely to be used for display purposes rather than food. However, new analysis of faunal material from the 1981 Paul Street excavations in Exeter identified turkey remains consisting of two femora and an ulna that appear to be from the same individual (Figure 6). They were recovered from a context containing the remnants of what is likely a high-



Figure 6. Turkey remains from 1981 Paul Street excavations, Exeter. Two femora and an ulna from a deposit dated to 1520–1550.

status feast. This interpretation is supported by the presence of high-quality imported ceramics and glass which were tightly dated to 1520–1550 and are indicative of elite feasting activities. This timing overlaps with the proposed introduction date suggesting that this bird was likely amongst the first turkeys seen in Britain, and the fine cut marks across the surface of all three specimens suggest that this particular turkey was eaten, making it among the earliest recorded evidence for a turkey dinner in England.

Initially, the turkey's feast-day popularity in Europe may have been linked to their exotic status, but their growing association with Christmas and, in America, Thanksgiving, was likely facilitated by their natural breeding cycles. The poults (chicks) are born in the early summer, and reach adult size in the autumn and are ideal for slaughter in mid-winter (Fothergill 2012, 44; '' National Wild Turkey Federation). That sixteenth-century Christmas celebrations and eighteenth-century Thanksgiving celebrations might be inextricably linked to seasonal rhythms and agricultural cycles should come as no surprise, as this is precisely what Bede was describing in his *On the Reckoning of Time* almost a millennium earlier.

Conclusions

This preliminary investigation of British Christmas and Easter celebrations, and the 'alien' animals associated with them, has done little to establish definitively any of their origins.

Instead, perhaps the most striking point that has emerged is in relation to human behaviour, notably our tendency to accept and actively perpetuate received wisdom and traditions. If nothing else, this paper demonstrates that there is currently no concrete evidence or understanding pertaining to how turkeys and rabbits/hares came to be associated with these festivals, or why these associations still persist today both in Britain and beyond. Perhaps this is not surprising, as the very nature of the activities and symbols often associated with festivals is founded in the perpetuation of received knowledge and traditions passed through generations.

Alongside this, as evidenced by the debunked earlier association between rabbits and Lent, academics are not immune to these tendencies to accept, embellish and perpetuate ideas without sufficient interrogation of their sources. The associations between turkeys and Christmas, and hares and Easter, are both first documented in the seventeeth century, but have since accumulated additional 'facts' (e.g. Grimm's suggestion that the hare was sacred to the goddess Ostara) which make for neatly packaged stories that are easy to repeat. In the case of the rabbit, evidence for the greater historical time-depth of their association with humans has provided more opportunities for mistranslation and misrepresentation. This evidence, when unpicked, reveals that the often-cited link between Easter and rabbits is erroneous.

Though further knowledge of the biological and historic origins of these festivals and their associated animals is far removed from the modern celebrations of Easter and Christmas, understanding their origins is increasingly relevant. It is important precisely because the bio-cultural histories of introduced animals and their shifting associations with religious beliefs, rituals and festivals can contextualize and challenge modern cultural attitudes towards society, religious beliefs and the natural world. This paper has begun to show that while the correlations between these imported, exotic animals and imported or adopted festivals do exist, a more detailed examination of the data is necessary to draw definitive conclusions about the origins of these relationships.

While these discussions partially reveal the fallibility of our knowledge and the inadequacies of our critical processes, in fairness, understanding the entirety of any cultural phenomenon (such as Christmas or Easter) is beyond any single individual or discipline. Only by coming together to work across the Arts, Humanities and Natural Sciences are we likely to overcome the limits of our disciplinary bounds by cross-validating independent lines of evidence. We hope that this paper has not only outlined the promise of such an approach, but also demonstrated how critically entangled human culture is with its animals, and that this is a topic that deserves to be both researched and celebrated.

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