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Research Article

West African ancestry in seventh-century England: two individuals from Kent and Dorset

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Archaeogenetics, the study of ancient DNA, can reveal powerful insights into kinship and the movement of individuals in (pre)history. Here, the authors report on the identification of two individuals with genetic profiles consistent with recent sub-Saharan African ancestry, both of whom were buried in early-medieval cemeteries in southern Britain. Focusing primarily on a sub-adult female from Updown in Kent, the authors explore the societal and cultural contexts in which these individuals lived and died, and the widening geographic links indicated by their presence, pointing back to the Byzantine reconquest of North Africa in AD 533–534.

Keywords: Africa, Britain & Ireland, Anglo-Saxon, early medieval, archaeogenetics, migration

Introduction

Migration, its directions, scale and impact, are much debated in European archaeology, especially in relation to cultural change in the Early Middle Ages (Burmeister 2000: 540; van Dommelen 2014; CISAM 2019). Archaeogenetic research provides new insight into this

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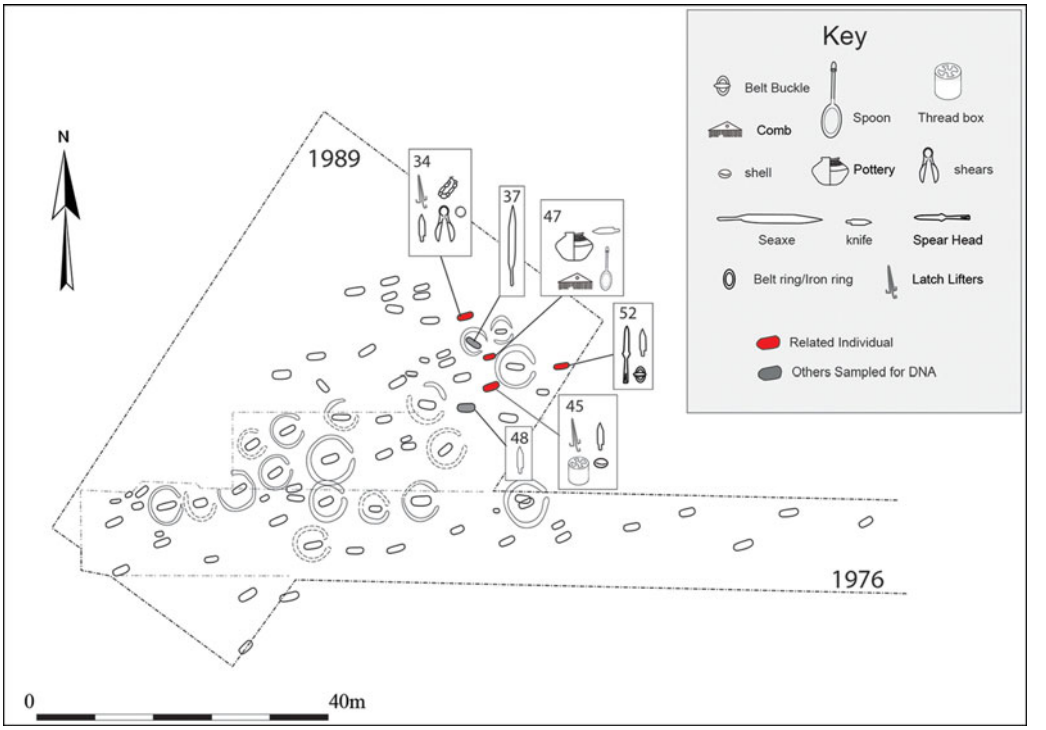

Figure 1. The excavated graves at Updown, Kent, showing the burials sampled for aDNA (figure by authors).

phenomenon at population scales (Gretzinger *et al.* 2022; Patterson *et al.* 2022): concurrently revealing direct kinship between individuals within cemeteries and, in combination with stable isotope analysis, identifying individual migrants and their lifeways. This article discusses two individuals buried in seventh-century graves near the south coast of England: at Updown, Kent, and at Worth Matravers, Dorset. Both individuals had recent ancestors in sub-Saharan West Africa. A complementary article (Foody *et al.* 2025) describes the context of the Worth Matravers cemetery and so here we focus on the young female from Updown as well as her grave goods and genetic relatives identified in the cemetery. The identification of these two individuals and recognition of their assimilation into the societies within which they lived and died have far-reaching implications concerning connectivity and the evolution of the early-medieval world.

