Life from death: multi-species fertility rituals within a Romano-British ritual shaft in Southern England

ELLEN GREEN

LIFE FROM DEATH: MULTI-SPECIES FERTILITY RITUALS WITHIN A ROMANO-BRITISH RITUAL SHAFT IN SOUTHERN ENGLAND

Summary. *Romano-British shaft deposits are an important part of the ritual make-up of the province. However, understanding the meaning of these features is often difficult due to the lack of textual sources. This paper discusses a first century AD shaft from Surrey, England, using a multi-proxy approach to investigate potential ritual significance. Its unique assemblage, containing one of the largest deposits of human and animal remains ever excavated from a single Romano-British feature along with the first recorded instance of Romano-British use of red ochre on bone (a dog baculum, or penis bone), allowed for a series of cosmological connections to fertility be identified.*

INTRODUCTION

Ritual shaft deposits are a fascinating part of the complex religious landscape in Roman Britain. Spanning the entire occupation, these features constitute deep pits and wells backfilled with a range of materials which are suggestive of votive or ritual deposition (Wait 1985, 51–5; Fulford 2001; Woodward and Woodward 2004). The majority of these features were excavated by antiquarians before the advent of modern recording practices, and it is often difficult to achieve a holistic analysis of the assemblages as a result. Antiquarians often did not make complete catalogues of the material, deeming bone, both human and animal, inconsequential. Furthermore the lack of detailed stratigraphical information hampers any attempts to understand the processes of deposition, which can further obscure attempts at fully understanding these features.

The interpretation of shaft deposits has also been further complicated by the tendency for modern excavators to use 'structured deposition' or 'ritual feature' as an interpretation in itself, without further interrogation of the material (Garrow 2012, 100; Chadwick 2015, 54). While both these phrases are generally used to mark deposits out as 'other' or as short-hand for 'no obvious functional explanation', they do little in terms of interpreting what role these features may have actually played within the context of Roman-Britain.

This article describes an assemblage recovered from a Romano-British quarry shaft from the Nescot site in Ewell, Surrey, excavated in 2015. The shaft contained one of the largest deposits

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of human and faunal remains ever excavated from a single feature from the period. Modern excavation techniques and recording processes have allowed for a thorough, integrated analysis of the Nescot shaft, combining artefactual, osteological, environmental and stratigraphical data. This study takes a multifaceted approach, exploring the characteristics of the human and faunal remains within the context of Romano-British religious belief and cosmologies.

ROMANO-BRITISH SHAFTS

Romano-British shaft and well deposits are found throughout Britain, with a notable concentration in Kent and Surrey (Wait 1985, 64). It is uncertain why this is, and more research is needed to properly understand the distribution of ritual shaft and well deposits. It may be due to the proximity of the continent in the south-east, as similar features have been identified in Iron Age and Roman France (Petit 1989; Lepetz and Bourgois 2018) and Germany (Sievers 2015). It is also possible however that the concentration is more representative of the increased development (and thus excavation) around London, particularly given the large number of these features which were identified during the expansion of the railroads in the nineteenth century or as a result of modern planning legislation. There is no archaeological consensus on their role, although they are commonly interpreted as ritual features. The fills differ between individual shafts; however, they generally contain a mixture of both human and faunal remains (particularly cattle, dogs and horses), pottery, and coins (Wait 1985, 78; Smith 2018a, 189). Originally argued to be a largely Iron Age phenomenon (Ross 1968; Wait 1985, 52–3; Fulford 2001), the majority of shafts actually date to within the Roman period, and there is very little clear evidence to show that they are a direct continuation of older rites (Webster 1997, 136–7).

While shaft and well deposits have been noted on a variety of sites, the most recent large scale analysis of the phenomenon was conducted several decades ago (Wait 1985). Such contexts provide a challenge archaeologically, both in identification (when does a pit become a shaft? Are dry shafts different to wells?), and in interpretation. The majority of modern work on ritual shafts comes from site reports which assess the features in isolation, usually offering little in the way of larger overall synthesis. The assemblages from these features are generally investigated by a series of different specialists, who provide differing, sometimes conflicting, interpretations, which can be difficult to reconcile into a unified whole. This problem has been noted before, particularly in the context of human and faunal remains (Outram *et al*. 2005; Maltby 2010), and disproportionately affects large, complex assemblages which do not fit neatly into a functional interpretation. While some integrated studies do exist (e.g. Cool and Richardson 2013), such publications are rare. This is probably because the majority of these shaft deposits were excavated before the advent of modern excavation techniques, and those that have been more recently excavated have been subject to funding constraints which often limit the extent of post-excavation analysis.

