

Guide to the Excavations at
**Five Mile
Lane**



GUIDE TO THE EXCAVATIONS AT FIVE MILE LANE

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Aerial photograph of area SMR19. The partially excavated visible rings are the remnants of two Bronze Age burial mounds. One was later used as a cemetery in the Medieval period.



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Artistic reconstruction of Iron Age burial



Summary Overview

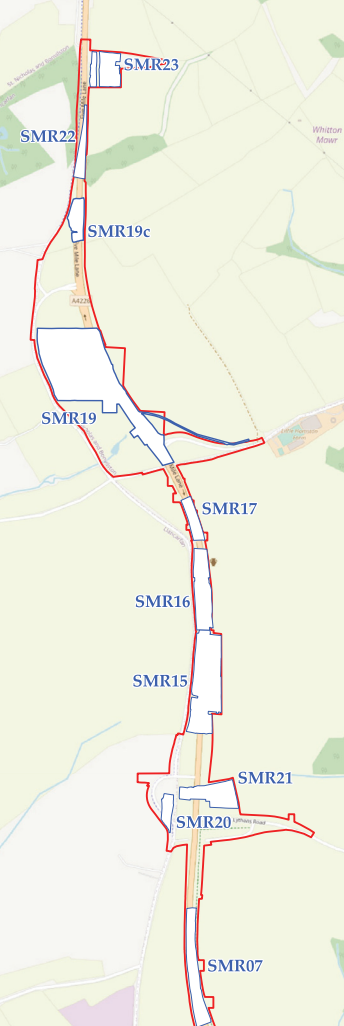
This is the second volume e-book of the excavations at Five Mile Lane, just north of Barry. It will detail the results of years of post-excavation analyses on the archaeological remains uncovered.



Partial view of the remains of Whitton Villa

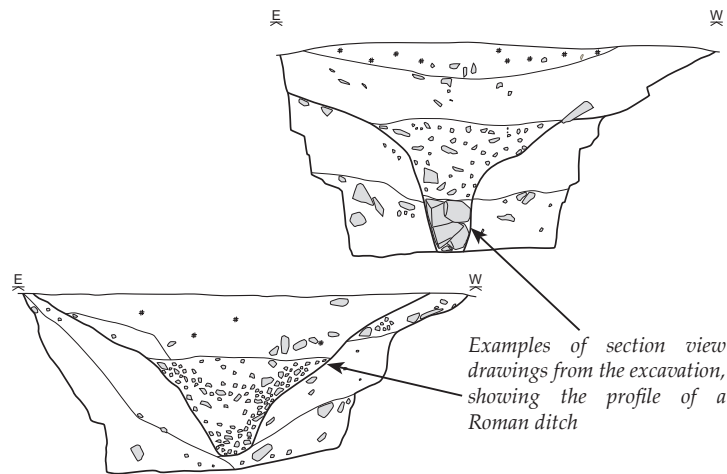


As well as delving further into the nature, function and dating of these remains, the team undertook detailed analyses of the human and animal bone, artefacts, and the past environment. This revealed a complex picture of the evolution and exploitation of the landscape in this part of the Vale, as well as providing unsuspected insights into the lives of those who lived there down the ages.



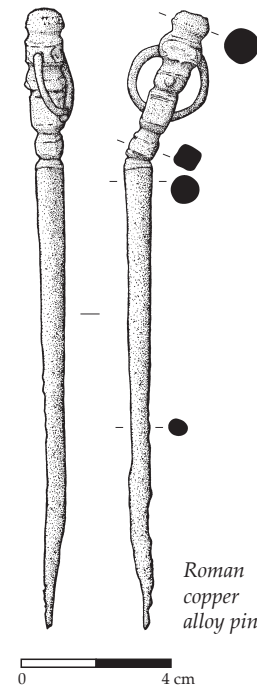
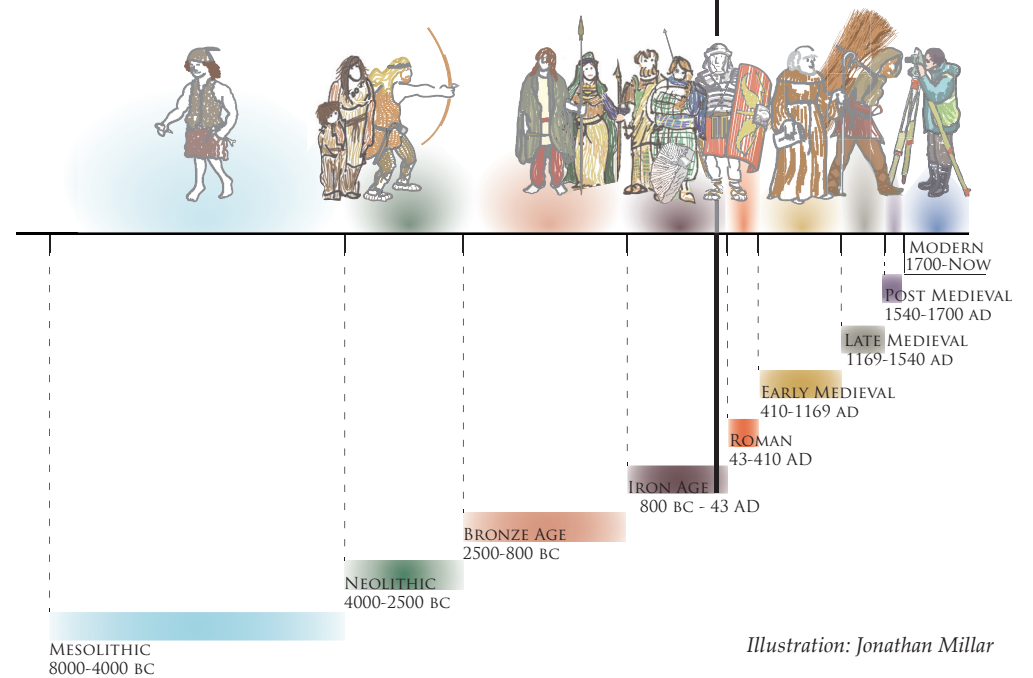
Introduction

Investigations were undertaken by Rubicon Heritage Services Ltd. between 2017 and 2019 in advance of the A4226 road improvement scheme. The project was identified and funded by Welsh Government. Previous assessment had indicated three areas, SMR15, SMR16 and SMR19, would need full excavation. After Rubicon undertook a programme of evaluation this was expanded to include the additional areas of SMR7, SMR17, SMR19c, SMR20, SMR21 and SMR23.



Field archaeologist starting a plan view drawing

Chronology of Archaeology in Wales



The on-site investigations uncovered a Neolithic ceremonial landscape in SMR19 that evolved into a funerary landscape during the Bronze Age period, where elements of settlement were also found in SMR7, SMR15 and SMR23. The funerary and ceremonial landscape was abandoned during the Iron Age when the settlement landscape was developed in SMR15 and SMR19c. This then culminated in the construction of Whitton Villa at the beginning of the Roman period in SMR16 which was surrounded by agricultural fields in SMR15 and SMR17. After the end of the Roman period, when the villa was no longer inhabited, the medieval population focussed on creating a cemetery within an existing prehistoric monument in SMR19, possibly using it as a meeting place within the surrounding agricultural landscape.

The Neolithic to Bronze Age

Ceremony, Burial and Settlement

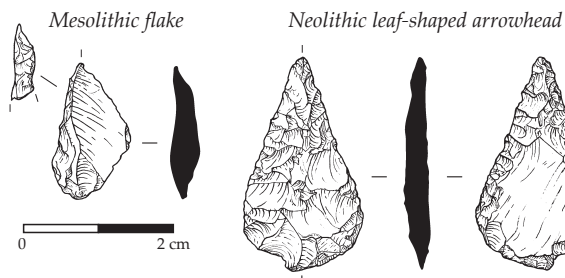
The excavations at Five Mile Lane revealed evidence for exploitation of the area during the Mesolithic period along with more substantial evidence of Neolithic activity within the areas SMR19 and SMR20. Mesolithic activity was represented by lost or discarded flint artefacts recovered in the fills of later features.



Possible polished axe fragment

An isolated pit in SMR20 contained the remains of a young sheep or goat along with fragments of Neolithic polished axe and other pieces of flint, as a potential ritual deposit. Charcoal from the pit was radiocarbon dated to the Early Neolithic period.

Neolithic activity within the landscape was primarily focused in SMR19 and included over one hundred large pits which would have contained wooden posts. These were potentially prehistoric in date and formed part of a complex of at least nine rows of posts. Five of these aligned roughly northeast-southwest and four roughly east-west, ranging from 15 to 70m long, with some pits shared between rows. Such alignments are rare across Wales, and most of those known are in Powys. The function of these alignments is unknown, but within Britain they tend to occur alongside other monumental features such as cursus, palisade enclosures or henges, which could indicate a ritual meaning.



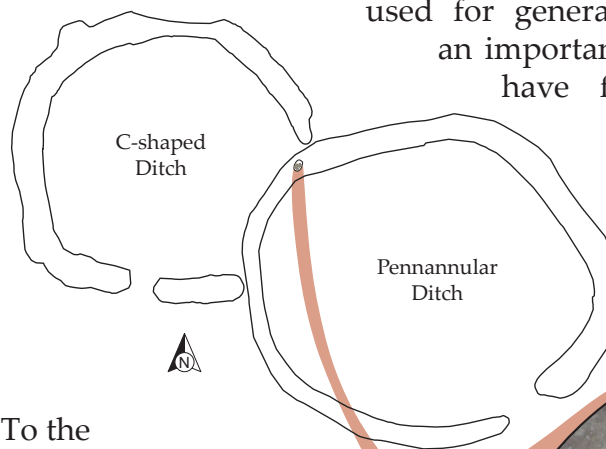
Artistic reconstruction of Neolithic pit alignments

Neolithic pits in SMR19



Two of the pits from the alignments were cut by a later large penannular ditch (a circular ditch with a gap in one side). The fills within the ditch contained pottery from the Middle to Late Bronze Age, and a Late Bronze Age crouched burial was found at the base of the ditch within the northwest quadrant. The bedrock exposed at the sides and base of the ditch showed weathering indicating the ditch could have been open and maintained for some time. The enclosure formed by the ditch was 36m wide with a large entrance to the southeast. Its function is unknown,

however given that it appears to have been used for generations this was likely an important structure and could have formed part of the ceremonial landscape.

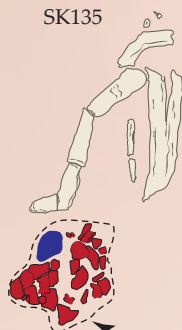


SK392
1016-896 cal BC

To the immediate northwest of this enclosure was a further C-shaped ditch which appeared to attach on to it. This had a narrow entrance to its south side and a low internal mound. This ditch and the mound would later be re-used in the early medieval period as a cemetery. The function of this ditch remains unclear due to the disturbance by the cemetery.

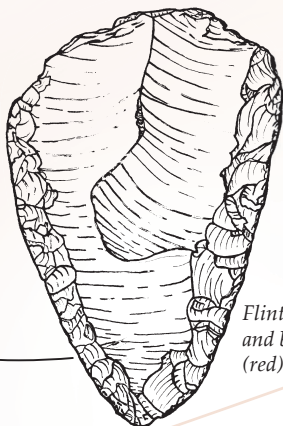


SK135



Plan of Early Bronze Age burial, lower limbs are all that remain

SMR19 also contained an Early Bronze Age beaker burial (SK135). This person was buried in a crouched position with an Early Bronze Age beaker alongside cremated human bone and a flint knife.



Flint knife (blue) and beaker sherds (red)



A cluster of pits in the west of SMR19 included three which contained cremated human remains dated to the Middle Bronze Age.

An isolated pit in the same area also contained a Middle Bronze Age cremation along with a rare gold penannular hair ring and a unique wooden comb, likely the earliest from Britain.