The sites

Contiguous areas of the early Anglo-Saxon cemetery at Updown, near Eastry in Kent, were excavated in advance of development under the direction of Sonia Hawkes in 1976 and Brian Philp in 1989 (Welch 2008) (Figure 1). In all, 78 inhumation burials were uncovered, primarily from the seventh century AD. The grave goods from Updown comprise dress accessories, weaponry and personal accessories, including objects imported from the Frankish continent and an unusual Byzantine buckle, antique when buried (Welch 2008: 35). Updown belongs to a cluster of cemeteries in East Kent and is only a few kilometres

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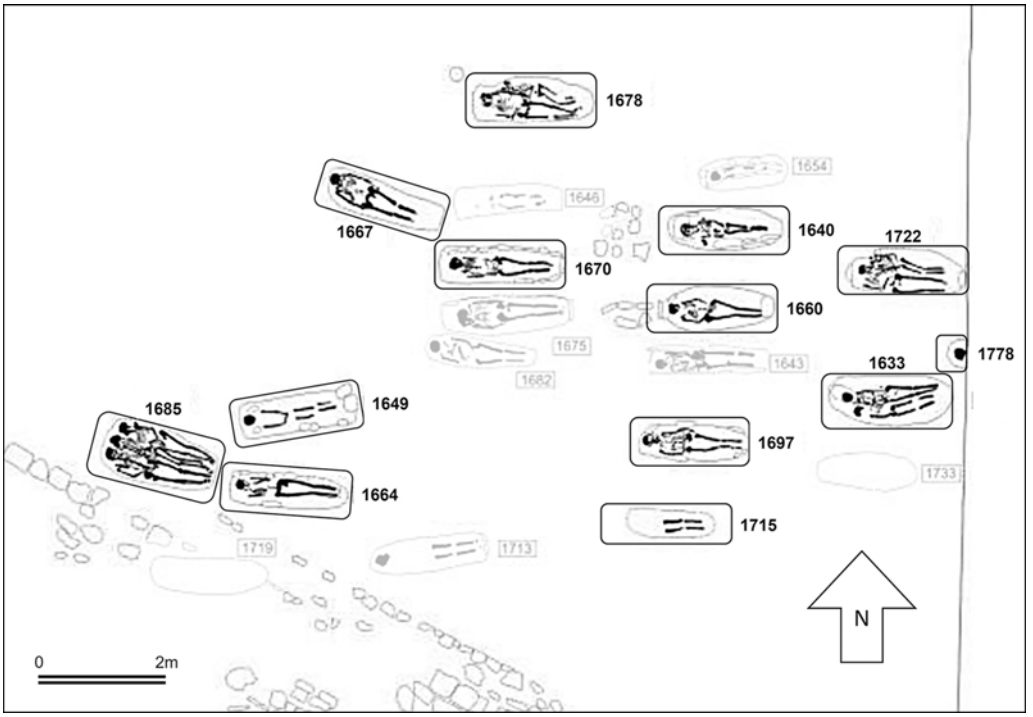

Figure 2. The cemetery at Worth Matravers, Dorset, showing the burials sampled for aDNA in bold (figure by authors).

from the large Anglo-Saxon cemetery site at Finglesham: from the Old English *Þengelshām*, meaning a 'prince's homestead' (Richardson 2005: maps 2 & 8; Hawkes & Grainger 2006: 32). The placename recorded in early-ninth-century charters identifies Eastry as an administrative division, and wider historical evidence indicates that it was a royal centre as early as the sixth century (Hawkes 1979: 96–7).

The ancient DNA (aDNA) of six individuals from Updown has been analysed: graves 34, 37, 45, 47, 48 and 52 (Figure 1; Gretzinger *et al.* 2022: sup. mat. 1). The details of the results from grave 47 (genetic ID EAS003) have not previously been reported because this individual's ancestry stood out as meriting separate discussion and contextualisation.

At Worth Matravers, a small inhumation cemetery of 21 graves, containing 26 individuals, was excavated by volunteers from the East Dorset Antiquarian Society in 2011 within a multi-period site called 'Football Field'. Originally considered Roman, radiocarbon dating and one copper-alloy belt buckle identified the cemetery as seventh-century (Ladle 2018). The graves, all oriented west–east and containing supine inhumations, were laid out in six short rows and included one triple and three double burials (Figure 2). The only grave goods are a small copper-alloy buckle on the pelvis of an adult female (grave 1667) and a possible stone anchor used to pillow the head of an adult male in a double burial (grave 1633A). The site lies around 2km inland from the English Channel on the Isle of Purbeck.

The aDNA results from 18 individuals from Worth Matravers were analysed previously (Gretzinger *et al.* 2022: sup. mat. 1; Foody *et al.* 2025). Here we consider grave 1633B

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(sk1652; Huddersfield sample KD010; genetic ID I11570), a 17–25-year-old male who shared a double grave with the (unrelated) adult male with the pillow-stone.

Kent has always been a conduit for influence from the adjacent continent. That was so marked in the sixth century that Leeds proposed to call this Kent's 'Frankish Phase' (Leeds 1936: 44–58; Soulat 2018). Dorset, contrastingly, sat between the distribution of Mediterranean imports from Atlantic trade routes (Duggan 2018: 89) and of early Anglo-Saxon burial practices before the seventh century (Bayliss *et al.* 2013: 529–45); it was not demonstrably fully incorporated within the kingdom of Wessex before a bishopric was established at Sherborne, formerly British Lanprobus, in AD 705 (Yorke 1990: 136–45).

