Bones, Burials, and the Viking Great Army in Repton

by Steve Bivans

In 866 AD a “large heathen army” invaded East Anglia.[1]
Over the next decade, the Viking Great Army roamed, rarely hindered, over all of Northumbria, East Anglia and Mercia, as well as penetrating deep into Wessex. England, much the same as the continent, had suffered the wrath of the Vikings since their first raids on Portland in 789 and Lindisfarne in 793.

During the next 60 odd years, the Scandinavian pirates returned sporadically to ravage, pillage and burn the ‘soft’ targets of England’s monasteries and villages. Moving swiftly in their longships which enabled them to navigate deep up England’s rivers, they victimized the unsuspecting interior villages and farms of England, disappearing before local forces could be mustered against them. Content with their easy loot, they sailed for home every winter to return in the spring and summer months to strike again.

This seasonal raiding characterized the first 60 years or so of the Viking Age. The invasion of 865 was to be different. According to the sources, the Vikings came in much larger
numbers—a so-called Viking Great Army—intent not only on plunder but on staking a claim to the land itself. This change in strategy has sparked much debate on the nature of Viking warfare and the nature of the Viking presence in England. How ‘great’ was this army? Was it really much larger than earlier raiding parties? If not, how did they manage to remain in England for so long? What evidence is there for the size and nature of this army? If they really came to settle, did they bring women along?

The answers to these questions continue to elude historians. The written sources simply do not give sufficient information to answer them. For that reason, historians have looked to archaeology for the answers. The archaeological record has been viewed as less subjective than the written sources. But modern archaeologists and historians have been more critical of the physical evidence in the last few decades, realizing the subjectivity of interpretation of the archaeological evidence.

particularly problematic in the case of the Vikings is the uncritical use of historical sources by archaeologists, who based many of their interpretations of the physical evidence on literary sources, like the Icelandic Sagas. The
sagas, not written into their final form until the 13th century, have recently been criticized for their value as a source for the Viking Age of the 9th and 10th centuries.[2] Archaeologists, basing interpretations on these sources, have unintentionally set into motion a ‘circular’ logic, in which historians refer to the interpretations of the archaeologists, who in turn refer to the work of the historian.[3]

Repton

While it is usually difficult to reconcile the archaeological record with documentary sources, in the case of the findings at Repton, Derbyshire, there seems to be some agreement. According to the Anglo-Saxon Chronicle, in the year 873, the Vikings invaded Mercia and seized the town of Repton, a royal center. They then fortified this position for the winter of 873-4.[4] In 875 the army divided, one part going north into Northumbria and the other south toward Cambridge.[5] Little was known about their winter quarters until the 1970s and 80s when Martin Biddle and his wife, Birthe Kjølbye-Biddle excavated the site of St. Wystan’s church in Repton, where they discovered evidence of fortifications and pre-Christian burials.
Among the burials were the remains of what Biddle suggests might be Ivar the Boneless, one of the Viking leaders, as well as the bones of females that may be of Scandinavian origin. In the 1990s, Julian Richards excavated 59 mound burials in nearby, Heathwood, Ingleby, only 2.5 miles south east of Repton. Most of the burials were cremations, with the remainder most likely cenotaphs. Artifacts consistent with Viking burial practices were found and the carbon dating is also consistent with the period of the Great Army.

These two sites may help to answer some of the questions that have plagued historians and archaeologists about the nature of the Viking army and its settlement in the Danelaw. The fortifications at Repton are significant because they are the only archaeologically excavated
Viking-built fortifications in Britain and as such may be able to give us an insight into the size and sophistication of Viking military operations. The burials at Repton and at Heathwood, may shed light on the make up of the army as well as whether or not women were a part of the invasion.

Repton and Viking fortifications

Historical sources inform us that the Vikings built fortifications frequently while on campaign. However, in England at least, only Repton has been excavated. The parish church, St. Wystan’s, parts of which date from the Anglo-Saxon period, is situated on a bluff of “Bunter sandstone on the southern side of the valley of the River Trent.”[6] The river, during the Anglo-Saxon period, flowed much closer to the church than it does today, where it formed a “low cliff”.[7] The village of Repton is situated at a strategic point, where the “ancient main routes across the Trent and along the valley meet.”[8] As such, it would have been an important site for the Vikings to seize and hold, if they wished to maintain their presence in Mercia.