Wooden comb in pit with cremation



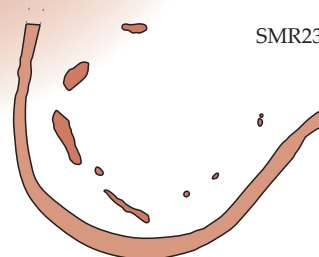
0 0.5 cm

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The area also appeared to have been settled during this period.

A Middle Bronze Age ring gully surrounding a circle of pits and postholes formed a roundhouse in SMR23.

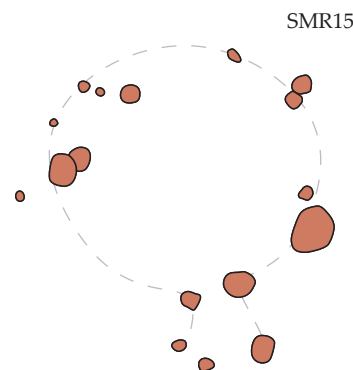


SMR23

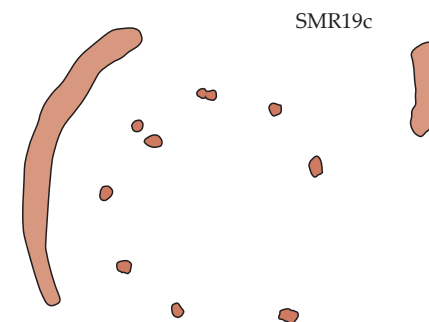


Bronze Age food vessels in SMR19, photographed prior to excavation

Another ring of postholes in SMR15 formed a Late Bronze Age roundhouse with a porch entrance to the southeast. This building had been destroyed by fire. A third roundhouse in SMR19c could only be dated to the prehistoric period.



SMR15



SMR19c

0 5 m

In SMR19, two smaller enclosures could have had some domestic use, however there was little evidence remaining to indicate their function.

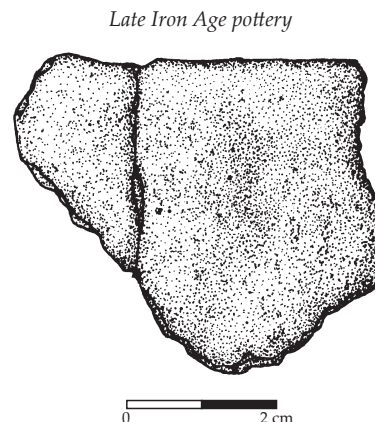
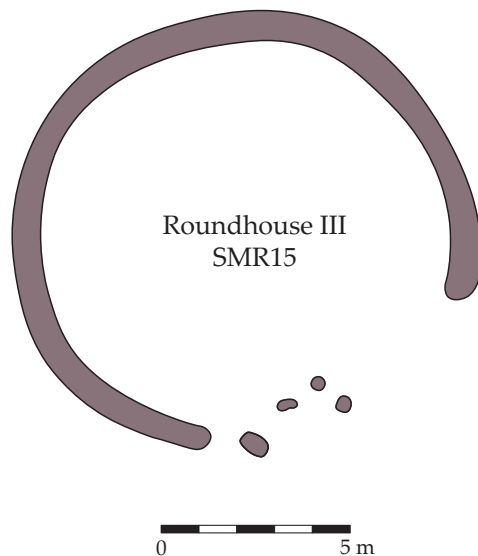
Lastly, the western side of a rectangular possible livestock enclosure dated to the Early to Middle Bronze Age was found in SMR7.

The Iron Age

Settlement, Burial and Agriculture

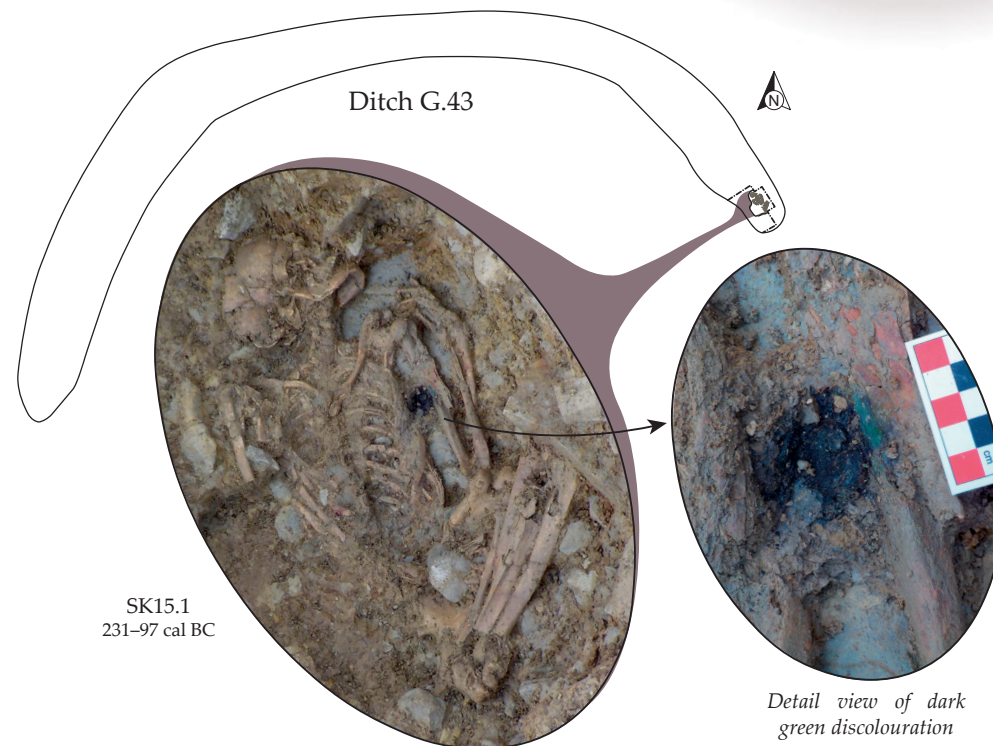
The Iron Age activity at Five Mile Lane was concentrated in three main areas SMR15, SMR16, and SMR19c. The archaeological remains include a range of roundhouses, pits, ditches, and gullies that represent domestic activity and settlement of a small agricultural community.

Within area SMR15 the Late Bronze Age settlement may have continued into the Early Iron Age period and contemporary activity was certainly present by the Middle Iron Age.

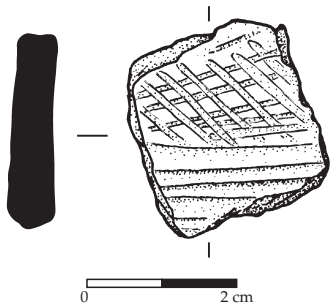


A large curvilinear ditch contained a burial in its eastern end which was radiocarbon dated to the Middle Iron Age.

The ditch contained pottery traditionally dated to the Late Iron Age, however this pottery has elsewhere been associated with deposits which have been radiocarbon dated to c.200 BC, placing it within the latter half of the Middle Iron Age.

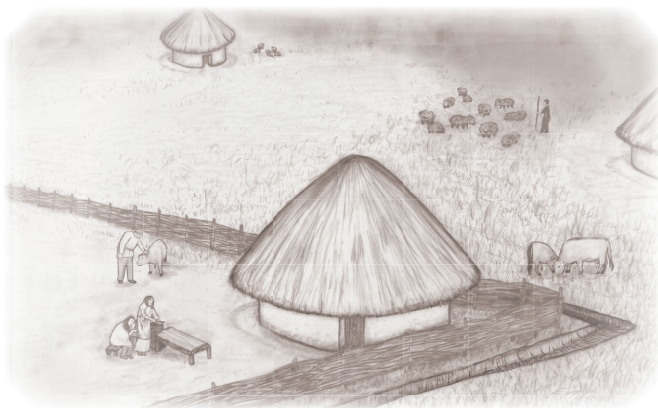


Late Iron Age pottery



The ring-gully of Roundhouse III had a south-east entrance and can be stratigraphically dated to either the Middle Iron Age or earlier by association with a large curvilinear ditch. Flint excavated from the ring-gully and faunal bone from the post-holes may represent occupational debris.

Artistic reconstruction of Iron Age roundhouses, SMR15



The female skeleton within the ditch was aged between 25-35 years old. A circular area of dark green discoloration was located next to the chest area, which could be the degraded remains of a brooch.



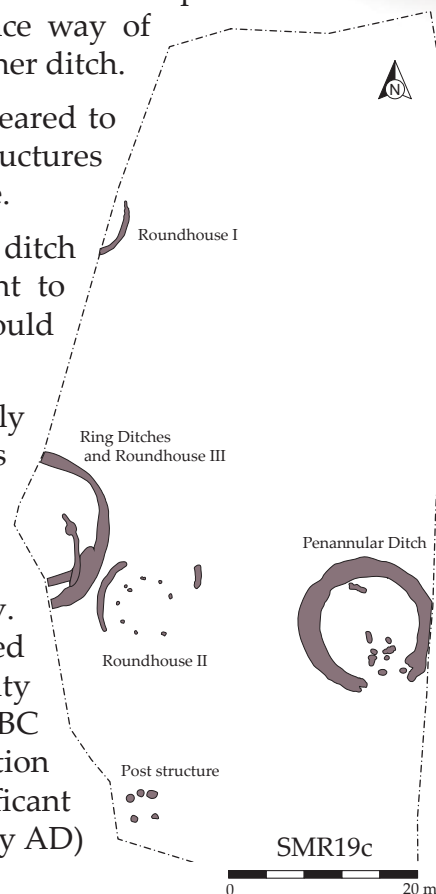
Settlement in this area continued into the Late Iron Age where there were at least two phases of occupation.

Features included roundhouses, enclosure ditches, a penannular ditch, a ring ditch, two possible grain stores, and a structure of three broadly concentric but partly overlapping ring ditches. This structure had an entranceway to the south with two pits within the entrance way of the inner ditch.

Many of the roundhouse gullies appeared to have been re-cut showing that these structures were maintained during their lifetime.

The penannular ditch and ring ditch in the centre of the site are thought to be agricultural in function and could represent stock enclosures.

In area SMR19C were three, probably contemporary, Iron Age roundhouses along with various ring ditches, a five-post structure, and a penannular ditch. The upper fills of the penannular ditch produced Late Iron Age pottery. The datable material recovered showed that the majority of occupation or activity took place between the 2nd century BC and the 1st century AD, with occupation definitely ceasing prior to any significant Romanisation (i.e. the later 1st century AD) as no Roman finds were present.



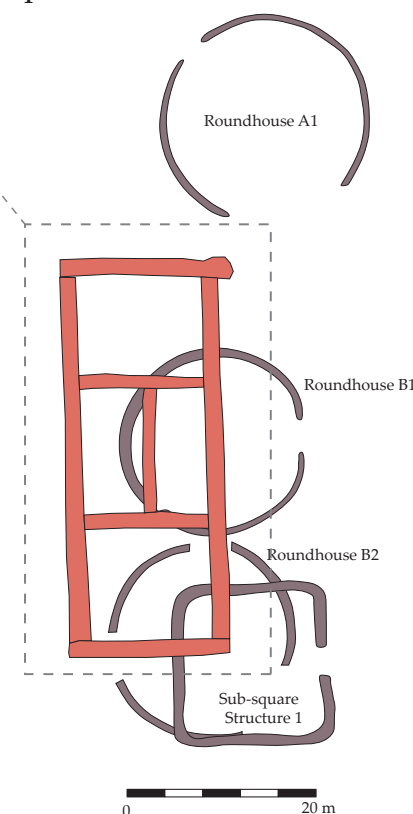
Aerial photo showing the remains of Iron Age Roundhouses and the later west range building of Whitton Villa

This would have required a considerable amount of labour to construct, especially considering that the majority of it was cut into the limestone bedrock.

The settlement here was probably established towards the end of the Iron Age, probably mid-late 1st century BC, with the large enclosure ditch being constructed at approximately the same time and later formed the basis for Whitton Villa.