The ancient DNA

Ancient DNA was retrieved from a petrous bone from Updown grave 47 (EAS003) and it was possible to reconstruct approximately half of the genome from the sequences (for detailed methods, see online supplementary material (OSM) 1). Single nucleotide polymorphism (SNP) coverage on the autosomes, as well as relative coverage on the X and Y chromosome (Lamnidis *et al.* 2018: 9), determined the sex of the individual as female. Osteological evidence suggests that she died around the age of 11–13 years (Welch 2008: 27). The maternal lineage of this individual represents mitochondrial DNA (mtDNA) haplogroup U5b1 (specifically U5b1c2b), which is common in northern Europe (Kristjansson *et al.* 2022), yet her autosomal DNA shows clear signals of non-European ancestry. Population genetic investigation (through principal components analysis (PCA) and outgroup F3 and F4 statistics; Patterson *et al.* 2006, 2012) reveals affinity towards present-day sub-Saharan Africans, especially the West African Yoruba, Mende, Mandenka and Esan groups (see OSM1, Figures S5–S7, Tables S4, S7 & S10). Analysis of aDNA extracted from a petrous bone from Worth Matravers grave 1633B (I11570) resulted in similar observations, identifying the European U5b mtDNA haplogroup and sub-Saharan African affinity on the autosomes. Both individuals thus show genetically and geographically mixed descent, with an estimated 20–40 per cent ancestry characteristic of sub-Saharan Africa.

To explore potential genetic relationships between these two and other individuals from Updown and Worth Matravers, the software READ and lcMLkin were used and pairwise mismatch rates between the genomes calculated (Lipatov *et al.* 2015; Kennett *et al.* 2017; Monroy Kuhn *et al.* 2018). No other individual at Worth Matravers displays a biological relationship with the individual in grave 1633B, but at Updown two females are identified as second-degree relatives of the girl in grave 47 (EAS003): in graves 34 (EAS001, grandmother) and 45 (EAS002, aunt) (see Table 1). The male buried in grave 52 (EAS006) is a third-degree relative, suggesting that the female in grave 34 was his daughter and the girl in grave 47 therefore his great-granddaughter. The females in graves 34 and 45 also carried mtDNA haplogroup U5b1c2b (Gretzinger *et al.* 2022: tab. S1), implying a single line of maternal descent. This suggests that the woman in grave 45 is a maternal aunt of the female in grave 47 (Figure 3). The male in grave 52 carries the Y chromosome haplogroup E-V13, which is unusual in northern Europe and more characteristic of southern Italy, the Balkans

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Table 1. Graves and corresponding sample IDs discussed in the text.

Cemetery	Grave ID	Genetic sample ID	Relationship to grave 47/EAS003
Updown	Grave 34	EAS001	Maternal grandmother
Updown	Grave 45	EAS002	Maternal aunt
Updown	Grave 47	EAS003	–
Updown	Grave 52	EAS006	Maternal great-grandfather
Worth Matravers	Grave 1633B	I11570	n/a

and Greece (Cruciani *et al.* 2007), but neither he, nor his daughter (grave 34) or granddaughter (grave 45), exhibits any measurable sub-Saharan African ancestry.

Supervised ADMIXTURE analysis (Alexander *et al.* 2009) indicates that most of the ancestry observed in samples EAS006 (grave 52), EAS001 (grave 34) and EAS002 (grave 45) has the Continental Northern European profile (CNE) that became dominant over much of England in the Early Middle Ages (*c.* fifth–tenth centuries AD) as a result of migration from the North Sea zone (Gretzinger *et al.* 2022). There are only minor fractions of Continental Western European ancestry (CWE) and Western British Irish ancestry (WBI). Such a profile is typical in south-eastern England, especially Kent, in the early post-Roman period (fifth to seventh century AD), and may represent more southerly demographic input compared with East Anglia and further north. If the reconstructed genealogy is correct, the 20–40 per cent sub-Saharan ancestry of the female in grave 47 (EAS003) must therefore derive from her paternal line, from which no relatives have yet been identified at Updown.

The software ALDER, DATES and rolloffp were used to estimate probable admixture dates for the individual in grave 47 (EAS003) (Moorjani *et al.* 2011; Loh *et al.* 2013; Chintalapati *et al.* 2022). Using present-day Esan and early-medieval genomes from England as admixture sources, ALDER suggests a distance of 3.47 generations (95% confidence interval: 0–10 generations). Rolloffp and DATES estimate slightly older admixture dates, albeit with large 95% confidence intervals, suggesting that these tools struggle to identify recent admixture in single genomes. Thus, we may conclude that the admixture event was recent; the inferred admixture dates and estimated ancestry proportions imply that one paternal grandparent of the individual within grave 47 (EAS003) was of entirely sub-Saharan African descent.

The similar proportions for the sub-Saharan ancestry of the individual within grave 1633B (ID I11570) at Worth Matravers and the congruous presence of the U5b mtDNA haplotype imply a genetic background analogous to the individual within grave 47 at Updown: the recent admixture of distinctively West African DNA, most likely two generations previously. While the low coverage of the I11570 aDNA sample and the absence of identified genetic relatives within the Worth Matravers cemetery prevent further inferences about his family history, grave 1633B differs from Updown grave 47 in exhibiting predominantly WBI ancestry (77.4±8.4%), consistent with the wider sampled Worth Matravers population. Thus, early-medieval individuals with West African ancestry are identified both in a part of Britain directly affected by the 'Anglo-Saxon' migration and in a community characterised by genetic continuity through the Roman period from the Iron Age (Gretzinger *et al.* 2022; Foody *et al.* 2025).