Shaft and well deposits have been linked to a variety of ritual concepts. Studies have tended to rely either on textual sources or single inclusions (such as the presence of corvid remains) in order to make these connections. Older works put forward the idea of shafts being mouths to the underworld based on medieval Irish texts (Ross 1968, 276; Green 1986, 104), based on the assumption that the myths and legends recorded in the Irish medieval period reflect older, 'Celtic' beliefs. This is problematic as the majority of shafts date to the post-conquest period as opposed to the Iron Age, and because it is unlikely that post-Christian Irish texts reflect the beliefs of people in England in the Roman period (Webster 1997, 140). Shafts and wells have, perhaps more

convincingly, been connected to the underworld because of their inherently chthonic nature, the common presence of dog and/or corvid remains, as well as their similarity to the votive *mundus* shafts which were used to communicate with the underworld in the Greco-Roman world (Webster 1997, 139; Woodward and Woodward 2004, 69; Smith 2006, 16; Black 2008, 2). The presence of canine remains has also led to shafts being linked with concepts of healing and fertility. Dogs are associated with several Roman and Romano-British gods of healing, fertility and abundance (Green 1998, 104; Woodward and Woodward 2004, 78; Smith 2006, 54; 2018a, 194; Grimm 2007, 60). Because of this, their presence has been treated as an indicator of meaning, often without any further analysis or consideration of the wider assemblage and context. This is problematic because, as mentioned above, dogs are also associated with several chthonic deities, ideas of guarding and guiding, as well as being common animals within the daily life of Roman Britain (Smith 2006).

THE NESCOT SHAFT

The Nescot College Former Animal Husbandry Centre in Ewell, Surrey, England was excavated in 2015 by Pre-Construct Archaeology in advance of development. The Romano-British phases of the site (Fig. 1) comprised a series of quarry pits dating from the late first

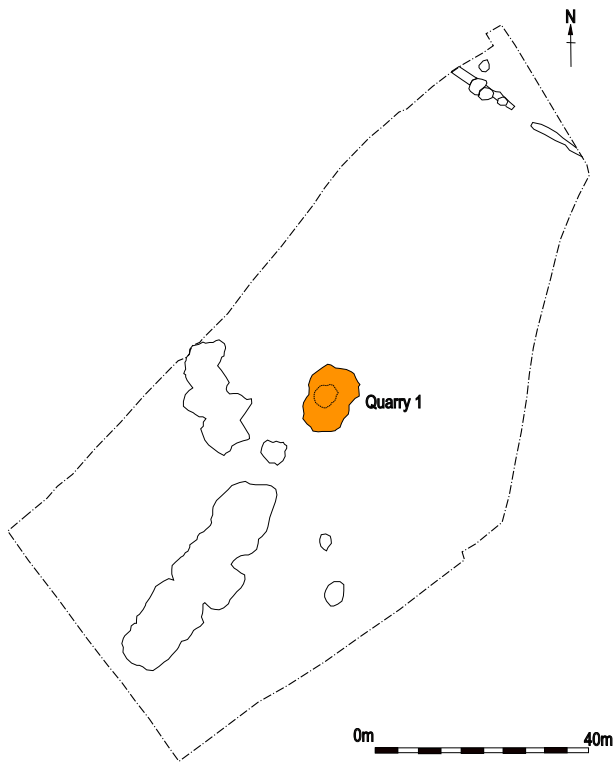

FIGURE 1
Plan of the Roman activity at the Nescot site (Haslam 2016).

century to the fifth centuries AD, and a single ditch dated AD 100–300 (Haslam 2016). The quarries were used for the extraction of chalk and flint on a large scale, beginning soon after the conquest, and backfilled at the end of the first century AD (Haslam and Haslam 2021, 142). The majority of these quarry pits contained material that would generally be categorized as 'structured deposits'.

No evidence of settlement was found in the area immediately surrounding the quarry at Nescot, however a Romano-British field system was discovered immediately to the south-west of the site, and the ditches on the north-eastern boundary were interpreted as the base of another field system (Haslam and Haslam 2021). Multiple small farmsteads have been identified from the late Iron Age and early Roman periods around Ewell (Abdy and Bierton 1997; Orton 1997; Cotton 2001) and the settlement has been connected to the wool industry due to the large proportion of sheep/goat remains, as well as frequent finds of artefacts connected with spinning, weaving and carding (Bird 2004b, 62). It is very likely that since the Nescot quarry was set back away from the roadside settlement, that it sat in a largely agrarian landscape, however the settlement boundaries of Ewell are poorly understood and more excavation would be needed to state this for certain.

One of the quarry pits at Nescot, Quarry 1, is especially significant in that it contained one of the largest assemblages of human and animal bone ever recovered from a single Romano-British feature. Quarry 1 was a flat based oval shaft, cut approximately 4 m deep into the chalk. Halfway down, the shaft narrowed significantly, creating a large platform. The shaft had three phases of use, all dated between the late first century AD and early second century AD (Fig. 2). Phases 1 and 2 probably represent episodes of ritual deposition, while the later phase 3 likely represents rubbish disposal (Haslam and Haslam 2021, 104). Notably, many of the pots within phases 1 and 2 were only represented by sherds from the base and lower half of the vessels, and appear to have been deliberately smashed prior to deposition (Haslam and Haslam 2021, 101).