The area defined by the later villa at Whitton was previously excavated in the 1960s and it was demonstrated that there were several phases of Iron Age occupation defined by timber roundhouses set within an enclosure.

A portion of this previous excavation was re-excavated as part of this project, including three roundhouses, a sub-square structure and parts of the surrounding ditch. This ditch measured c.70m by 70m, up to c.8m wide and up to 3m deep.



The Roman Period

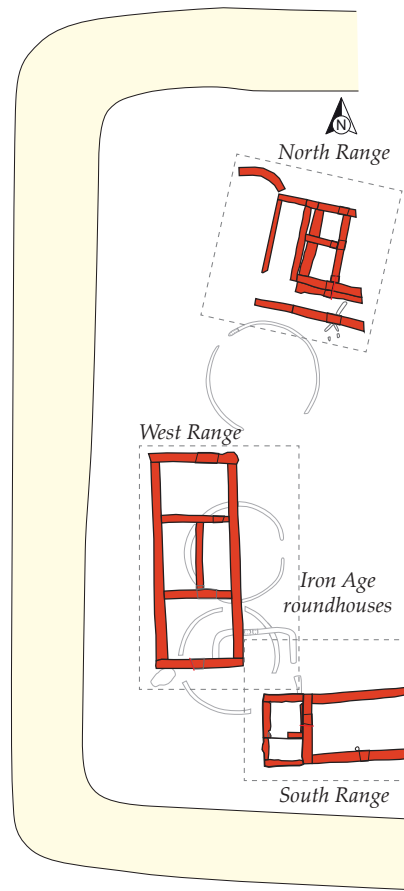
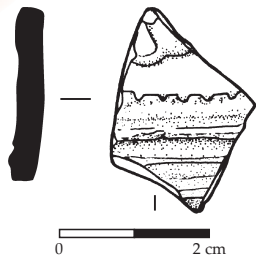
Farming, more burial, and Administration

The project presented the opportunity to re-investigate previous excavations of Whitton Villa (SMR16). The villa was excavated in the late 1960s and until the current investigations it was believed that the site had been destroyed. However, the foundations and low standing walls of Roman buildings were discovered to be intact, further details of which can be found within the first Five Mile Lane e-book.

In summary, three Roman buildings were re-excavated, referred to as the South, West and North Ranges.

The South Range was the earliest of the three, and consisted of a roughly east-west aligned rectangular stone structure with a sunken annex to the west end.

Samian pottery, South Range

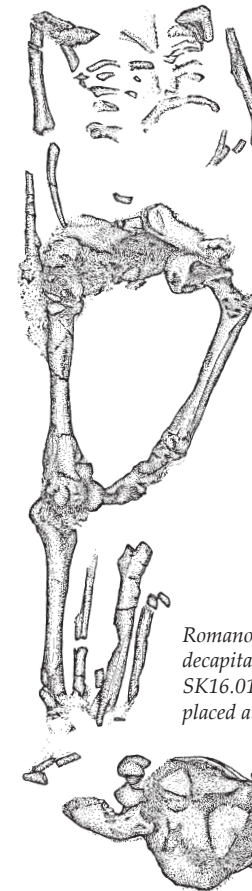


Aerial photograph of North Range

The West Range was a north-south orientated rectangular building with internal subdivisions creating three roughly evenly sized rooms.

The North Range was a two-phase building again with a sunken annex to the west. It was constructed in the final phases of occupation of the site, at the end of the 3rd century AD and occupied into and during the 4th century.

These buildings were likely occupied by a local elite that Romanised during the first century of Roman rule. The occupants of the villa maintained a high status in Roman society and may well have had an administrative role in the late Roman period as indicated by grave goods associated within one of the burials detailed on page 26.

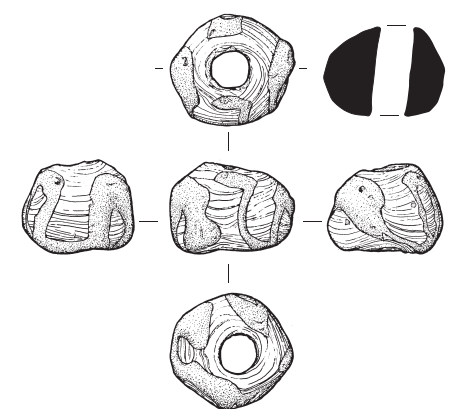


Romano-British decapitated burial, SK16.01 (with the head placed at the feet)

Part of a jet hair pin



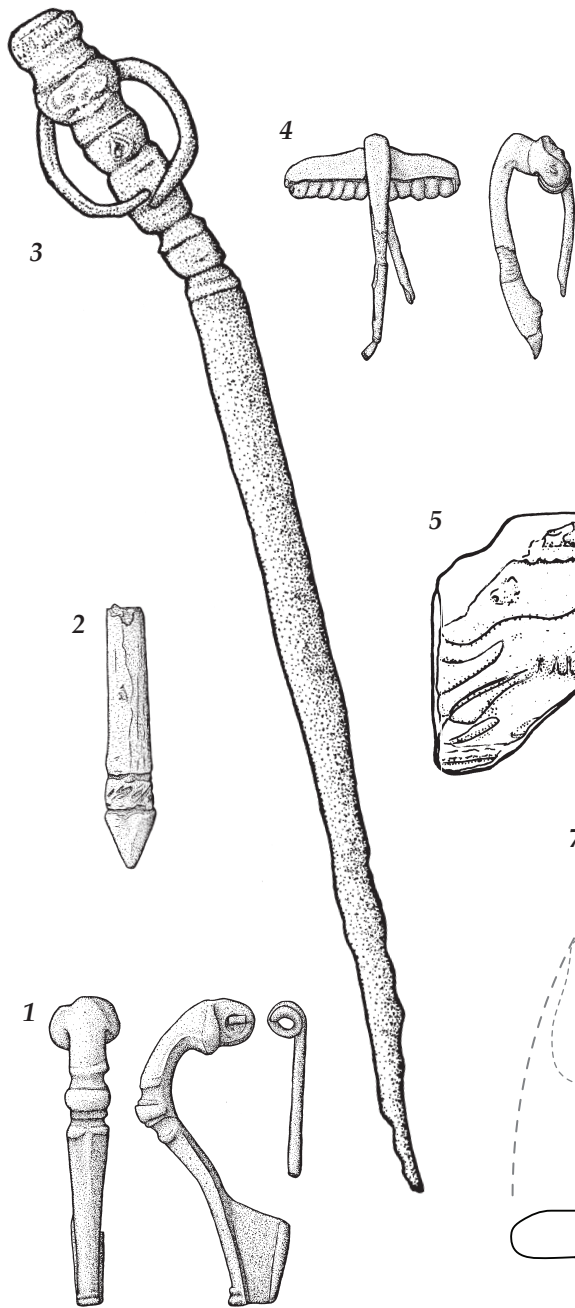
Decorated glass bead



0 2 cm



Aerial photo of South Range



Roman artefacts from Five Mile Lane:
 1) copper alloy Trumpet style brooch;
 2) end of a broken pin, carved from animal bone; 3) copper alloy pin with unique ring through the decorated head; 4) copper alloy bow brooch; 5) sherd of Samian style pottery with animal decoration, probably a lioness; 6) Faience melon bead; 7) decorated rim sherd of Samian bowl.

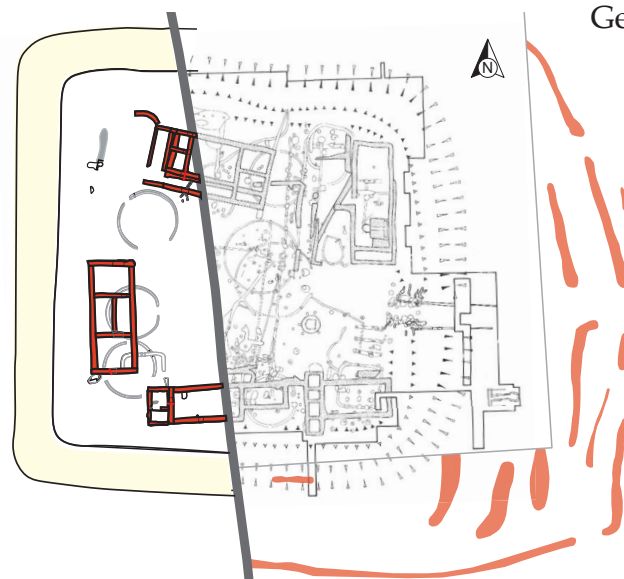
The villa was enclosed by an impressive large inner ditch which originated in the Late Iron Age and was maintained into the Roman period. A second much smaller outer ditch was also found to surround the site.



The defensive ditch around Whitton Villa cut into the natural bedrock

This may be contemporary with the inner ditch and was maintained in the Roman period, with both ditches likely to have had a defensive role.

Environmental data from the outer ditch suggests that only windblown material was present and the area immediately either side was not used for agriculture or livestock, supporting the idea of an open defensive ground surrounding the main habitation.



Geophysical survey results show that there were multiple ditches between the inner ditch and the outer ditch on the eastern side, possibly forming a monumental defensive façade fronting the main access to the villa, but this area fell outside the excavation.

Whitton Villa, current excavations on the left and previous excavations and geophysical survey results on the right, arrow to main entrance (after Jarrett and Wrathmell 1981, and GSB Prospection 2010)



Romano-British grain dryer in SMR16 during excavation

The current excavations extended north and south beyond the previously excavated area of the villa into the surrounding land (SMR15, SMR16 and SMR17). Here the land had been divided into small fields and enclosures with possible trackways or access routes left between them.

The fields systems are divided into an inner field system and outer field system with a blank space between. Some areas appear to have been associated with particular activities, with one such area being used for processing grain and another for metal working.

There was an expansion of the fields and enclosures from the 3rd century onwards, which would indicate a growing economy and economic status in the area.

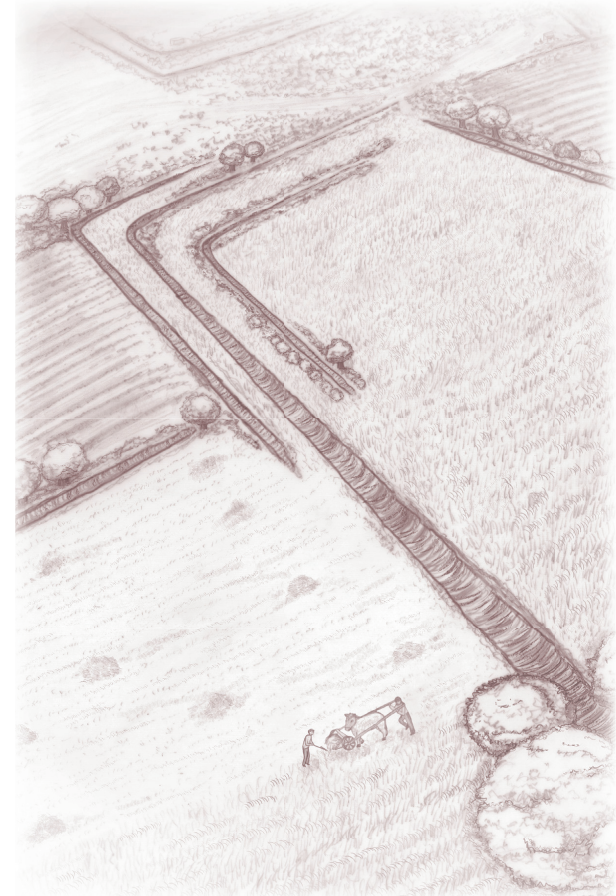
Profile of a Roman ditch



The environmental evidence for the 3rd and 4th centuries at Whitton Villa indicates that the enclosures closest to the main habitation area were likely used for keeping stock.

Beyond this there was a working zone which included crop processing and metal working. Further out from the settlement, different fields were used as arable land, pasture and stock enclosures.