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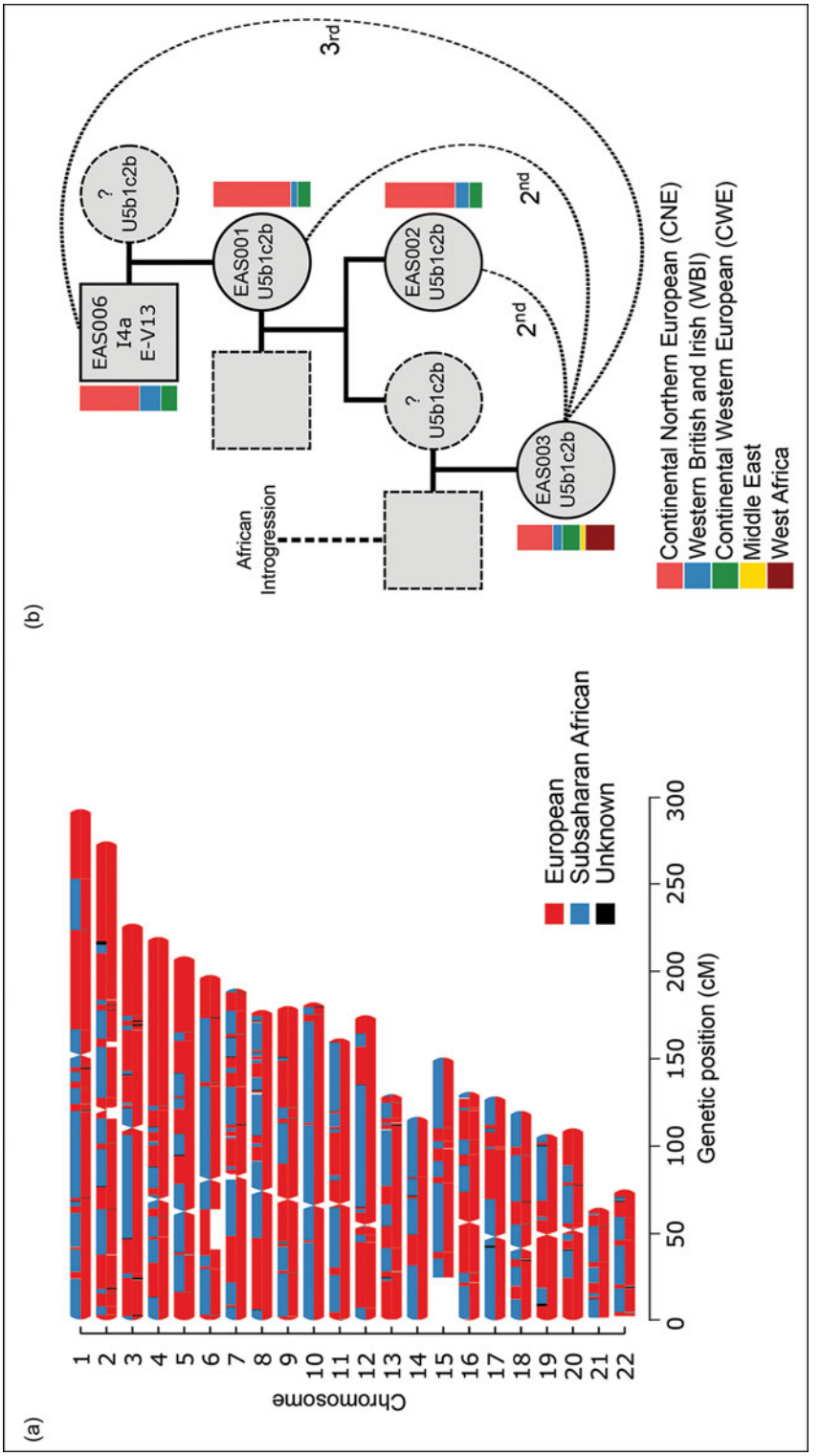

Figure 3. Genetic family history of EAS003: a) Karyogram visualisation of the length and distribution of admixture tracts across the EAS003 genome as inferred using RFMix. b) reconstructed pedigree of EAS003. Males are depicted as squares, females as circles. Y chromosome and mtDNA haplogroups are reported. The results of a supervised admixture at K = 12 is shown next to the corresponding individual (figure by authors).