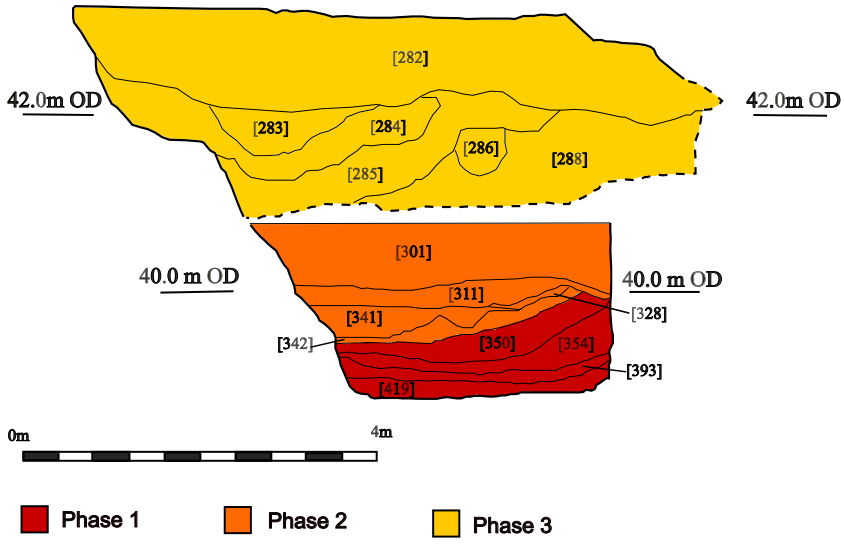

FIGURE 2
Section of Quarry 1 showing the three phases of activity. Each context represents a depositional event, while each phase represents a different use of the shaft. Phase 1 was made up of four depositional events, phase 2 of five depositional events and phase 3 six depositional events.

In the current study, each context has been considered a different depositional event; however, there is no way of determining how much time passed between them and they may have occurred in quick succession. A coin from the base of phase 1 indicates that the backfilling likely started *c*.AD 77, and the pottery and coin assemblages suggest that the backfilling was completed in the early second century (Haslam 2016).

METHODOLOGY

The faunal (NISP=10,747) and human (NISP=675) assemblage from Quarry 1 was subject to reanalysis in order to taphonomically recreate the deposition process and reconstruct the ritual practices which occurred at the Nescot site. Bones were identified using the University of Reading reference collection, Hillson (2009), Amorosi (1989), Prummel (1987) and White and Folkens (2005). Age estimation was done using epiphyseal fusion following Scheuer and Black (2000), Sumner-Smith (1966) and Amorosi (1989). It is worth noting that some bones referred to in the original site report, most notably the remains of 12 corvids, could not be located, and thus have not been considered as part of the study.

The following information was recorded for each fragment: context number, taxon, anatomical element, side, bone zones present (following Dobney and Reilly 1988 and Knüsel and Outram 2004), the state of fusion on all joint surfaces, the presence or absence of root etching, the presence or absence of weathering, evidence of burning, abrasion and erosion (following McKinley 2004), evidence of butchery/cutmarks (following Reitz and Wing 2008), evidence of gnawing, peri- and post-mortem fractures (following Outram 2001), and pathological lesions (following Roberts and Connell 2004).

The results of this analysis were then placed into the wider context of Romano-British cultural and religious associations in order to help understand both the actual ritual processes at Nescot and their possible meaning.

Phase 1

Phase 1 had the largest faunal assemblage, representing a minimum total of 155 domestic mammals (Table 1), as well as three galliformes (likely chickens), three stoats, ten rodents and eight amphibians. Phase 1 also contained the only human remains recovered from Quarry 1: the

TABLE 1
Quantification of mammals, excluding microfauna, in phase 1 of Quarry 1 by context

Context	Human		Dog		Pig		Cattle		Horse		Sheep/Goat	
	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP
350	4	63	20	881	8	191	1	4	2	18	4	58
354	5	123	22	613	5	36	1	2	2	8	5	49
393	6	158	28	1225	4	47	2	34	2	60	9	188
419	5	331	22	787	6	45	1	3	4	49	7	143
Total	**20**	**675**	**92**	**3506**	**23**	**319**	**5**	**43**	**10**	**135**	**25**	**438**

disarticulated and semi-articulated remains of 20 individuals and a single articulated individual. A study on which elements of the skeleton were present within the disarticulated human remains showed that the bodies had been manipulated, and certain elements removed (Green in press). The lack of cut marks implied that this occurred after a degree of decomposition. The presence of some semi-articulated remains implies that the bodies may not have been fully skeletonized when the manipulation took place, however the level of articulation could not be fully accessed as no in situ photos of this material were taken and only a small selection planned. The recovery of several patellae and phalanges, which are among the first elements to disarticulate due to decomposition (Knüsel 2014, 33) as well as being small and easily overlooked, suggests that the bodies were allowed to decompose in the shaft, rather than remains being collected from elsewhere and deposited.

The articulated skeletal remains represented a 45+ year woman, buried prone in the centre of the shaft at the base of context [354]. Her lower legs and the lower portion of her right arm were missing (Fig. 3). The good articulation of the remaining skeleton, lack of cutmarks on the surviving bones and generally good preservation of the overall assemblage suggests that the missing bones were the result of post-mortem manipulation after a degree of skeletonization.