Interestingly, only three hobnails were recovered from the ditch fills within the northern field systems.



Artistic reconstruction of Roman field system

This is a low number in comparison with the southern field systems which environmental evidence suggest were used for growing crops. This is likely because the northern fields were instead used for holding animals which is considered less labour intensive.

Surviving hobnails above makes it possible to see the outline of SK16.03's boots (pg. 26)

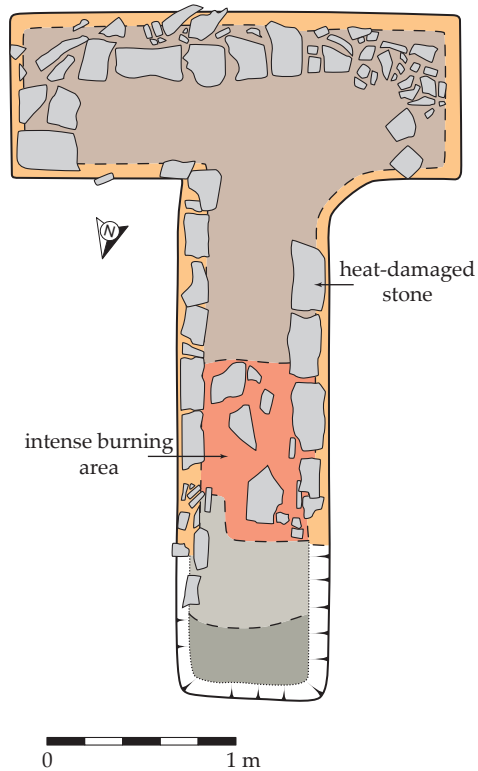


Grain Drying Kiln (SMR16, G045)

Evidence for crop processing at Whitton took the form of a 'T' shaped grain drying kiln. This had heat damage towards one end of it keeping the flames away from the grain at the other.

A study of samples of charred grain from the drying kiln showed a high concentration of hulled wheat typical of the Roman period.

Weeds were also present and likely derived from the use of crop processing waste as fuel. A small number of grains showed signs of sprouting which could indicate problems in harvesting or storage, or perhaps that the kiln could also have been used for malting grains.



Plan drawing of 'T' shaped kiln

Excavation of 'T' shaped kiln



Metal Working Area (SMR 15/C)

The evidence for metalworking was identified to the south of Whitton Villa, these were recorded as Areas A, B, and C. All were located in the area between the inner and outer field systems.

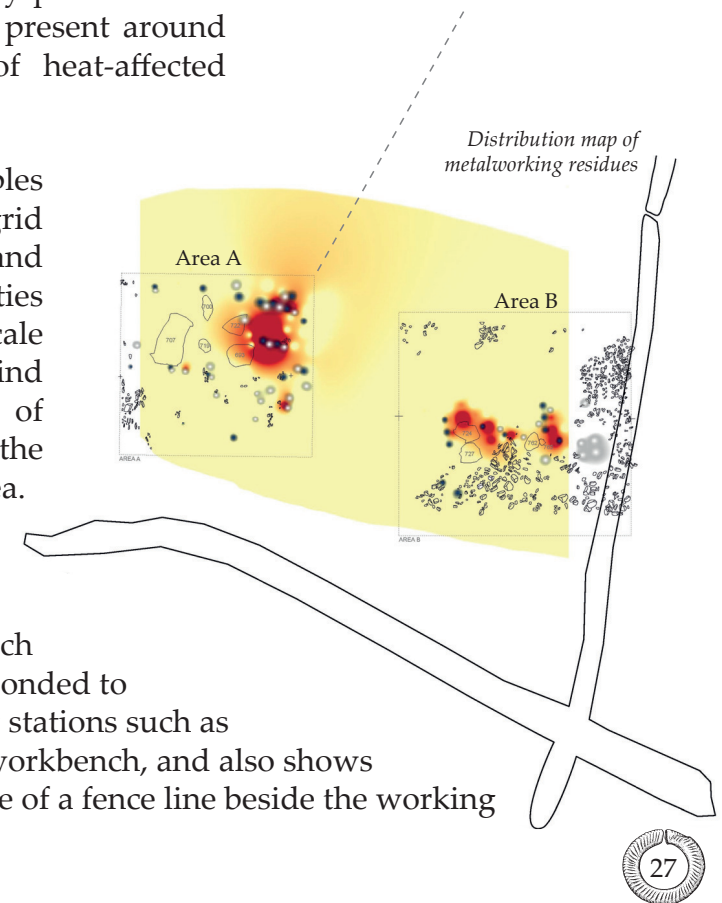
Each area was similar in layout and all were thought to have been locations of secondary smithing, with smithing pan and hammerscale (by-products of smithy working) present around a central area of heat-affected clay.

A series of samples were taken in a grid around Areas A and B, and the quantities of hammerscale measured to find any patterns of use within the metalworking area.

This revealed concentrations of hammerscale which may have corresponded to different working stations such as a forge, anvil or workbench, and also shows the likely presence of a fence line beside the working area.



Photo of Area A



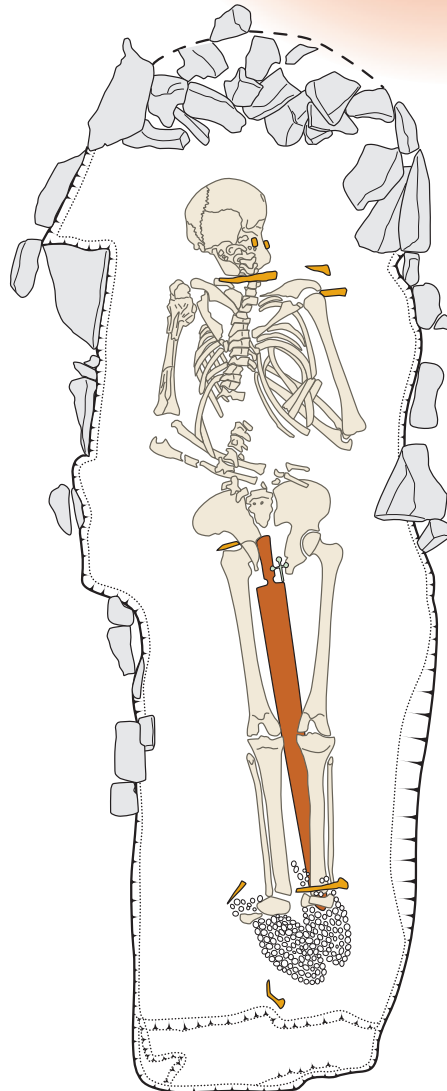
Inner Field System Burials (SMR16)

Three articulated burials and a disarticulated skull of Roman date were located within the inner field system.

One of the burials was a male aged 21 to 25 years old and was accompanied by particularly interesting grave goods including a silver crossbow brooch, an iron sword in a wooden sheath, eight large iron nails, and wearing hobnail boots.

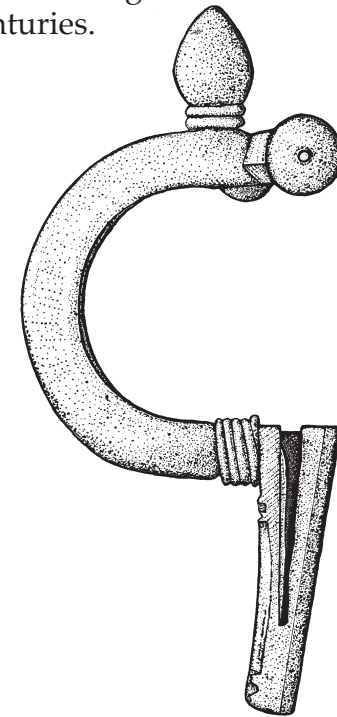
The sword was of 'Straubing/Nydam' type used by the Roman army in the 3rd and 4th centuries AD and the silver crossbow brooch was dated from AD 335 to 365.

These are indicative of Roman military regalia, with the brooch possibly denoting the wearer had an administrative role in Roman society. Radiocarbon dating placed the individual in the range of 244 to 392 AD. Isotope analysis suggested he was likely to be of non-local origin, possibly from the Welsh border region or further east in Britain.



The excavation at Five Mile Lane has expanded on the evidence for the site of Whitton Villa, showing it to be a settlement with a longer history than previously thought.

The Late Iron Age defended settlement continued in use into the Roman period with little change during the 1st and 2nd centuries.



Silver Crossbow brooch found in grave

0 2 cm

Expansion of the field systems during the 3rd and 4th centuries suggests the settlement prospered during this time.

While the occupation seems to have ended at the end of the 4th century, there are tantalising hints that it may have continued beyond this, at least for a short time.

SK16.03, Roman burial with gravegoods

Iron sword found in burial

0 8 cm

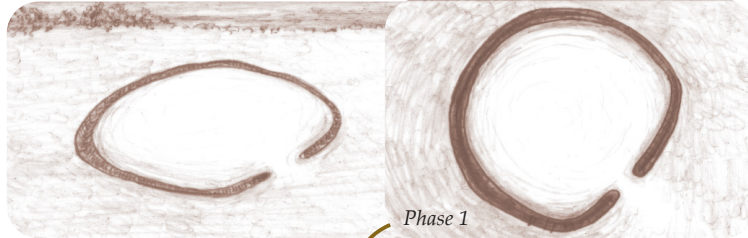
The Medieval Period

Burial and Assembly

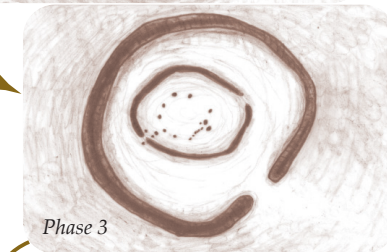
Excavation at Five Mile Lane revealed a surprising glimpse into early medieval life, spanning the period from the 5th century to the mid-13th century AD. The Early Medieval period was formative for the culture and identity of Wales but is poorly understood on a national scale, with few sites previously excavated and studied in detail.

The main focus of medieval activity was the cemetery set within an agricultural landscape of field systems (SMR19). Intriguingly, this cemetery was placed within a large circular ditch that had existed since the Bronze Age (See Phase 1 above).

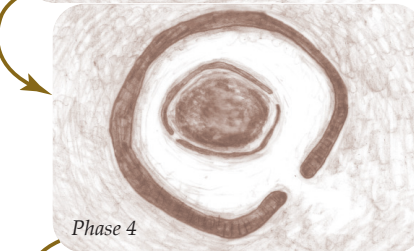
In Early Medieval Wales, prehistoric monuments such as burial mounds were often repurposed as burial sites.



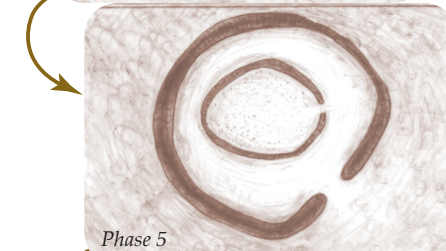
Phase 1



Phase 3



Phase 4



Phase 5



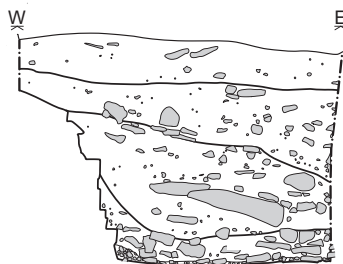
Phase 7



Phase 9

This practice was both practical and symbolic. Practically, these monuments provided convenient, recognisable, and protected locations for burials in prominent areas.

In total 378 individuals were recorded buried here; the majority were within the confines of the enclosure ditch, with 27 inhumations external to it.



Section drawing from the outer ditch, showing the many phases of construction and silting

Radiocarbon dates suggest that burial could have begun at the very end of the Roman period and continued until as late as the 13th century.

Throughout this time the cemetery was modified on at least eleven occasions, several of which are illustrated here.