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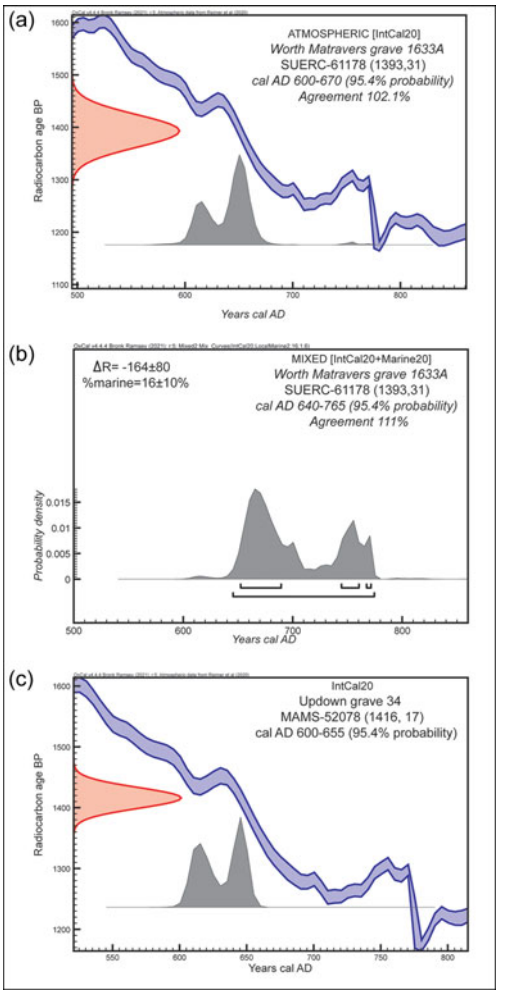

Figure 4. Radiocarbon dating evidence for Worth Matravers grave 1633A using atmospheric (a) and mixed (b) calibration curves, and for Updown grave 34 (c) (figure by authors).

Radiocarbon dating

Radiocarbon dating places the individuals within Updown grave 47 and Worth Matravers grave 1633B at around or just after the mid-seventh century. The young male at Worth Matravers was interred in a double grave (1633A/B) with another adult male (sk1632, grave 1633A). Two radiocarbon ages are available for grave 1633A and another for grave 1633B; all are statistically consistent and yield a combined age of 1395±13 BP (cf Foody *et al.* 2025, S2). Stable isotope ($\delta^{13}C$) analysis indicates that shoreline shellfish were consumed regularly at Worth Matravers (Krus in Ladle 2018: 216–20). The admixture of a calculable proportion of the marine calibration curve would place the bulk of probability for the double grave in the second half of the seventh century, but this likely over-'corrects' as well as introducing wider error margins (see OSM2). The results of calibration using the IntCal20 curve, presupposing an essentially terrestrial diet, and using a mixed curve, very probably bracket the true date of this burial (Figure 4a & b).

At Updown, grave 34, the grandmother of the occupant of grave 47, was buried on the opposite side of a barrow burial (grave 37) containing a seax (a single-edged weapon resembling a large knife) of type SX1-c, dating from the early seventh century at the latest (Bayliss *et al.* 2013: 482–86). The estimated age at death for the female in grave 34 is mid-20s to mid-40s. Her skeleton is radiocarbon dated to cal AD 600–655 at 95.4% probability (Figure 4c). It is unlikely that she outlived her granddaughter, but the relative proximity of the graves suggests that they were buried within a few years of each other, providing an early to mid-seventh century estimate for the date of grave 47.

The Updown girl

The subadult female in grave 47 at Updown was buried with a knife, a spoon, a bone comb and a decorated pot (Figure 5; Welch 2008: 27, figs. 53 & 65). The biconical pot, placed