The majority of the bones were found in groups around the edge of the shaft, and fragments from the same bone were found in different groups. This indicates that the remains had been moved, likely after a significant degree of decomposition. While, as noted above, the level of articulation could not be fully assessed, the mixture of both semi-articulated and completely disarticulated remains implies that the bodies may have been in different stages of decomposition when they were manipulated.

The disarticulated human remains were intermixed with a large assemblage of faunal remains. Almost no evidence of butchery was observed in the animal bone assemblage (0.39%), and only 0.4% of bones had been fractured while ‘fresh’. The spread of skeletal elements present indicates that the majority of the animals seem to have been deposited as full carcasses before becoming disarticulated, with the possible exception of the cattle which may have been deposited

FIGURE 3
Prone articulated woman at the base of [354]. Photo ©PCA.

as isolated joints of meat and skulls. Aside from a series of environmental samples taken from context [419], none of the contexts were sieved, and it likely that small bones may not have been recovered. Despite this, a large number of perinatal (fetal and neonatal) remains were collected, including puppies, foals, piglets, and lambs/kids. Environmental samples taken from the shaft show that charred barley was also present within the deposit (Haslam 2016). A small assemblage of artefacts comprising a marble gaming token, a bone spindle whorl, several complete pottery vessels, pottery sherds, six coins, an iron fitting and a brooch were recovered from this phase. Aside from the pottery and iron fitting, they have been interpreted as items that were placed on the bodies, rather than as separate, intentional depositions (Haslam and Haslam 2021, 130). One of the complete pots contained the remains of a puppy aged between 16–28 weeks.

15.51% of the bone fragments from phase 1 showed evidence of mineralized or dry bone fractures. These fractures indicate that the bones were broken after the majority collagen had decomposed but before excavation (Outram *et al*. 2005, 1703). It is probable that this is a reflection of people entering the shaft to manipulate the remains and breaking the bones present, when pushing them to the sides of the shaft and/or by stepping on them, as the density of remains would have made them hard to avoid.

Phase 2

Phase 2 of activity within the shaft is marked by a total absence of human remains. The faunal assemblage, however, was very similar to that of phase 1 in both composition (Table 2) and taphonomic modification. There was little evidence of butchery (0.13%) and despite a fairly high rate of fragmentation (57.32%), only 0.06% had occurred when the bones were 'fresh', and the majority of fractures had occurred in the modern day. The rate of mineralized and dry bone fractures was significantly lower than phase 1 (8.09%). This may be a result of less interaction with the remains, or it could be a reflection of the lower density of remains when people interacted with them. There is evidence that the remains were still interacted with to some extent, as they were, like the bones in phase 1, found in comingled piles around the edges of the shaft with occasional semi- and fully articulated individuals. The number of dog crania was also much lower than would be expected from taphonomic loss alone (26.82%), and it is likely that these were intentionally removed from the assemblage (Green 2024). The artefact assemblage of phase 2 was limited to a single knife, pottery and a small number of coins (Haslam 2016).

TABLE 2
Quantification of mammals in phase 2 of Quarry 1 by context

Context	Dog		Pig		Cattle		Horse		Sheep/Goat	
	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP
301	10	707	0	0	0	0	0	0	1	2
311	9	371	8	253	1	3	2	5	1	25
328	1	2	2	20	0	0	1	1	1	1
341	9	478	2	16	0	0	1	1	1	1
342	12	351	3	53	0	0	2	9	1	5
Total	**41**	**1909**	**15**	**342**	**1**	**3**	**6**	**16**	**5**	**34**

TABLE 3
Quantification of mammals in phase 3 of Quarry 1 by context

Context	Dog		Pig		Cattle		Horse		Sheep/Goat	
	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP
259	3	32	1	3	2	21	2	13	1	3
281	1	2	1	1	1	3	1	7	1	1
282	1	8	0	0	2	14	2	2	2	7
283	1	2	0	0	1	4	1	1	1	1
286	0	0	0	0	0	0	0	0	0	0
288	1	4	1	1	0	0	0	0	0	0
Total	**7**	**48**	**3**	**5**	**6**	**42**	**6**	**23**	**5**	**12**

Phase 3

The assemblage recovered from phase 3 contained fewer animals than were present in phases 1 and 2 (Table 3). The artefact assemblage was limited to pottery sherds, and one context was completely sterile (Haslam 2016). The faunal assemblage showed greater evidence of butchery, both in the form of cut and chop marks (3%) and 'fresh' fractures, which are often the result of processing bones for marrow (7%), consistent with its interpretation as rubbish disposal.

AN OVERVIEW OF THE DEPOSITION AT NESCOT

The Nescot shaft is unusual in the scale of deposition, with a bone assemblage of around 11,400 identifiable fragments representing a minimum (MNI) of 282 animals and 21 humans. All major domesticates were represented, with the majority of the assemblage (70.1%) comprising of dogs. The majority of the dogs from phases 1 and 2 were small in stature (<35 cm at the shoulder) and likely represent terriers or lapdogs as opposed to herding or guarding animals. Very few wild taxa were identified, and all of these were small animals (e.g. frogs, rodents) likely to represent pit fall victims or burrowing intrusions, rather than intentional deposits. There was almost no evidence of butchery (0.23%) or burning (0.56%) within the assemblage. Both the humans and domestic fauna represent a large range of ages from perinatal individuals through to adults. Very little skeletal pathology was observed within the assemblage (1.66%), and no obvious peri-mortem trauma, which may have resulted in death, was identified.