The location of the church near the riverbank made it an ideal place to construct their winter camp. The River Trent feeds into the Humber...
just south of York, a Viking stronghold during the years of the Great Army. This situation suited the nature of Viking warfare, as their shallow-drafted ships could easily navigate up the Trent to Repton.

Excavation at Repton has a long history beginning in the 17th century, when the mound burial was first discovered by an amateur. The testimony of the original ‘excavator’ was recorded in the early 18th century by an amateur antiquarian. More finds were uncovered or discovered in the 19th century, again by amateurs. H. Vassal recorded the find of a Viking Axe in 1924.[9] The most recent excavations were carried out, as mentioned above, by the Biddles in the 70s and 80s.

The eastern half of a v-shaped ditch was found using resistivity and the western half by means of a caesium magnetometer survey. Stratigraphy was employed to determine the sequence of cemetery development, especially in relation to the defensive ditch and bank built by the Vikings. Measurements of weight and size were done on the bones from both the cemeteries and the crypt, and radio carbon dating was employed to date some of the bones, as well as comparisons of Preauricular sulcus and cranial indices.
Originally hoping to find evidence of the early Anglo-Saxon church foundations, the Biddles were surprised to find evidence of the V-shaped defensive ditch, anchored on either end of the church and curving northward to the original riverbank to form a large D-shaped enclosure. The entire ditch had, at some point in time, been filled in from the north side, probably with earth originally from the ditch which most likely formed a bank on the inside of the ditch. The ditch was some 4 m deep. Fortifications such as this were fairly common in Scandinavia in places like Århus and Hedeby.[10] If this fortification followed examples in Scandivanvia and on the continent, it would have been crowned with a wooden stockade on top of the bank.[11]

*Size of the ‘Great’ Army at Repton*

The resulting fortification enclosed an area of 3.65 acres. Unfortunately, the Biddles have yet
to publish the complete site report, so I have no exact dimensions for the church or the ditch, but from the area, the total circumference can be calculated at 1595 feet.[12] Using the formula of 1 man to defend every 4 feet of wall, the bank at Repton would have required 398 men to defend it against attack. However, a portion of the south side of the fortification was defended by the stone walls of St. Wystan’s church, and as such would not need the same ratio of man/ft as the rest of the wall. The roof and walls apparently suffered greatly during this occupation, as the evidence in the stone work suggests that the upper half or more (including the windows) were dismantled.[13] If this was truly the case, then the same ratio of 1 man to 4 feet would be needed to defend the walls of the church as well.

The cliff overlooking the Old Trent Water, was about 6 meters high, a formidable obstacle, and along with the river would have served to protect the north side of the encampment. Very few men would have been needed to defend this side. Without further dimensions, more accurate calculations cannot be made on the size of force needed to defend the site. However, an estimate between 200 and 300 men is probably safe.[14] Using figures and dimensions from known Roman marching
camps on the continent, it is possible that somewhere in the area of 400 men could have encamped within the fortification.[15]

Four hundred men does not sound like a ‘Great Army’. The lack of evidence of occupation within the ditch, and the relative small size of the area raises some interesting questions. First, where is the evidence of occupation if there were 400 men here? Would there not be remains, at least post-holes, of their winter houses, or at least a scatter of artifacts and evidence of hearths or campfires? Second, it is difficult to reconcile 400 men with the accounts of the Anglo-Saxon Chronicle and with the achievements of the Viking army over the decade or so that they were in England. It is simply inconceivable that 400 men could have invaded, subdued, and held such a large area. If there were more men, where is their camp?

A Viking Marina?

John Haywood, in his discussion of the Repton fortifications mentions evidence of a “slipway” on the bank of the river, which might have allowed ships to be hauled onto shore within the fortification.[16] He does not, however, give a source for this information. I could find no such mention in the publications from the Biddles.[17] If such a slipway did exist, it might
explain the small size of the fortification, which may have been used primarily to protect the ships. Employing the dimensions of two Viking ships found in Roskilde Fjord, the area enclosed within the fortification could have housed between 50 and 100 ships, with a minimum rowing capacity of between 2100 and 2600 men.[18] In order to house this many ships, they would have had to be neatly and tightly parked. Also, ships may have carried twice the number of men needed for rowing, in order to always have fresh rowers.[19] If so, then the number could be doubled. It is also possible, and indeed even likely, that the second half marched on foot along the bank of the river, as they did at least a few times on the continent, in similar situations (see my article, “Size Matters: the Vikings, the Siege of Paris, and the Bridge at Pontoise“). If the force was 2000-4000, then the men must have camped nearby, which means that a major discovery is waiting beneath the soil near Repton.