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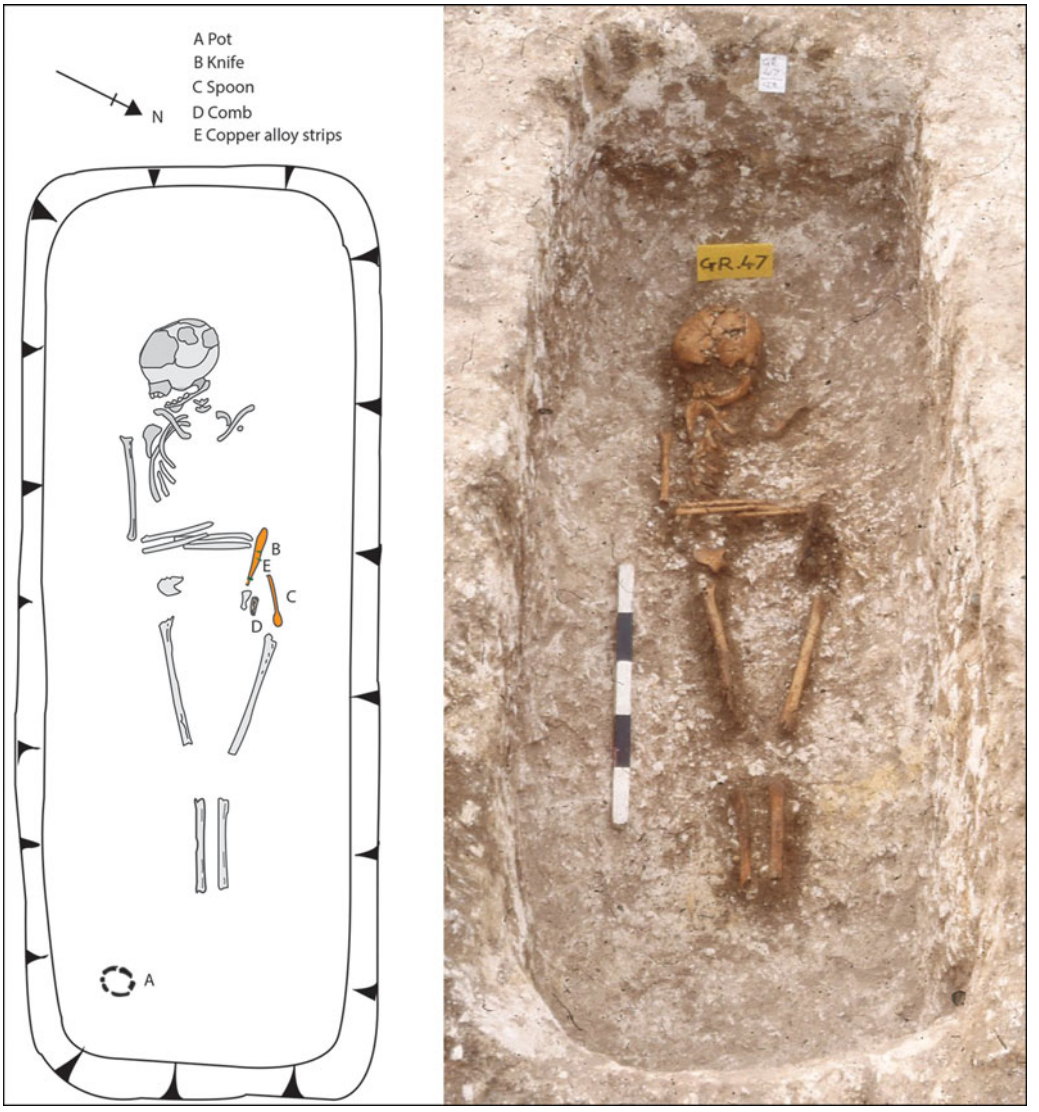

Figure 5. Grave 47 at Updown: photograph and adjacent grave plan show the positioning of the body and grave goods (figure by authors).

near her feet, was a fine, wheel-turned product. Comparable vessels are familiar in contemporary Kentish cemeteries and most were imported from Frankish Gaul. The incised interlaced decoration in bands around the body of this pot is, however, unparalleled and this could be one of the few specimens for which local manufacture seems possible (Welch 2008: 39–40; Bayliss *et al.* 2013: 475).

The comb, spoon and knife were found by the left hip, and fragments of sheet copper-alloy mounts may be the remnants of a bag within which these items were arranged. The knife is a familiar, utilitarian item, but the other two objects have potentially richer implications.

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Spoons could also be used as pendants or amulets (Dunham 2020: 94–5). The finest examples from Anglo-Saxon graves represent the continuing Byzantine and continental production of silver spoons of a Roman pattern, for example at Sutton Hoo mound 1 and the Prittlewell chamber grave (Hauser 1992; Drauschke 2006: 57–8; Blackmore *et al.* 2019: 159–65). Small spatulate iron spoons are a feature of seventh-century burials in Kent, where they have been found at Dover Buckland (graves 75, 110, 119 & 127), Holborough (grave 11) and Sibertswold (grave 60), as well as Burwell in Cambridgeshire (Geake 1997: 97–8; Welch 2008: 38). A second specimen from Updown was found, again with a comb (made of antler) at the left hip of the young adult in grave 45, the individual identified as the maternal aunt of Updown girl. Also, cylindrical work boxes were found in graves 34 and 45 at Updown; this artefact-type, like the spoon, has also been linked to the symbolism associated with the introduction of Christianity (Hills 2011).

Combs occur regularly in early Anglo-Saxon female inhumations, though not profusely. A three-piece, double-sided composite design made from antler is a long-lived type, familiar from the fifth century onwards; a finer comb-type introduced in the seventh century is a single-sided composite (MacGregor 1985: 82–94). The fragment of a small double-sided comb in grave 47 conceivably represents a keepsake or gift, as does the comb from grave 45, though in this case the comb-type is not recorded as it has apparently been lost.

These combs are cosmetic items, used in grooming or cleaning. Williams (2015: 33) attributes the miniature combs frequently found in cremations to a metaphorical "strategy of re-building the corporeality of the dead". The location of combs by the head in some inhumations suggests they had been worn to ornament the hair, becoming part of the individual's outward appearance. Acts of personal grooming could be performed in public, the combs becoming fundamental to a person's corporeality and how they were perceived by others. The transformation of physical appearance was important in many prehistoric African bodily presentations, while grooming, and rituals involving combs, may suggest these items held amuletic and ritual properties (Ashton 2013).