There were multiple indications of post-mortem manipulation of remains within the shaft. With the exception of the older female found in phase 1, all of the remains were found in small groups of disarticulated and semi-articulated bone. These groups were, for the most part, pushed up against the edge of the shaft and represented multiple species and individuals suggesting that the bones were mingled after the majority had become at least partially skeletonized. However, in most cases, it is impossible to access the exact degree of articulation present in the assemblage, as no photos and limited plans were made at the time of excavation. The skeletal elements present strongly suggest that in most cases whole carcases were deposited within the shaft before becoming disarticulated (Green in press). Furthermore a small selection of dog and human metapodials and phalanges showed evidence indicative of curation and handling before deposition (Green 2023). A single canine baculum [penis bone], discussed below, also showed evidence of applied pigment, and there is evidence that some human and dog bones were removed after skeletonization (Green in press).

THE DYNAMICS AND POSSIBLE MOTIVATIONS OF DEPOSITION

The shaft was open for a relatively short amount of time, roughly half a century based on the artefactual evidence (Haslam and Haslam 2021, 9–11; Green in press), and each of the nine depositional events that comprised phases 1 and 2 (Fig. 2) must have been an impressive spectacle, given the number of animals involved. The smallest single deposition event contained 11 animals (10 dogs and a sheep), and the largest 45 (28 dogs, 4 pigs, 2 cattle, 2 horses and 9 sheep) as well as five humans. While there is no evidence visible on the remains regarding the manner of death, Roman sacrifices normally had their throats slit (Aldrate 2014; Mantzilas 2016), which would not necessarily result in immediate death and would produce great quantities of blood (Aldrate 2014). There are accounts of other sacrificial methods in the Roman world, particularly in regard to dogs, which would be unlikely to leave an osteological trace, such as drowning (Mantzilas 2016; Irvin and Lundock 2021). Regardless of the cause of death it is worth considering that there is no 'peaceful' way to kill an animal, let alone many. Ewell in the Roman period was a small roadside settlement (Bird 2004a, 60), so it is possible that the depositional events at the Nescot shaft served a purpose for a wider population in the area. No temples have been attested at Ewell; however very few modern excavations have taken place within the town and the roadside settlement is not well understood. The large number of shafts in the area have led to a theory that the town was a religious centre, despite its lack of temples (Bird 2004a, 60–2; Smith 2018a, 195). It is very probable that Quarry 1 represented a festival or community ritual, rather than private ritual, given the scale of deposition. The number of animals present, and the evidence for curation and interaction with the remains (Green 2023; in press) all indicate that the Nescot quarry was both unusual and important within the ritual landscape of southern England.

The question of meaning is difficult to examine. Nescot lacks any votive inscriptions, and the assemblage as a whole cannot obviously be linked to any specific god or festival. The artefact assemblage is sparse, and offers few clues. However, as set out below, the quarry shaft and its biological contents can be broadly linked to fertility via a multitude of factors. Fertility is a commonly proposed, but not always well-evidenced, interpretation for Romano-British ritual shafts (Ross 1968; Green 1998; Smith 2006; Grimm 2007). This particular feature allows just such an interpretation but on the basis of firm, multi-proxy evidence.

ANIMAL AGE PROFILES AND FERTILITY

Perhaps the most obvious link to fertility is the large number of very young, perinatal animals recovered from phases 1 and 2 (Fig. 4). Perinatal dogs, horses, sheep/goats, and pigs were present within the shaft. Newborn and fetal animals made up 35% of the phase 1 assemblage (MNI=55), and 26% of phase 2 (MNI=18). This number and variety of very young animals is unusual within Romano-British shaft deposits.

The high percentage of perinatal animals in Quarry 1 makes natural death an unlikely explanation (Richard Meeson, pers. comm), and is very unusual for an assemblage from this time period. There were perinatal animals present in every depositional event in phases 1 and 2 showing repeated deposition of very young fauna. This is also unlikely to represent population control, as all age groups are represented in each context, and the percentage of perinatal animals is much lower than at other sites where population control has been proposed (Maltby 1993). The presence of so many perinatal animals suggests that they may have been bred near to the site. Dogs and pigs predominated, but it is worth noting that 14 perinatal foals were also recovered. While evidence