Viking Burials at Repton

The presence of fortifications and the scarce documentary evidence lead one to believe that the fortifications are indeed Viking built. This evidence alone is not enough to seal the case. However, the burial evidence and the existence
of previous finds, help to round out the picture. This evidence, without the documentary sources, would be much more problematic to interpret. In keeping with scholarly debates over interpreting ethnic or culturally identity, at issue at Repton is whether one can differentiate ‘Viking’ artifacts and remains from ‘Anglo-Saxon’.

In the past, archaeologists have relied heavily on the typology of material finds to determine ethnic, cultural and geographical origin of interred or cremated human remains. This approach has been challenged in recent years. It is difficult to determine, in many cases, whether a person buried with ‘Viking’ artifacts, is actually Scandinavian in origin, or whether the items were obtained through trade, raid or other means. Such scattered finds have been found in many places in Britain and elsewhere, but without the assistance of documentary evidence, it is nearly impossible to answer these questions.

In Repton, the picture seems a little clearer. There is a convergence of the documents and the archaeological evidence, which seem to line up both in time (870s) and in place, at Repton. There are a number of items either excavated by the Biddles or previously, that are Viking in
style and are consistent with the period of time of the Great Army. First, is a bearded axe of Viking type found in 1923, a common item found in excavations of English churchyards.[22] Also, a Viking ‘hogback stone monument, found in the early 19th century, sketched and then broken up and lost.[23] A Petersen type L Viking sword was found in 1839 “‘in the midst of a large quantity of human bones' in the Old Trent Water to the north-west of the burial mound.”[24] An electrotype copy of another Viking sword, Petersen type X, was found in a Repton attic in 1948, possibly a copy of an earlier find at Repton.[25] With the exception of the axe, the context for these finds has been lost, but together point to the conclusion that Repton was, at some time in the past, a Viking site.

Viking Graves

The Biddles discovered several furnished burials around the church that they have interpreted as Viking graves. The most prominent is grave 511, one of a male aged 35-45, who suffered a large wound to the skull,
then a killing blow to the "head of the left femur."[26] He was buried with several items, most notably a silver alloy Thor's hammer and a sword of Viking style, Petersen type M.[27] His height, 1.81 m, and physical type are very similar to remains found in a mass burial near the church (discussion below).[28] Buried in an adjacent and parallel grave, grave 295, were the remains of what appears to be a young man, height 1.79 m, who may have expired from a "cut to the right side of the skull."[29] At his side was an iron knife. Biddle suggests, or more accurately, questions if this might be the older man's "weapon-bearer"?[30]

Grave 529, north of the chancel, contained the remains of a man "aged 25-35, 1.77 m tall" who was buried with a ring and "five silver pennies datable to the mid-870s."[31] The ring also has parallels with similar finds in Scandinavia.[32] In this area, burials continued for the next three centuries, but only one grave, that of a woman (grave 203), "showed Scandinavian traits."[33] Buried a generation after the other 'Scandinavian' burials, she was aged c.45 and interred with an iron knife and a strike-a-light.[34] The existence of this female burial
raises questions about the nature of the Viking presence in the early Danelaw. If she was indeed a Scandinavian woman, possibly coming to England in the generation after the Great Army, were there more like her? How can we know her origins? The few objects in her grave seem inadequate to answer such questions. Other methods are needed.

Probably the best evidence for pagan, or Viking, burials was found by the Biddles just to the west of the church when they rediscovered the mass-burial, in what might have originally been a mortuary chapel of Anglo-Saxon construction. It appears that the building had been cut down to ground level and reused as a mound burial. It was first discovered in the 17th Century and thanks to an interview in the early 18th Century, a description of the contents survives. It is worth quoting at length:

“...when clearing farther he found it to be a square enclosure of Fifteen Foot: It had been covered, but the Top was decayed and fallen in, being only supported by wooden Joyces. In this he found a stone coffin, and with Difficulty removing the Cover, saw a ‘Skeleton of a Humane Body Nine Foot’
When the mound was again opened in 1787, this central burial was gone and the bones were scattered in a heap.