Early in its use the cemetery had a central ring of wooden posts surrounded by a shallow ditch that separated it from the graves, perhaps forming a sacred space (Phase 3).



Flexed burial SK30

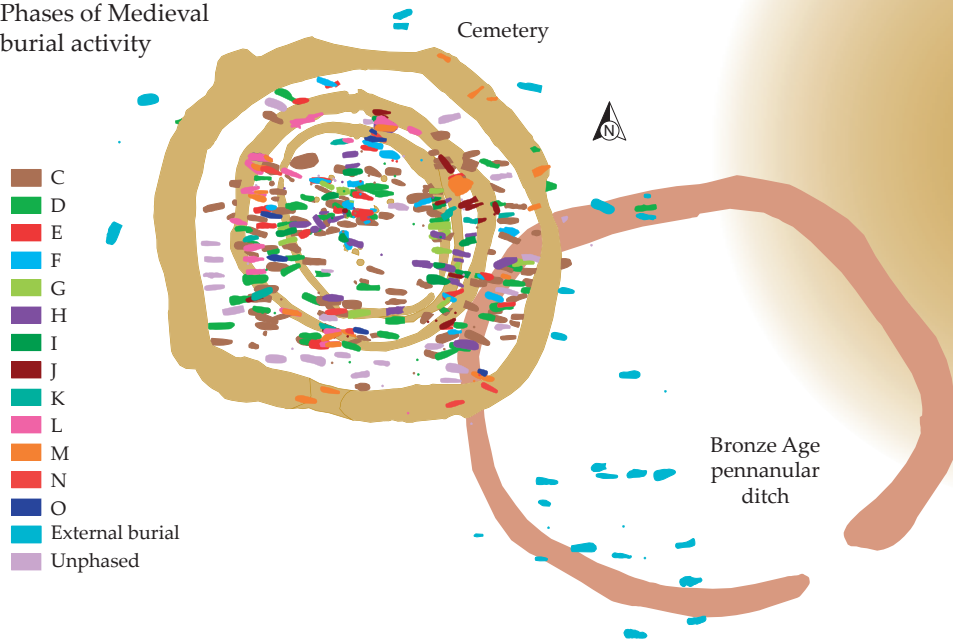
Similar post built structures have been identified at other early Christian cemeteries in Wales.

Evidence suggests that these posts were later burnt down and the central area cleared (Phase 4). The inner ditch was remodelled and then over time was left to silt up (Phase 5).

This was followed by the construction of a larger middle ditch (see Phases 7 and 9).

Artistic reconstruction of cemetery phases

Phases of Medieval burial activity



As the cemetery grew, and more graves were excavated, a large low mound (c.30m in diameter) arose within the confines of this outer ditch. The graves formed numerous clusters and irregular rows within thirteen phases of identified burial activity (illustrated as phases C to O on the plan above).

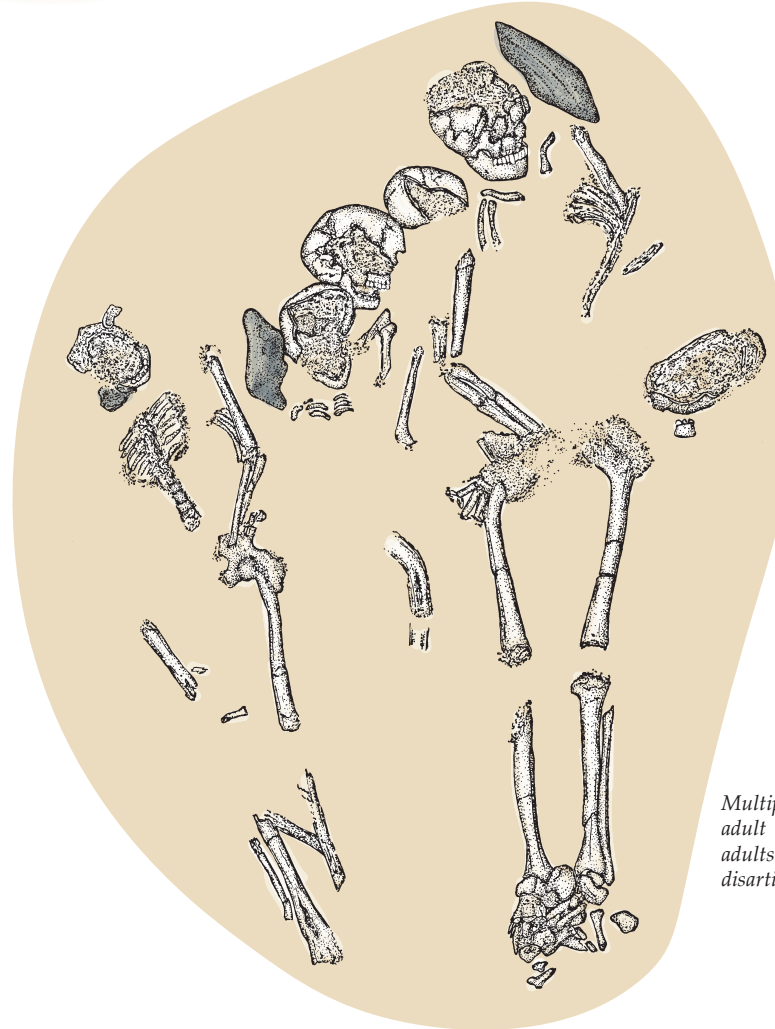
Although grave markers were not clearly evident, it is likely that the graves remained visible as low mounds for some time, enabling rows and groups to form.



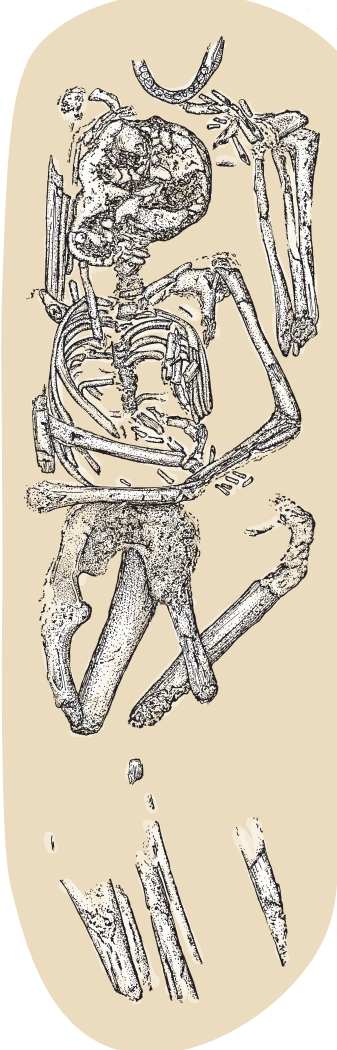
Excavation of middle ditch within the medieval cemetery

It's interesting to note that some of the graves contained multiple individuals. For example, one grave held an adolescent who was buried in the arms of an adult. This is uncommon in medieval Welsh cemeteries.

Most of the burials at Five Mile Lane seem to have been intentionally buried without grave goods. However, six burials were accompanied by natural quartz pebbles, for which similar examples can be found elsewhere in medieval graves within Wales.



Multiple burial, left to right, adult SK206, adolescent SK207, adults SK208, SK209, SK210, and disarticulated skull SK211



SK64 and SK65, an adolescent found buried in the arms of an adult



Excavation of field boundary

The area around Five Mile Lane was known for its agrarian economy during the medieval period. Settlements at this time were thought to practise mixed farming in open strip fields, with wheat being a documented crop, and livestock reared in smaller hamlets. Evidence of field systems dating to the medieval period were mainly located within SMR19, with isolated field boundaries within SMR7 and SMR15.

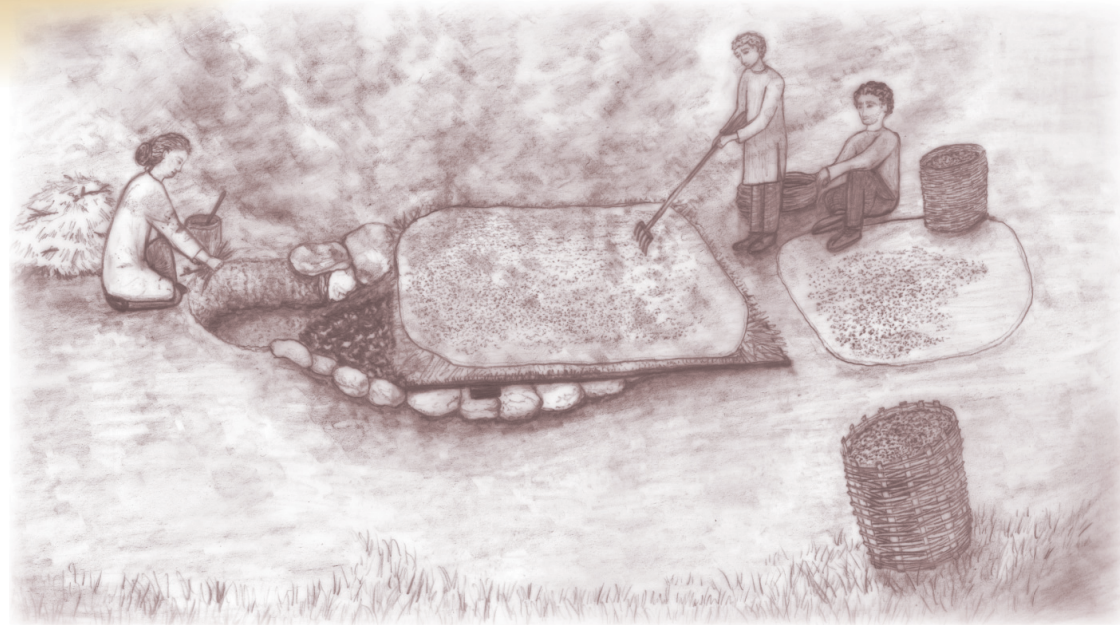
Within these fields were numerous grain-drying kilns that represent the largest concentration of such kilns in Wales or England, with at least 21 in SMR19, one in SMR16 within the ruins of Whitton Villa, and four in SMR7. Dating evidence indicates these grain-drying kilns were in use at the same time as the cemetery.



Grain dryer that was cut into bedrock, found in SMR19

The high concentration of the kilns in SMR19 is suggestive of a medieval assembly site. This is a place of open-air communal gathering that would have been central to governance and community action at this time.

Such sites would be chosen to perform socially important activities such as seasonal festivals, fairs, and law courts, as well as a likely food rent (tribute) collection centre. Being on a rise in the landscape, near a local cross-roads and spring, Five Mile Lane is well placed for such an assembly.



Artistic reconstruction of grain drying kiln, with placed stones

Analysis of medieval texts reveals that during its use the cemetery would have been within an estate attached to the monastic foundation at Llancarfan, which was founded by St Cadog in the 6th century. This was one of the most important Early Medieval monasteries in South Wales and was documented in historic sources. These sources relate how Cadog founded a cemetery on a raised heap of earth within a sacred space to the honour of God, leaving the tantalising possibility that this might be a reference to Five Mile Lane.

Specialist Analysis

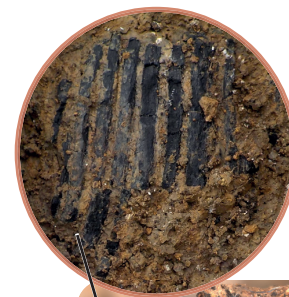
The People of the Vale



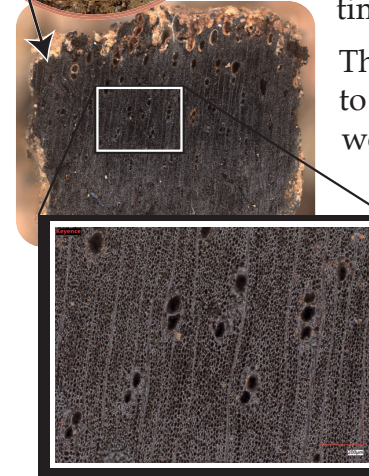
The excavation of Five Mile Lane has provided insights into the burial practices of the South Wales region throughout the Bronze Age, Iron Age, Roman, and medieval periods. These discoveries offer a unique perspective on the population and funerary traditions of the community that once inhabited this area.