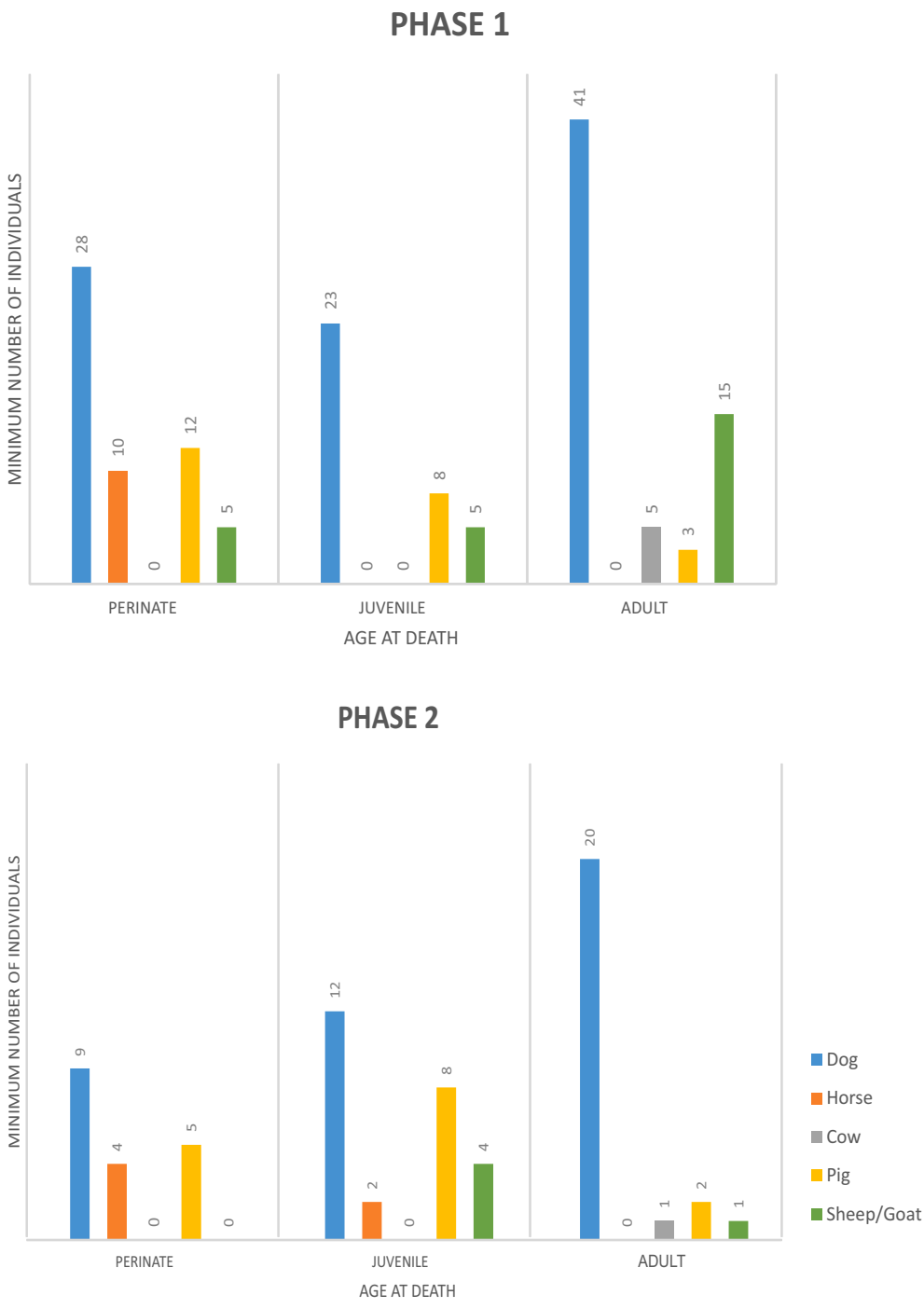

FIGURE 4
Major domesticates of the Nescot shaft by age and phase.

of horse breeding is relatively common after the conquest (Allen 2017, 126; 2018, 91), this is an unusually large concentration of very young animals for a Romano-British site, particularly one associated with a roadside settlement (Allen 2017, 128). Unlike dogs and pigs, who give birth to litters of several offspring, horses usually only have a single foal. As such the equine perinates within the Nescot shaft must represent multiple birth episodes.

The two most directly comparable shaft deposits excavated elsewhere are the second century AD shaft from the Springhead, Kent (Barnett *et al.* 2011) and the first to fourth centuries AD well from Oakridge, Hampshire (Oliver 1992). The Springhead shaft contained four neonates (11% of the total assemblage), all of which were dogs (Grimm 2007). These were interpreted as ritual offerings, and all but one were recovered from the same context. This is in direct contrast to Nescot, not only in terms of scale, but also in terms of number of species and the evidence of repeated deposition. At Nescot, all major domesticates aside from cattle were represented within the perinatal animals, and remains were recovered from the majority of contexts.

The Oakridge well contained high numbers of neonatal and perinatal animals, in particular dogs. Large groups of newborn puppies were found together, implying that whole litters had been deposited. Due to these deposits, perinatal dogs made up 75% (n=87) of the total canine assemblage. This was interpreted as evidence of population control (Maltby 1993, 59). Perinatal cattle (n=10), pigs (n=20) and goats/sheep (n=9) were also recovered from the well. The data necessary to compare overall percentages of perinatal and neonatal animals between Oakridge and Nescot has unfortunately not been published. Oakridge is perhaps more similar to Nescot than Springhead, both in the higher number of young animals and the range of species represented. It should be kept in mind however that the Oakridge well was open for over a century, while the Nescot shaft was in use for a relatively short amount of time (most likely *c*.50 years).