When the Biddles excavated this mound in the 1980s, they discovered the remains of at least...
264 people. 97% of them were adults, mostly falling between the ages of 17 and 45, only 5% were younger and 3% older.[36] Of the individuals that could be sexed, 82% were male or possibly male with only 18% female or possibly female.[37] This is contrasted with the data from the four other cemeteries in the churchyard, which demonstrate a ratio of 63% male to 37% female.[38] Due to the high percentage of fighting age men and the low percentage of women, children and elderly, the Biddles suggest that the mound may contain the remains of the dead of the Great Army. The lack of wounds suggests that they probably died of disease.

Comparing bone size and density between the mound burials and those of the other cemeteries, the male bones in the mound are more robust. The male skeletons in the mound are also on average taller than those in the other cemeteries, with the exception of cemetery 3M, which are taller, and which surround the mound and are of a slightly later date, early 10th to 11th century. The Biddles
suggest that the remains in 3M may be Scandinavian as well.\[39\] A comparison of cranial indices demonstrates similarities between the mound population and those in 3M.\[40\]

There is some evidence, though probably inconclusive, that there was a shift in the female population after the initial conquest of Repton by the Vikings. Comparisons of bone size and density, suggests that the females in the mound had more in common with other Anglo-Saxon burials, suggesting that they were probably English and not Scandinavian. Might some of these women have been slaves of the Great Army? It is impossible to tell. Measurements of the percentage of Preauricular sulcus suggests that the women in 3M have more in common with Viking Age women in Scandinavia than with the women in the other cemeteries at Repton, including those in the mound.\[41\] This may suggest that after the occupation of Repton in 873-4, Viking settlers from Scandinavia moved into the area and brought their women with them. DNA profiling, and isotope analysis of teeth, might help to answer, or at least shed more light on some of these questions, but that has yet to be applied to the bones of Repton.

Using coins found in the mound, along with
radiocarbon dating, the Biddles argue that the data is consistent with a closing of the mound in 874, when the Great Army left Repton.[42] This is based on the dating of 16 bones from the mound. Half the bones dated to an earlier period, late 7th to early 8th century. The Biddles contend that the rest of the evidence, the coins, “the condition of the bones…their physical character, and their taphonomy suggest…that the deposit is homogenous.”[43] However, they suggest that some of them may have been remains of the royal Mercian house, “included with the Viking deposit, either because it had seemed fitting to do so, or because the Danish army wished to validate their possession of the site…”[44] All of the bones were most likely moved to the mound at some point, from another location as there are almost no foot or hand bones found in the mound, which means they had been left buried or exposed long enough for the bones to become fully detached from one another.[45]

_Ivar the Boneless?_

Although the central burial in the mound had been either looted or so scattered that it could not be identified, the Biddles did find a handful of items that may have originally been a part of the find. Possible items include: an early
medieval axe of an identical type found in Fyrkat, Denmark, a sword fragment, “two large seaxes” and several smaller seaxes. Also found were 5 silver pennies, “four of which were struck no earlier than c.872, and the fifth of which may belong to 873/4.”[46] The Biddles argue that the man buried in the central position in the mound may have been Ivar the ‘Boneless’, one of the leaders of the Great Army. The best evidence for this is all circumstantial, and based on the elaborate ritual surrounding the mound burial, the interment of over 200 men with him, rich objects, the labor involved in demolishing the original structure and re-flooring of the mound with red marl, offering pits surrounding the mound, and some evidence that human sacrifice may have accompanied the closing (four young people in a pit at the south west corner).

Along with the physical evidence are the historical texts, the Annals of Ulster, The Chronicle of Æthelweard, and Ragnar Lothbrok’s Saga. The Biddles make an interesting and spirited case for identifying Ivar with the man in the mound, but in the end, it is a question that cannot be definitively answered, as none of the written sources specifically tell us where he was buried. The Annals of Ulster only tell us that he came to Ireland in 871 and
that he died, but not where he died or where he was buried. Ragnar is the only one that mentions his elaborate burial somewhere in England, but because of its late date and literary nature, may be the most unreliable of the three sources.

_Burials at Heathwood, Ingleby_

Only 2.5 miles east, southeast of Repton is Heath Wood, a site excavated by Julian Richards in the 1990s. In order to minimize the digression from the topic of Repton, I will only compare Richard’s finds and conclusions in light of the finds at Repton. At Heath Wood, Richards uncovered 59 mound burials, all of them cremations. Based on the typology of a number of artifacts, especially two sword blades, radio carbon dating of human bone and the pagan nature of the burial rite, Richards dates the site to the period of late 9th or early 10th centuries, but argues for the earlier date, most likely the Great Army.[47] He also suggests that the difference between the inhumation practices at Repton, and the cremations at Heath Wood, may reflect divisions in the Great Army during the winter of 873-4, leading to the split of forces in 875.