The Early Bronze Age is represented by the burial of SK135, who was a poorly preserved adult with only the lower limbs surviving (see p.12). The individual was buried in a flat grave with various grave goods, including fragments of an Early Bronze Age beaker, a flint knife, and a small amount of cremated bone. The inclusion of cremated material alongside the skeleton and beaker may have been a deliberate act, reflecting the Early Bronze Age practice of circulating and exchanging small amounts of cremated human bone. This custom was possibly intended to strengthen and nurture social relationships and kinship connections within communities.

Image: Artistic interpretation of a Bronze Age cremation ceremony with funeral pyre (Artist: Jonathan Millar)



The Middle Bronze Age burials consist of both urned and un-urned cremation deposits, with evidence of well-developed cremation techniques. Almost all (98.6%) of the burnt bone deposits showed signs of being exposed to high temperatures for a long time.

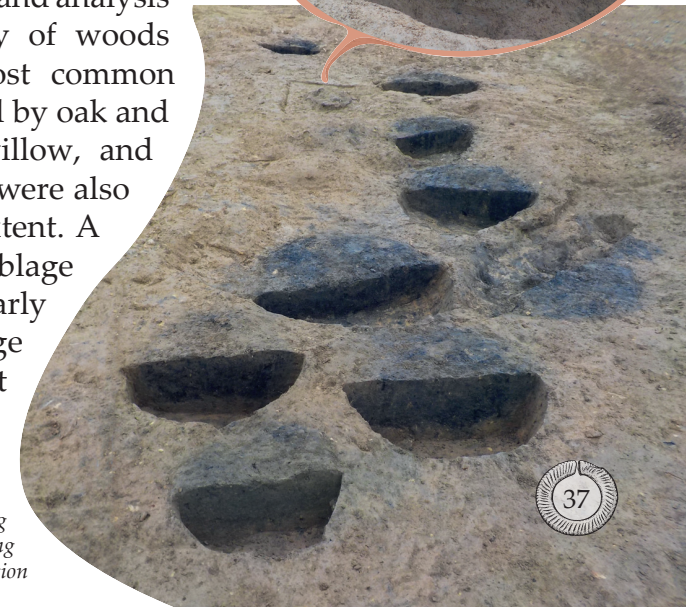


This suggests that people during the Early to Middle Bronze Age at Five Mile Lane were skilled at building and maintaining pyres, using the right amount of fuel and ensuring sufficient oxygen for the fire, resulting in consistently high and even temperatures. The bones also showed signs of being burned with flesh still attached, suggesting that the bodies were cremated shortly after death.

Wood analysis of wooden comb found in cremation <123>, this artefact preserved because it was charred but not on the pyre, this is a very rare object

Although no pyre structures were found on-site, charcoal was associated with the cremated bone and analysis revealed that a variety of woods were utilised. The most common wood was ash, followed by oak and elder. Hazel, poplar/willow, and wood from apple trees were also used, but to a lesser extent. A similar charcoal assemblage was found at an Early to Middle Bronze Age cremation cemetery at Love Lodge Farm in Carmarthenshire.

Cluster of Bronze Age pits containing cremations in SMR19, and urn during excavation



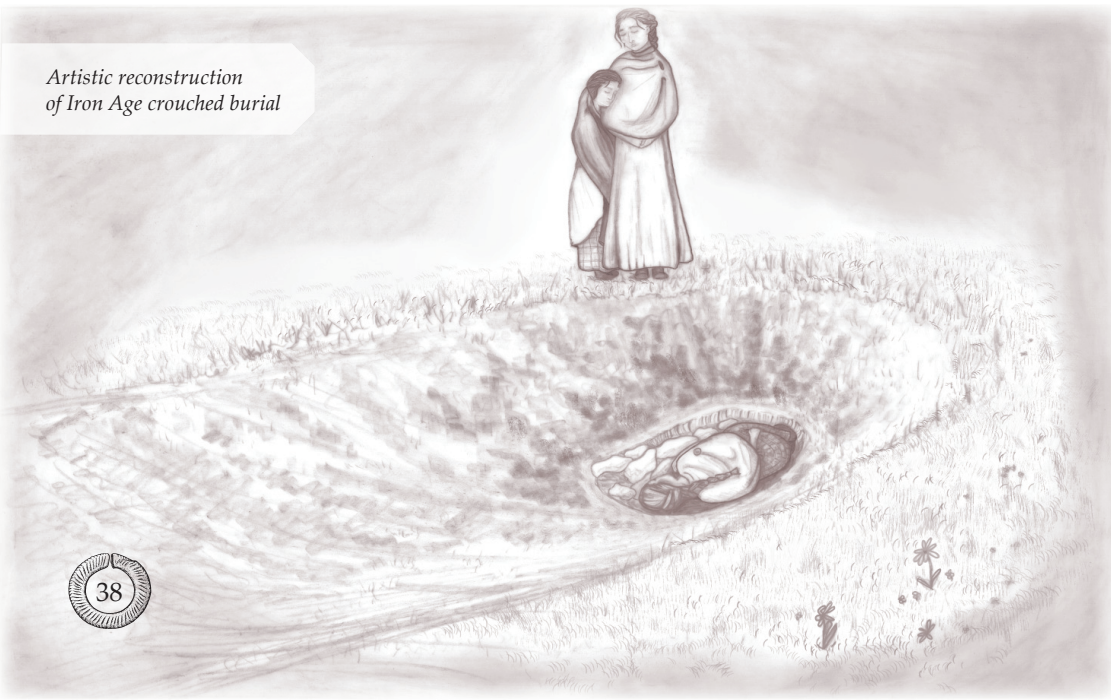
Analysis of the Late Bronze Age individual SK392, a middle-aged female showed signs of malnutrition and childhood diseases, as well as a slight infection on her right wrist. Carbon and nitrogen isotope analyses indicated her diet was mostly from local terrestrial sources, while high strontium and sulphur isotope values suggest she was from further inland in Britain.

An Iron Age crouched burial of a middle-aged female was discovered near the Iron Age enclosure in SMR15. During dental and skeletal analysis, extensive dental issues, signs of childhood stress, and possible shoulder trauma were observed. She had two round areas of bone loss near the joint of her right big toe and one on her left big toe.

These signs suggest she likely suffered from bunions (hallux valgus). Isotope analysis revealed prolonged stress, which could be due to dietary deficiencies. Her isotope values also suggest that she was not of local origin, but unlikely to be from outside of Britain.



Artistic reconstruction of Iron Age crouched burial



During the Roman period four cremation and four inhumation burials were present. Four un-urned cremation burials were found, with one possibly contained within a wooden box. All remains were from adults.



Top of the skull of a Roman individual from cremation deposit S54, the range of colour shows the bone was exposed various temperatures

What's intriguing is that the bones from the Roman cremations weren't fully burnt, hinting at a shift in attitudes regarding complete combustion of the body. This shift could be linked to factors like fuel scarcity or alterations in cremation techniques, diverging from earlier periods when complete burning of the skeleton was more common.

Some cremation burials contained items known as pyre goods, which were placed alongside the deceased on the funeral pyre and then gathered and interred with the remains.



Worked animal bone in-lays, possibly used as decoration of a box that accompanied the body on the pyre or were part of a funerary 'bed'

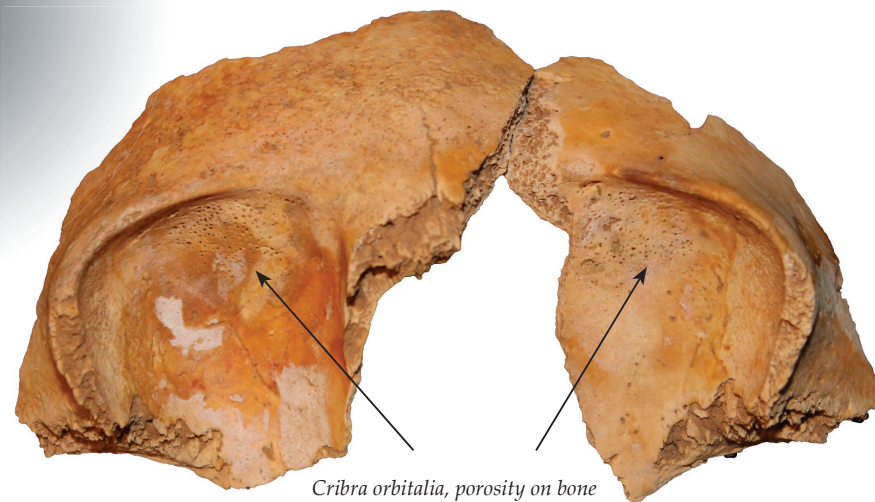
Interestingly, all four Roman inhumations were in a prone position (face down). The significance of this practice is not entirely clear. Preserved wood and iron nails in some of the graves indicate the use of wooden coffins.

One particularly significant burial involved a decapitated individual, representing the first reported evidence of decapitation burial in Roman Wales (pg. 19).

Within one cremation burial, worked animal bone fragments were found. These fragments might have served as decorative inlays or veneers of a box accompanying the body on the pyre, or remnants from a funerary bier (a stand or flat wooden board on which the body was placed). Additionally, this burial included burnt chicken remains, pottery, and iron objects.



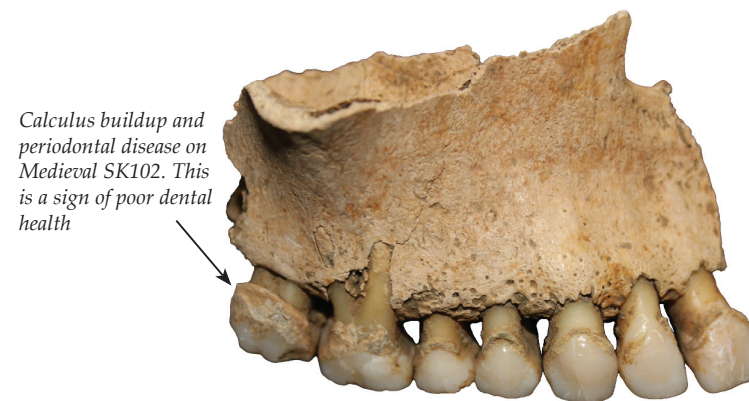
Roman prone burial, SK16.04



Cribralia orbitalia, porosity on bone of the eye sockets, was present on Medieval SK224. This is a sign of vitamin deficiencies and poor health

Notably, only one male burial had grave goods, including a mid 4th century silver crossbow brooch, an iron sword in a wooden sheath, and hobnail shoes indicating a higher status individual (pg. 26-27).

The analysis of the Roman human remains also provided information about the health and lifestyle of the individuals. Pathological conditions, such as infections, degenerative joint disease, dental issues, and childhood stress were observed in several burials. Isotope analysis and radiocarbon dating indicated that while some individuals were of local origin others may have come from neighbouring regions or further east in Britain.



Calculus buildup and periodontal disease on Medieval SK102. This is a sign of poor dental health



Child SK85, showing curved leg bones indicating rickets, an extreme vitamin deficiency



Fractured arm bone, in process of healing, Medieval SK132

The analysis of the 378 medieval skeletal remains provided insights into their lives, including dietary habits and health conditions.