Horses and dogs both had associations with fertility and abundance during the Romano-British period (Toynbee 1973, 123, 197; Green 1998, 205; Smith 2006, 54). There is a noted link between dogs, particularly small dogs like those recovered from Nescot, and mother goddesses within Iron Age and Roman Europe. These figures are often shown with cornucopia and infants, as well as baskets of fruit, emphasizing their links to fertility both in both agricultural and social spheres (Green 1998, 200; Smith 2006, 54). Similarly, the goddess Epona is almost always depicted in the presence of horses. Epona, while originally Gaulish, was worshiped in Britain during the Roman period and was frequently associated with fertility, as well as the cavalry. While it probable Epona had a changing significance over the Roman period, her original form was likely that of a mother goddess associated with rebirth and fertility (Haeussler 2008, 28–9). This is reflected in her iconographic depictions which often feature foals, as well as baskets of fruit and bread, emphasizing abundance and new life (Toynbee 1973, 197; Green 1998, 205–6).

Dogs have also been associated with fertility within other contexts in Roman-Britain. A knife from Roman Silchester in Hampshire had a carved ivory handle showing an image of two dogs mating (Fig. 5). The knife was recovered from a pit along with the remains of six dogs and the feature was interpreted as evidence of a potential fertility rite (Smith 2006, 17; Fulford and Clarke 2011, 333). The skeletons of two dogs posed mid-coitus were found in a late Iron Age/early Roman grain storage pit close to Ewell, in Carlshalton, Sutton (Hunnisett 2011). Dogs are also commonly associated with infant burials throughout Roman Britain, linking them both to new life as well as death (Smith 2006, 33).

Within the phase 2 deposits, a dog baculum [penis bone] showing signs of red-brown staining was recovered (Fig. 6). This bone was one of six dog bacula within the Nescot faunal assemblage, indicating that at least six male dogs were deposited. While the presence of bacula

FIGURE 5
Knife with ivory handle carved in the shape of mating dogs from Silchester, Hampshire. Photograph courtesy of I. R. Cartwright. © I. R. Cartwright/University of Reading.

FIGURE 6
Dog baculum (penis bone) stained with red ochre on the dorsal surface of the bone.

is not in and of itself unusual, the staining on this specimen is indicative of human manipulation. Analysis using portable X-ray florescence (pXRF) confirmed that the pigment was iron oxide, likely red ochre (see Supporting Information for further detail). There were no metal artefacts recovered from the context, and no other bones showing signs of pigmentation were recovered from the shaft as a whole. While red ochre is naturally occurring within some soils in England, it was not present on the Nescot site. The staining was concentrated on the dorsal surface of the bone, and no chemical traces were detected on the ventral portion of the bone. There are two likely taphonomic scenarios that would result in the pigmentation of the baculum; either the ochre was applied directly to the bone, staining it red, or the baculum was kept in a cloth dyed with ochre which then decomposed, staining the bone. As no ochre was noted during excavation, and none of the other bones from the Nescot assemblage show signs of staining, it is probable that the bone was stained before it was deposited within the shaft. There are no other published examples of ochre-stained bones from Roman or Iron Age Britain, and given the context from which it was recovered, it seems probable that this bone represents some sort of ritual item. A penis bone has obvious connotations, particularly given the already strong association between dogs and fertility within Roman Britain.

AGE CATEGORIES AND THE HUMAN LIFE COURSE

Given the links to fertility across the animal bone assemblage, the demographic profile of the disarticulated human remains from the shaft are also worth considering. Age-at-death estimations for disarticulated remains are challenging, as each bone must be assessed in isolation, as opposed to forming an impression from the skeleton as a whole (Buikstra and Ubelaker 1994). As such, the age categories used for the Nescot shaft are wide, and 'adult' can only be taken to mean the bone is fully fused rather than indicative of any specific age. All age estimation was achieved using epiphyseal fusion. Even with these constraints, a large variation in ages was present within each of the four depositional events (Table 4). What is especially striking is that each context appears to be roughly uniform in terms of its age composition. Each context contained two or three adults, one adolescent, one child and one infant. Inhumation was not the majority burial rite at this time, and so some degree of selection might be expected (Smith 2018b, 216). Having such an even spread of individuals of different ages is however very unusual for a Romano-British site, as normally infants are not buried in the same places as other age cohorts, and adolescents and children are, in general, under-represented in the burial record in comparison to adults (Rohnbogner 2018, 291–3). The presence of children and adolescents at road-side settlements or industrial sites in Southern England is quite rare according to the data collected by the Roman Rural Settlement project (Allen *et al*. 2018). The age profiles within Quarry 1 differs both from that reported in other ritual shafts and wells, and from the age profiles of more traditional cemetery contexts (Rohnbogner 2018, 293; Green in press). The most notable difference is the high number of adolescents, who are, in general, less represented in Romano-British cemetery populations (Rohnbogner 2018, 291–4), and quite rare within shaft and well deposits (Green in press).