Buckland Dover grave 110 and Burwell grave 83 are graves of adult women with the same combination of a comb and an iron spoon/spatula. Combs are most frequently found accompanying women over the age of 20 years (Stoodley 1999: 105–107). The burial of a subadult at Updown with objects anticipating a typically adult female presentation is not irregular, but its components may still be interpreted in terms of their specific context. The Black British artist Jade Monsterrat notes that a woman's hair is deeply rooted in her identity and heritage, referring to the fashion of straightening hair in line with European aesthetics (Figure 6)—conceivably an experience shared by Updown girl. Her African ancestry may or may not have been visible in aspects of hair-type, facial features and skin tone. Her skull is only partially intact, limiting the scope for metrical correlates of her ancestry (Ousley & Jantz 2012). A fairly broad interorbital span of 24.7mm in the nasal region could reflect African ancestry, although caution is essential in this respect due to the level of preservation, taphonomic changes and the limited availability of comparative data (Howells 1989: 129). Nonetheless, the eclectic assemblage of artefacts that she was buried with embodies wide sources of influence, like her ancestry; the gathering of familiar objects for a unique context —this girl's burial—imposed societal norms upon her that might be meaningfully comparable with pressures experienced by young women of African descent today.

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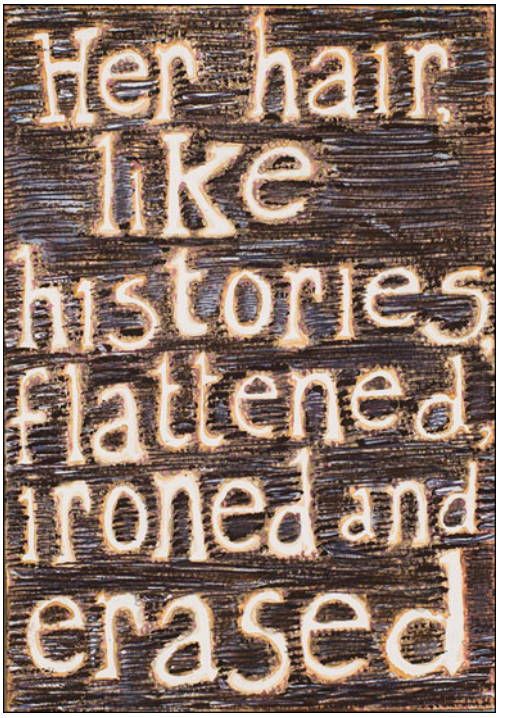

Figure 6. Jade Montserrat, Her hair like histories, flattened, ironed and erased. Watercolour, gouache, pencil and crayon: 2016 (© Government Art Collection; © Jade Montserrat. All rights reserved, DACS 2023).

Archaeologically, this individual grave tells subtly of experience among the better-off, alongside a royal centre. This early-medieval population included immigrants and their descendants, women exogamously married and travellers passing through from near and far, and used Christian symbolism (Leggett 2021).

Out of Africa: historical and archaeological contexts

The discovery of recent sub-Saharan ancestry for two individuals who died and were buried as ostensibly typical members of their communities, around the middle of the seventh century at separate sites in southern England, adds a new dimension to data on long-distance movement and demographic interaction involving Britain. It also contributes to our understanding of extensive economic and political relationships through and around the Mediterranean in the sixth and seventh centuries. North Africa had been a key region for the Roman Empire, particularly for the grain and oil it could supply. Roman imperial rule had itself succeeded earlier states in Egypt and Carthage and the Roman army recruited African 'barbarian' troops from the western provinces of Mauretania and Numidia who served, and could eventually settle, across the Empire (Jones 1964: 52–60).

Even so, detailed knowledge of Africa in ancient Greece and Rome was limited to the Mediterranean coastlands, bordered to the south by the Atlas Mountains and the Sahara, besides the Nile Valley and the Red Sea trade route leading to East Africa and Asia. In the fifth century BC, Herodotus described the Sahara as abundant in salt, populated principally by a group called the Garamantes; beyond them he was aware of a Black Africa populated by people he called 'Aethiopians' (*Histories* 4.183; Godley 1920–25). From the mid-first century AD, Pliny the Elder offered a more systematic account of remoter parts of Africa (*Natural History* 5.43–6; Rackham *et al.* 1962–71). He knew about the great River Niger (*Nigris*) flowing across the southern Sahel, while *c.* AD 300 Solinus detailed African fauna and suggested that the Niger flowed east into the Nile (*Polyhistor* 30; Mommsen 1895).

Herodotus knew that distant areas of Africa were rich in gold, as well as ebony and elephants for ivory (*Histories* 3.114; Godley 1920–25); Pliny's contemporary, Pomponius Mela, claimed that the beautiful Aethiopian Macrobii around the Upper Nile made fetters for wrongdoers out of gold (*De Chorographia* 3.85–7; Romer 1998). Arabic sources from the

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early tenth century of the Christian Era onwards are clear that *bilad as-sudan*—Black Africa—was the source of plentiful gold (Dunlop 1957; McIntosh 1981). It has been proposed that the minting of gold in Roman Carthage dates the establishment of trans-Saharan gold shipments to the late third century AD onwards, but no corroborative trace elements occur in Byzantine or Islamic coins minted there before the ninth century (Garrard 1982; Magnavita 2013; Morrisson 2016: 184–85; O'Connell 2024: 214–19). Firm archaeological evidence of a large-scale trans-Saharan trading system, between centres embedded within political entities, especially the states of Ghana and Gao in modern Mali, emerges only around the turn of the seventh/eighth centuries and grows substantially into the ninth (McIntosh 2005: 175–9; MacDonald 2011; Phillipson 2017; Cissé 2019).