Richards points to the ad hoc make up of the Great Army, from disparate forces coming from
different places and at different times. Each one possibly bringing new burial practices along with them. He also suggests that those buried at Repton may have preferred to legitimize their position by associating themselves with the Mercian royal house, choosing interment in the Mercian churchyard and mortuary chapel to do so, while the other group chose the pagan rite of cremation and burial in the landscape at Heath Wood.[48] While this is an intriguing hypothesis—and may in fact be correct—too little is known about Viking burial practices, especially in England, to make solid conclusions about why one practice was followed only 2.5 miles from another, at what appears to be the same time period. Both cremation and inhumation were practiced in Scandinavia, but we need more study there in order to better understand what may have been occurring in England.[49]

**Future directions for analysis**

I am unsure as to the future of the scholarship on this site. The excavations concluded some 20 years ago and the site report has yet to be published. New methods in analysis—especially isotope analysis of teeth, which can determine where an individual lived in childhood—could be applied, especially to the
human remains to help determine the origin of those buried there. DNA and isotope analysis might go a long way to an understanding of the identity of the bodies at Repton and Heath Wood. The preponderance of evidence, fortifications, weapons, burials, artifacts, coin dating, strongly suggest that the site was a Viking fortification built during the decade when the so-called Great Army was in England. The written sources back this up. As to the identification of the central burial as Ivar the Boneless, the evidence is inconclusive, but intriguing nonetheless. Whoever was buried there, they seem to have been important, and Ivar is as good a guess, or better, than any other.

[4] ASC, 874 AD.
[5] Ibid, 875 AD.
[7] Ibid.
[12] Calculated w/1acre=4840sq yds for a total of 17,666 sq/yds = 132.9 yd2. This means that each side of the fortification, if equal in length would be 132.9 yds long. Multiplying this by 4 would equal 531.65 yds for the perimeter of the entire fortification. This is multiplied by 3 to give us the figure in feet.
[14] John Haywood suggests that it could have been manned by “no more than 150”, calculating the ditch sections at 200 yds in length. While it may have been possible to man the ditch perimeter with only 150, it would have been necessary to also guard the riverbank with a minimum force, as well as the ‘gate’ or doors
of the church, as well as any windows. See, John Haywood, Historical Atlas of the Vikings, 49.

[15] The Roman camp at Haltern, which held some 11,000 men was about 82 acres, which gives us a figure of approximately 36 sq/yds per man.


[17] I have been unable to reach either the Biddles or Haywood at this time. I hope to do so in the near future.

[18] Crumlin Olin Pedersen, Five Viking Ships from Roskilde Fjord, 1978, 110. The dimensions of ‘Skuldelev 2’ the largest of the ships was approximately 95 feet by 13 feet, with a rowing capacity of 50 men. ‘Skuldelev 5’ was 57 feet long by 8.5 feet wide, with a rowing capacity of 24 men. Calculating the rectangular area of these ships gives us a good number of how many could fit into the fortification at Repton. It is likely that they Vikings had a variety of different sized ships. This is accounted for in the range of possible numbers of rowers above.


[20] “Nortmanni hoc cognoscentes Gandavum rediere suisque reparatis navibus terra marique iter facientes Mosam ingressi sunt et in Haslao
sibi sedem firmant ad hiemandum”, from The Annals of St. Vaast, trans. Steve Bivans, forthcoming, entry for the year 881 AD.


[22] Biddle ‘Great Heathen Army’, 55. This was of Petersen Type E.

[23] Ibid.


[26] Biddle, GHA, 60-61.

[27] Ibid, 61.

[28] Ibid.

[29] Ibid.

[30] Ibid.


[33] Biddle, GHA, 65.

[34] Biddle, GHA, 65.


[36] Biddle, GHA, 74.
[37] Ibid.
[38] Ibid.
[39] Biddle, GHA, 78.
[40] Ibid, 77.
[41] Biddle, GHA, 78.
[42] Ibid.
[43] Ibid, 79.
[44] Ibid.
[45] Ibid.
[48] Ibid, 103-5.

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