Age is an important part of social identity (Gowland 2006; Gilchrist 2012; Moore 2016) and given the consistent pattern of age-ranges represented in each context, it seems likely that it was also a factor when selecting individuals to be deposited within the shaft. The life course of Roman Britain can be split roughly into five categories: 0–3 years (infancy), 4–12 years (childhood), 13–17 years (adolescence), 18–39 years (young/prime adulthood) and 40+ years (mature/older adulthood) (Gowland 2016, 311; Moore 2016, 325). This pattern is supported by differential patterning of grave goods within Romano-British cemeteries, though regional variation has been noted, suggesting that the pre-existing ideas of life stage categories from Iron Age regional groups may have had an impact (Moore 2016, 332). These life course categories mirror the age ranges represented within the shaft. If we consider that the multiple adults represent the different stages of adulthood (prime and mature), then every life stage is represented. This suggests the human remains within these deposits could have had a symbolic meaning along these lines, connecting the shaft to the cycles of life and growth within the Romano-British world.

TABLE 4
Age at death of disarticulated individuals within Quarry 1

Context	Age at Death	Adult (Fully Fused)	Adolescent (11-20 years)	Child (1-10 years)	Infant (<1 year)
350		2	1	1	0
354		3	1	0	1
939		3	1	1	1
419		2	1	1	1

The inclusion of infants along with the other life stages within the shaft is interesting. Infants were generally treated quite differently within the Romano-British mortuary record, often buried either in non-cemetery contexts such as villas or ditches, or within their own 'zone' of a cemetery (Millett and Gowland 2015, 173; Moore 2016, 326). Even within shaft and well deposits, it is rare to find infants in the same feature as individuals from older life stages (Green in press). It has been suggested that the people of Roman Britain saw very young infants as a link to fertility and regeneration (Moore 2009, 184–9; Finlay 2013, 210). The presence of infants along with the older age cohorts within the shaft way therefore have had a dual meaning, both as part of the life course and, as spiritual connection to ideas of growth and abundance.

AGRICULTURAL FERTILITY

The large numbers of juvenile and perinatal animals within the shaft also allow for the approximate seasonality of the depositional events to be determined. Eight of the nine depositional events within phases 1 and 2 contained the remains of perinatal horses. Horses have a seasonal breeding cycle, normally birthing foals in spring and summer. Roman sources recommend the breeding of horses between the vernal equinox and the summer solstice, which would result in the majority of births occurring roughly between late February and late May (Klecel and Martyniuk 2021, 1870). This is further supported by the presence of young lambs/kids within the assemblage, which also tend to be born in the spring/summer (Maltby 1993, 55). This time of the year coincides with the planting period for barley and other cereals (Allen and Lodwick 2017, 144), and thus can be linked, at least tentatively, to the idea of agricultural fertility.

Agricultural fertility is also potentially linked to the original use of the quarry. The Nescot quarry was used primarily for the large scale extraction of chalk and flint (Haslam 2016, 78). The site contained ten separate quarry pits dated to the Roman period, the largest of which measured 42 m by 16.9 m and was, at its deepest point, 3.5 m deep. The Nescot quarry would have produced a prodigious amount of chalk, and while the exact size of the settlement at Ewell is unknown, likely more than would have been required for local construction (Haslam and Haslam 2021, 51). The proximity to London may suggest that the chalk was being used there. It is also possible that it was used to construct the nearby Stane Street; however the dating evidence for the quarries suggests that the road had already been constructed at the period of most intensive mining (Haslam and Haslam 2021, 51). Another option is that the chalk was used as a fertilizer. Pliny (*c*.AD 70) referred to the digging of deep chalk shafts in Britannia for agricultural purposes (*Natural History.* xvii.4), and it is possible given the large quantities mined that at least some of the chalk was destined for the fields.

CONCLUSION

The Nescot shaft is a unique assemblage due to the sheer scale of deposition on the site, yet it also serves as a case-study for how integrated analysis can allow for deeper archaeological interpretation. By tracing the religious and ritual associations of various inclusions within the shaft, and looking at both the seasonality as well as the shaft's original use, a convincing narrative about 'why' such rituals were enacted can be developed. While the idea of ritual shafts being associated with fertility is not new (Green 1998; Smith 2006; Grimm 2007), this study is one of the first to draw from multiple strands of evidence to support the idea, rather than relying on single inclusions or

outdated stereotypes of 'Celtic' ritual. While it is impossible to know for sure the reasons behind the deposition of *c*.300 humans and animals within the disused quarry shaft over approximately half a century, the evidence does support a link to ideas of abundance, new life and the agricultural cycle. 'Why' will always be the most difficult question for archaeology. As pointed out by J. Hill 'due to the very nature of interpretation ritual has no single meaning' (1995, 102), but it is also true that the more strands of evidence that can be drawn upon, the more complete the narrative becomes. In this case a feature full of the dead becomes a potential symbol of new life and regeneration, adding to the ever growing tapestry of Romano-British belief.

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Reading Archaeology Department
Whiteknights PO Box 227
Reading RG6 6AB
UK
E-mail: green.ellenjane@gmail.com

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Data S1. Supporting Information.