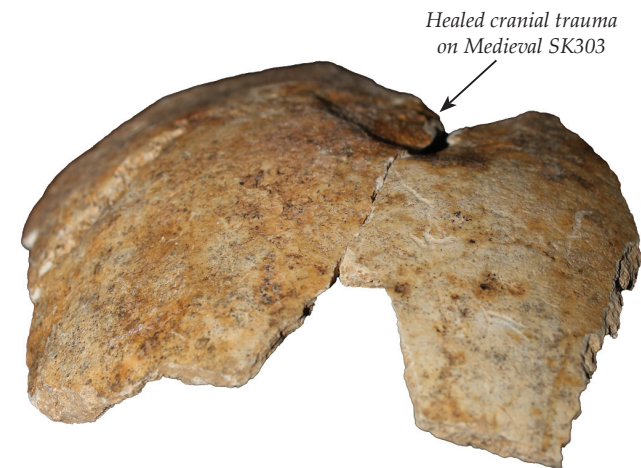
Children and adolescents had high mortality rates, and individuals aged 18–25 years had the highest mortality rate among adults. Females were more likely to die at younger ages, possibly due to risks associated with pregnancy and childbirth.

The population at Five Mile Lane had shorter stature compared to the average for the period, suggesting differences in nutrition or susceptibility to disease. Previous studies suggest that the population in medieval rural Wales relied heavily on cereals, dairy, and meat.

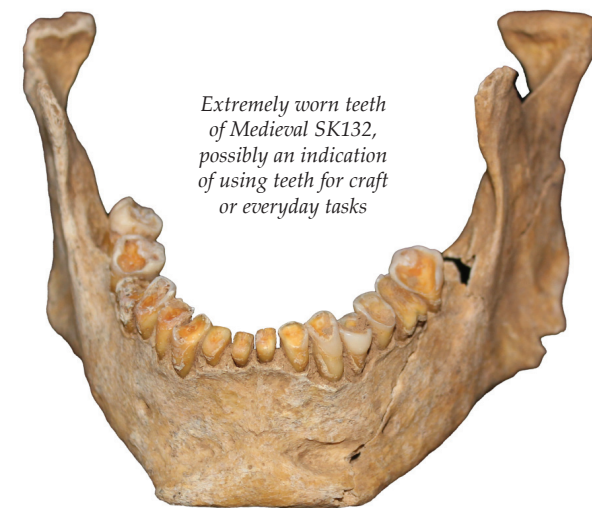
Dental and skeletal evidence suggests that their diet was rich in carbohydrates and sugars, leading to a high prevalence of dental cavities and other health issues.

Skeletal indicators also pointed to traumatic lesions, degenerative joint changes, and fractures, likely resulting from accidents or strains associated with daily activities.

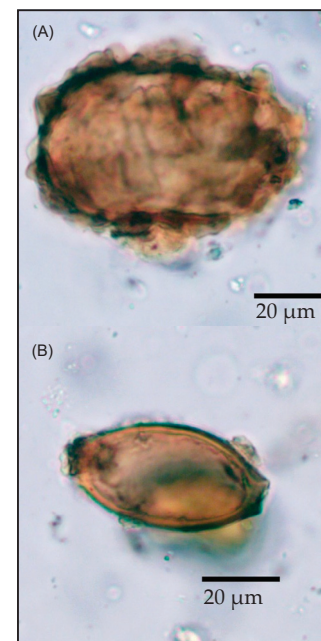
The prevalence of cranial traumas and joint diseases further suggests health challenges and potential lifestyle-related factors.



Healed cranial trauma on Medieval SK303



Extremely worn teeth of Medieval SK132, possibly an indication of using teeth for craft or everyday tasks



(A) Roundworm (*A. lumbricoides*) egg (B) Whipworm (*T. trichiura*) egg, found in soil around pelvis of SK247

People in this period faced a high risk of infection due to unsanitary living conditions and inadequate nutrition. Parasitological analysis revealed that one individual had an infection of roundworm and whipworm.



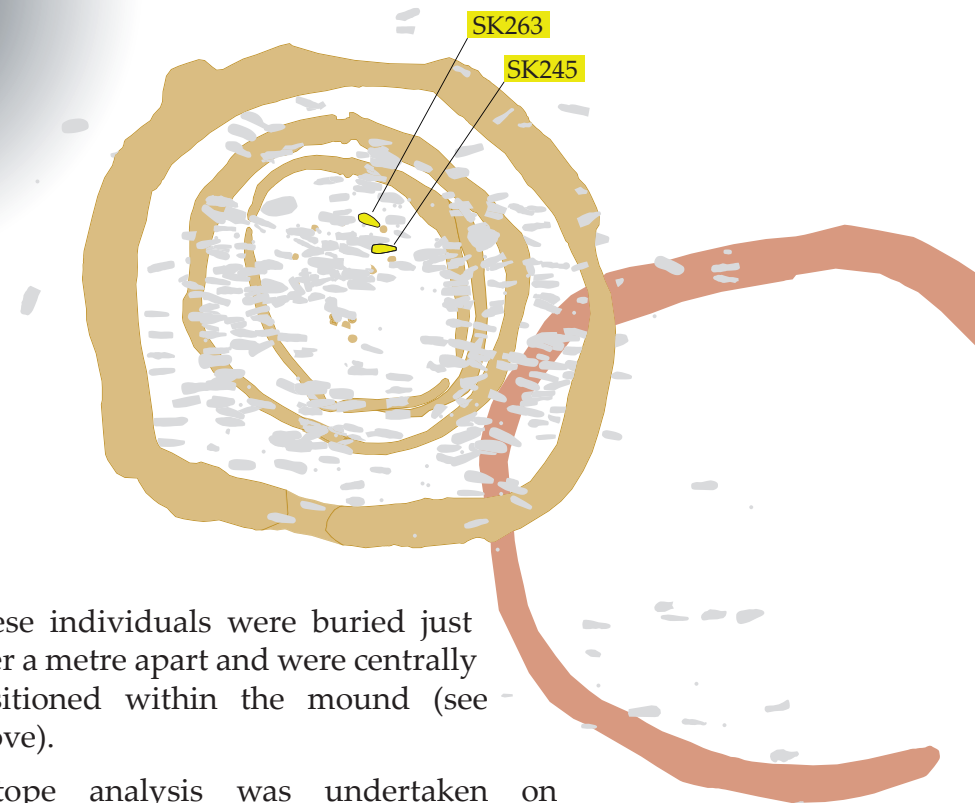
Illustration of SK369, extremely thin bones is a sign of very little movement during life

Furthermore, DNA analysis of an additional 20 individuals revealed that two individuals (SK245 and SK263) share a third-degree genetic relationship, suggesting a potential paternal great-grandparent/great-grandchild relationship.

An older adolescent from Five Mile Lane showed signs of quadriparesis, a condition that causes muscle weakness or partial paralysis in all four limbs.

This condition may result from spinal cord injury, brainstem disorders, nerve damage, or certain neurological diseases. The individual (SK369), displayed signs of wasting in the long bones, suggesting a lack of movement. This condition would have restricted the individual's movement and may have required assistance to carry out day-to-day tasks. This burial highlights possible positive social attitudes towards disability.

Further analysis was conducted on the Five Mile Lane medieval burials; the teeth of 102 individuals were measured to determine biological distance. The study revealed some genetically similar individuals were buried nearby, while others were placed farther apart. This suggests that family connections influenced but did not exclusively determine burial locations.



These individuals were buried just over a metre apart and were centrally positioned within the mound (see above).

Isotope analysis was undertaken on 60 individuals. The results suggested 35% probably originated from outside the local area, from other parts of Britain, with 7% of individuals originating from either Ireland or continental Europe.

Overall, the osteological analysis provides valuable insights into the lives, health, and societal dynamics of the Early Medieval population at Five Mile Lane.



Excavation of SK224, an individual with vitamin deficiencies and poor health

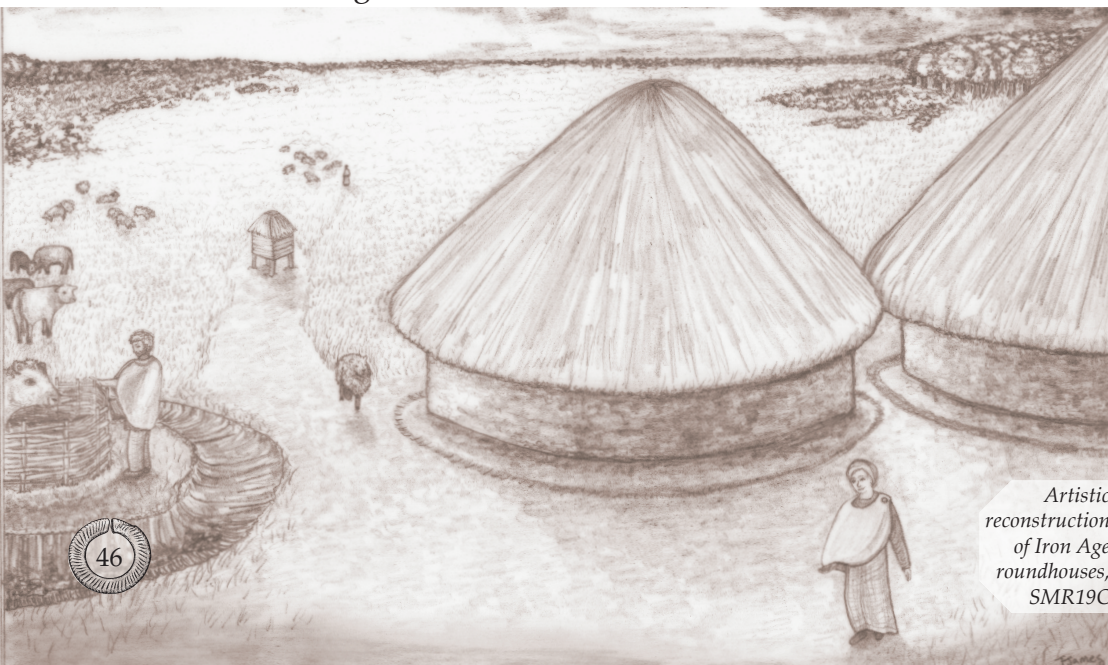
Subsistence and Agricultural: Changes through Time

The faunal bone from Five Mile Lane provides insights into subsistence and animal husbandry in past communities, revealing shifts in land use and animal management for food and other purposes, despite challenges like small datasets and preservation issues.

The data suggests small prehistoric communities initially raised animals primarily for their meat. Faunal analysis of food refuse from the Bronze Age indicates cattle formed an important component of the diet.

During the Iron Age the main animals being kept or consumed were cattle and sheep/goat with small numbers of pigs, horse and roe deer. Most of the domesticated animals were mature at death, which tells us that they were likely used for traction, such as pulling ploughs, or their secondary products like milk or wool.

The age of the domesticated animals also suggests that very few animals were being reared here, and they may have been brought in from other areas, such as the Iron Age seasonal camp at Goldcliff on the Severn Levels, where it is believed that domesticated animals were being raised.



Artistic
reconstruction
of Iron Age
roundhouses,
SMR19C



Burial of an 8-10 year old cow, no evidence of butchery was found and it was radiocarbon dated to the Roman period

Throughout the Roman period cattle were the most common animals being kept at Five Mile Lane. Their mature age at death indicates many were used for ploughing or/and breeding, although some were also eaten, whilst the maturity of the sheep found would suggest their use for secondary products such as wool. A small number of pigs were kept for their meat, and manure may also have been collected for crop fields. The presence of baby animal bones indicates that they may have brought in special kinds of stock, such as dairying herds.

The Roman period saw specialised treatment of animals, such as complete cow burials, and the deliberate selection of a domestic chicken to accompany a cremation burial providing a glimpse into cultural practices and beliefs surrounding these animals. During the medieval period, people began to prioritise raising sheep and pigs while continuing to grow crops.



Hazelnuts and other native plants were important food sources in the Neolithic and Bronze Age
Illustration: Karen Arnold

Environmental evidence from the features suggests emmer, spelt and barley were all being consumed during the Iron Age, and that meadow hay may have been used as kindling, floor covering or mixed into daub as a building material.