The Vandals seized North Africa *c.* AD 439 and their kingdom survived nearly a century before the Byzantine army reconquered the area (Heather 2005: 262–99). The reincorporation of this territory into the Byzantine Empire lasted just over a century before Arab Islamic conquest in the period AD 648–698 (AH 27–80 in the Islamic calendar). Archaeological evidence from Italy, Iberia and Gaul shows that trade between North Africa and Mediterranean Europe had remained buoyant in the Vandal period (McCormick 2012; Piéri 2012). It is conceivable that the small amounts of African Red Slip Ware that made their way via Atlantic routes to western Britain *c.* AD 525–550 post-date the Byzantine reconquest (Campbell 2007: 14–26; Duggan 2018), but this is too fine a chronological issue for archaeological evidence to determine. This trade identifies a link that is chronologically and geographically proximate to that of the aDNA evidence presented here, though these distinct fields of evidence do not quite join up. Concurrently, bubonic plague (*Yersinia pestis*) travelled along shipping routes from Egypt to Constantinople by the spring of AD 542 (Procopius *History of the Wars* 2.22–3; Ewing 1914–28); within a few years the pandemic had spread to Spain, France, Bavaria and England, highlighting the persistent movement of goods and people (Keller *et al.* 2019).

Counting two to four generations, of about 25 years, back from the mid-seventh century implies that the genetically part-African individuals buried at Updown and Worth Matravers were descended from ancestors who probably left the southern Sahel between the mid-sixth and the early seventh centuries. This points to the period of Byzantine control of North Africa as that in which whatever contacts and exchanges facilitated the distinctive genetic make-up of these people were embedded. By the late sixth and seventh centuries, Byzantine cultural pre-eminence was highly influential, even in distant England. Byzantine coins made their way via the Continent to Britain and Byzantine costume and jewellery fashions are evident in seventh-century female grave-assemblages. These long-distance lines of commerce and exchange have, however, hitherto focused historical and archaeological attention primarily to a west-east axis, running through south-eastern Europe from Asia, bringing exotica such as silk thread and textiles, cowrie shells, amethysts and garnets to Britain (Huggett 1988; Morrisson & Sodini 2002: 206–12).

A tantalising contemporary story of a ship laden with grain sailing from Alexandria to Britain in the early seventh century and returning with a load of tin—turned miraculously into silver—implies that this was an exceptional voyage rather than a regular trade route (Leontius of Neapolis *Life of John the Almsgiver* 8; Festugière & Ryden 1974). Yet, there is abundant

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evidence of pathways by which individuals of recent West African ancestry could have travelled to mid-seventh-century southern Britain. It is significant that it is human DNA—and therefore the movement of people—that now expands our awareness of the range of long-distance interaction further south, to sub-Saharan Africa. There was substantial trans-Saharan slave trading to the Caliphate by the ninth and tenth centuries but there is no reason to believe that Black Africans were falling victim to large-scale enslavement and trafficking as early as AD 600, although lamentably such behaviour is possible in any historical circumstances (Segal 2001: 42–65). In the two cases discussed here, the eventual outcome of opportunistic movement along important trade routes is the more plausible scenario.

Conclusion

Easily found then was the African maiden on the ocean's shore, adorned with gold (Old English *Exodus* lines 580–1, our translation)

The Updown girl, her aunt and grandmother, were buried close to a royal centre in the period which produced the seventh-century Kentish law-codes. These explicit if summary laws concerned wives, widows, divorcees and their children, and demonstrate that the patriline of husband and father was fundamental to social identity and rights (Lambert 2017: 51–57). The complete incorporation of Updown girl within her community and its customs strongly implies that her father, and potentially the deeper paternal line, was known to that community. Similarly, full social assimilation of the young man at Worth Matravers is arguably demonstrated through his sharing of a grave with an unrelated man with whom he shared some proportion of WBI descent (Foody *et al.* 2025).

Yet these separate connections were neither isolated nor momentary. Sixth-century elephant ivory from Lincolnshire in eastern England can be provenanced to Africa (Hemer *et al.* 2023). In the vernacular verse *Exodus*, African women are imagined as sharing with the Israelites, having escaped their enslavement in Egypt, the constructive use of liberated Egyptian gold: potentially making a godly use of pagan treasure (Ericksen 2021: 100–20). The churches in Africa were powerhouses of early-medieval Christendom, and the African Abbot Hadrian who joined Archbishop Theodore in Canterbury in the later seventh century played a fundamental role in the practical establishment of Christianity in England (Lapidge 2004). Archaeological, literary and historical sources help us to contextualise this unexpected but congruent new information from archaeogenetics on the breadth of horizons informing the early-medieval sphere.

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Online supplementary material (OSM)

To view supplementary material for this article, please visit https://doi.org/10.15184/aqy.2025.10139 and select the supplementary materials tab.

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