The low levels of grain in our samples may suggest they were only growing crops for their own use rather than for trade. However, factors such as how grain is used and stored will affect how much plant remains are found.

Barley was consumed in the Iron Age, along with emmer and spelt. In the Roman period barley was the less important of these grains
Illustration: Otto Wilhelm Thomé

Charred plant remains further illuminate agricultural development, showing a slow start in crop production in the Neolithic until the Late Iron Age, followed by shift to large-scale cereal production in the medieval period. Hazelnuts and wild fruits were important components of the diet, particularly in earlier periods, demonstrating continued exploitation of the local shrubland as a food resource.



During the Roman occupation in SMR15, the use of locally managed ash wood increased as fuel for industrial processes. Charred plant remains showed higher cereal concentrations, mainly spelt with occasional emmer remains and low incidence of barley.

Spelt was an important crop at Five Mile Lane throughout the ages
Illustration: Otto Wilhelm Thomé

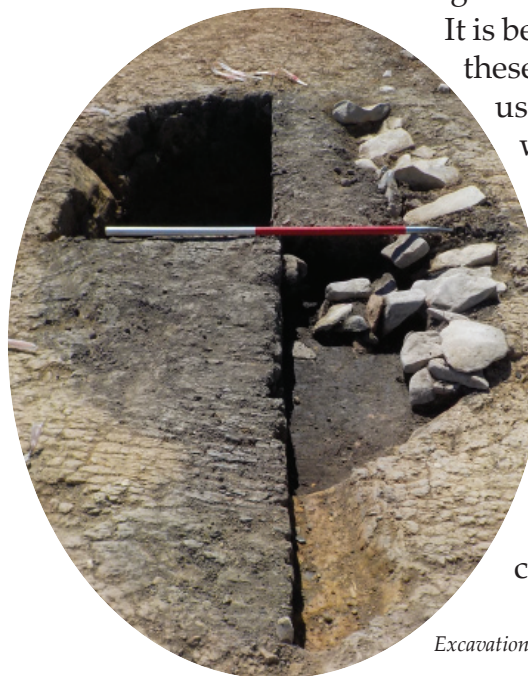


Roman millstone from SMR15

Medieval grain-drying kilns discovered in SMR7, SMR16, and SMR19 contained abundant cereal grains, particularly free-threshing wheat.

It is believed that these kilns were

used by multiple farmers as there were large variations in the wheat grains discovered. Although no evidence of malting was found, Celtic beans, peas, and flax were occasionally discovered. Darnel, a toxic weed, was common, providing insights into medieval crop health. Nearby sites revealed similar patterns, with differences in wheat types suggesting regional variations in crop cultivation.



Excavation of another grain drying kiln in SMR19



Animal bone found in the fill of a grain drying kiln in SMR19, illustrating these sites are agricultural

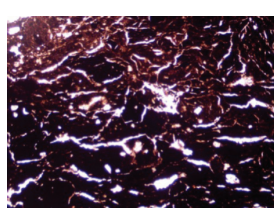
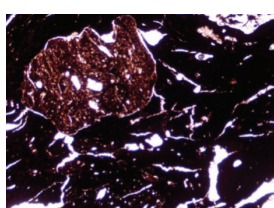
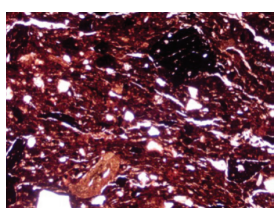
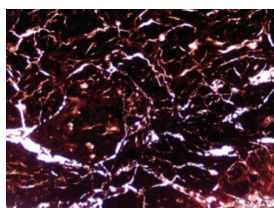
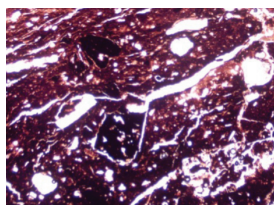
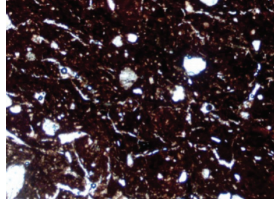
Artefact Evidence: Trade and Production

During the excavation, several artefacts were recovered that shed light on the lives of the people from the Vale. These included personal items such as combs and dress adornments as well as items used in everyday life like pottery and tools.

The lithic artefacts from Five Mile Lane span from the later Mesolithic to the Bronze Age showing evidence of on-site knapping and including flint cores, arrowheads, scrapers, and knives. The Early and Middle Bronze Age pottery recovered from SMR7 and SMR23 was unusual in that it was not associated with a burial as is normally the case.

Analysis revealed regional connections and exchange, with some vessels from the Middle Bronze Age displaying influence from southern Britain's Deverel-Rimbury tradition. The petrographic thin sections undertaken confirmed that in the later Bronze Age the pottery from Five Mile Lane saw a manufacturing shift with calcite replaced

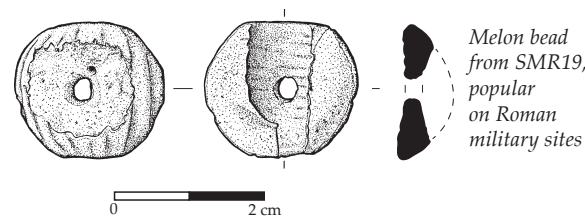
grog tempers, similar to other sites in South Wales. The most significant of the Bronze Age finds was a gold hair ring (pg.12) and the charred remains of a wooden comb that is unique in Britain found with a cremation burial.



With thin sectioning analysis, specialists identified grog and calcite within the pottery that may indicate local production

Iron Age pottery is rare in Wales, but a significant assemblage was found at Five Mile Lane. Thin sectioning on the samples of Late Iron Age pottery discovered these were potentially produced locally. The presence of other Iron Age pottery from the South Gloucestershire/North Somerset and Wiltshire area indicates imported commodities rather than ceramics, and some limited evidence of regional trade during this period.

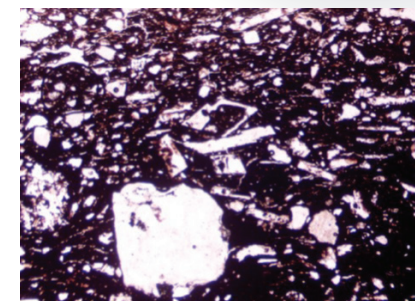
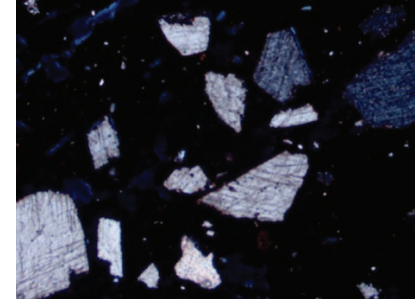
Roman pottery at Five Mile Lane was dominated by locally produced wares, however a small number of imported wares from Britain and Europe were also present. The large quantity of 4th-century pottery found during the excavations suggests the site was occupied longer than previously thought. The discovery of a male burial from the mid to late 4th century, with a sword and brooch, symbols of high office or military leadership, is unique in Wales (pg. 26-27).



Melon bead from SMR19, popular on Roman military sites

The 1965-70 excavations found ballista bolts further indicating possible military presence. Roman craftsmanship was highlighted by the decorative bone inlays found in the cremation burial at SMR15 (pg. 38). Similar inlays were discovered in Caerleon, although they were not from a funerary context.

Roman military sword and silver brooch in burial of SK16.03



More examples of thin sectioning of pottery, these show a large quantity of calcite



SMR7 Middle Bronze Age pottery sherd



SMR15 Late Bronze Age pottery sherd



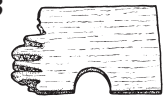
Agriculture was the main source of livelihood in Early Medieval Wales, providing necessities and supporting trade in items like leather, wool, and textiles.

2



Bone and antler combs from SMR19 are evidence of Early Medieval crafting and local trade, with designs influenced by broader European trends.

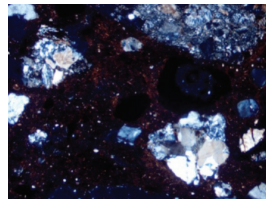
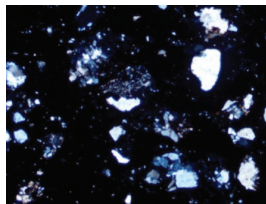
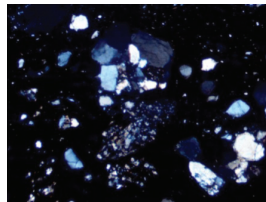
3



The antler comb, similar to those from Llangorse Crannog, Powys, reflects comb-making continuity from the 9th to 11th centuries.

These combs, found widely in medieval sites, suggest active trade networks and the exchange of techniques and materials.

Radiocarbon dating of material from the cemetery ditches in SMR19 helped to identify a highly significant medieval pottery assemblage. The presence of locally made pottery in the region has been speculated about since the 1960s, however, there's always been some doubt due to a lack of pottery kiln sites and scientific analysis. However, petrographic analysis conducted on the material collected from Five Mile Lane helped to identify a local source and ruled out known production centres outside the region that had imported wares into the area.



1) Antler comb illustration and reconstruction by Ian Dennis;

2) Burnt bone comb fragment;

3) Bone comb fragment

Thin sectioning analysis of Medieval pottery revealed sandstone-tempered fabric, may indicate local production

0 2 cm



Significance

This site of Five Mile Lane will have a considerable impact on our future understanding of the archaeology of the Vale of Glamorgan. Through excavation and various specialist investigations, including the study of charred plant remains, animal and human bones, metal working debris, pottery and other artefacts we have been able to build a detailed picture of life in the Vale across a period of 6000 years.

This site has presented us with Mesolithic flint artefacts, a series of Neolithic post-pit alignments, a rare monument within Wales, and unique to the Vale of Glamorgan. A Middle Bronze Age cremation burial which included not only a rare gold ring but also the remains of a wooden comb, an exceptionally rare artefact, which is likely the earliest wooden comb within the UK. The evidence for Iron Age settlements has also been highly informative, contributing to our understanding of domestic life within the Vale and supporting the notion that open undefended settlements were more common than previously thought.

We have also furthered our understanding of Whitton Villa and its administrative role, whilst broadening our view beyond the villa itself and situating it with a landscape of Roman agricultural activity and rural industry. Lastly, but by no means least, we have been given the opportunity to explore an unusual large medieval cemetery which likely formed part of an Early Medieval Assembly site, a centre of rural medieval life and death, which remained in use as a cemetery for up to 800 years.

Further Reading

Click to access...

The Neolithic to Bronze Age

[Lithic Assemblages from the Excavations at Parc Bryn Cegin](#),
Llandygai, Gwynedd, Wales – Analysis and Interpretation, by
J.L.W Williams and J. Kenney

[Bones and Stones Ebook](#) by Cadw

[Prehistoric Wales](#), Cadw

The Iron Age

[A Brief Introduction to Iron Age Settlement in Wales](#), by M. Ritchie

[Humans and Landscape](#), by A.E. Caseldine

The Roman Period

[Romano-British Settlement in South-East Wales](#), by E. Evans

The Medieval Period

[Medieval Wales](#), Cadw

Specialist Analysis

[Iron Age Burials](#), in 'The Atlantic Coast', by K. Murphy

[The metalworking process and archaeological evidence](#) (in: The social organisation of metalworking in southern England during the Beaker period and Bronze Age: absence of evidence or evidence of absence? by C. Carey, A.M. Jones, M.J. Allen, and G. Juleff

Education resources: [Education Packs](#) | Cadw (gov.wales)

Academic Reading

Click to access...

The Neolithic to Bronze Age

Halsted, J.C. [Settlement Patterns from the Late Neolithic to the Late Bronze Age: The Central Welsh Border Region in Context](#). 2011.

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Deforce, Koen, and Kristof Haneca. ["Ashes to Ashes. Fuelwood Selection in Roman Cremation Rituals in Northern Gaul."](#) Journal of Archaeological Science, vol. 39, no. 5, May 2012, pp. 1338–1348.

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