A Burial of a Viking Woman at Adwick-le-Street, South Yorkshire

By GREG SPEED and PENELOPE WALTON ROGERS

with contributions from PAUL BUDD, PHIL CLOGG, JOY LANGSTON and ERICA PATERSON

IN 7ANUARY 2001, an archaeological watching brief was carried out during the construction of a sewer pipeline at Adwick-le-Street near Doncaster in South Yorkshire. During excavation of a Romano-British trackway ditch, a plough-truncated grave was identified which produced fragmentary skeletal remains and an assemblage of copper-alloy and iron grave goods typical of a female Scandinavian burial of the Viking Period. The grave goods included a plough-damaged copper-alloy bowl, a non-matching pair of oval 'tortoise' brooches and fragments of an iron knife and a key or latch-lifter. Other objects might previously have been removed by ploughing. The oval brooches are typologically the earliest of the four pairs to have been recovered in England from a grave and the first to be excavated under archaeological conditions. The design and condition of the brooches suggest a date for the burial at the end of the 9th century. Isotope analysis of teeth from the skeleton indicates an origin for the woman in either Norway or possibly north-eastern Scotland. Investigation of the grave goods has provided information on manufacturing techniques and costume. No evidence was recovered to suggest why the woman was buried in this location, although a previous discovery of Roman or post-Roman inhumations and cremations nearby and the results of geophysical survey suggest that the excavated grave might form part of a more widely dispersed group of burials.

INTRODUCTION By greg speed

Archaeological monitoring and excavation was undertaken during topsoil stripping for a works compound and pipeline construction corridor for a new sewer to the north of Adwick-le-Street near Doncaster, South Yorkshire, associated with the nearby Red House Park development scheme. The work was carried out during late January 2001 by Northern Archaeological Associates for Earth Tech-Morrison on behalf of Yorkshire Water Services Ltd. The excavation and postexcavation programme was funded by Redhouse Projects Ltd.

An initial environmental screening report for the sewer development area identified archaeology as an environmental issue likely to be affected by the

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scheme.¹ The area of open fields to the north of Adwick-le-Street was considered likely to contain substantial archaeological remains related to the Roman Ridge Roman road from Doncaster to Castleford which passed 500 m to the west of the sewer development. A programme of mitigation for the sewer pipeline was agreed with the South Yorkshire Archaeology Service, consisting of geophysical survey and archaeological monitoring of construction of the sewer pipeline.² All of the archaeological features identified within the construction corridor were ditches comprising parts of an extensive 'brickwork' field system of probable Romano-British date enclosing wide areas in the vicinity of Doncaster.³ This report principally details the results of the excavation of the grave of a Viking woman identified within the works compound area.

SITE LOCATION

The site of the development was located some 1 km west of the historic core of Adwick-le-Street village within a field lying immediately to the north of the modern suburbs of the village (Fig. 1). The burial was located at SE 5302 0870. The field was bounded to the west by the A638, the main road running northwards from Doncaster, and to the south by Lutterworth Drive. The areas to the south and west have been developed for housing estates during the 20th century, with continuing development to the west. The site lay at 27 m OD on a gentle, east-facing escarpment near to the northern end of a ridge of higher ground extending northwards from the River Don at Sprotborough, to the west of Doncaster, and terminating at Red House. This is formed by a linear outcropping of Upper Magnesian Limestone.⁴ To the east the site overlooks a wide area of low-lying poorly-drained land forming the former flood plain of the River Don at a level of 5 m OD. Immediately to the west of the site the land rises to 51 m OD, then drops slightly before rising on to the Westphalian Coal Measures. The soils in the area of the site are mapped as brown calcareous earths of the Aberford series, well drained and easily worked.⁵ The contractor's site compound area lay within a distinct level area at the SW. corner of the field.

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The Roman Ridge (Margary road 28b) forms the boundary between the historic parishes of Adwick-le-Street to the east and Brodsworth to the west, and may have formed the boundary between Roman and subsequent Anglo-Saxon estates.⁶ It has been suggested, on the basis of surface finds, place-name and burial

¹ Scott Wilson Kirkpatrick & Co Ltd, Redhouse Park, Adwick-le-Street, Doncaster: Initial Environmental Screening Report (unpubl. rep., 2000). ² G. Speed, Red House Park, Adwick-le-Street, Doncaster, South Yorkshire: Foul Water Sewer Archaeological

Monitoring Methods Statement (Northern Archaeol. Assoc. Rep., 01/10, 2001). ³ G. Speed, Red House Park, Adwick-le-Street, Doncaster, South Yorkshire: Archaeological Post-Excavation

 ⁴ Institute of Geological Sciences, 1:250 000 Map Sheet 53N 02W: Solid Geology (Southampton, 1983).
 ⁵ Soil Survey of England and Wales, Soils of England and Wales 1:250 000 Map Sheet 1: Northern England (Southampton, 1983); R. A. Jarvis, V. C. Bendelow, R. I. Bradley, D. M. Carroll, R. R. Furness, I. N. L. Kilgour and S. J. King, Soils and Their Use in Northern England (Soil Survey of England and Wales Bulletin, 10, Harpenden, 0).

^{1984).} ⁶ I. D. Margary, *Roman Roads in Britain* (London, 1967), 415.



The location of the site at Adwick-le-Street, near Doncaster, South Yorkshire. Drawing: Damien Ronan, NAA.

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evidence, that there was a small Romano-British settlement adjacent to the Roman road at Adwick somewhere near the site of the present village.⁷ It is also suggested that the activities of the settlement could have been concentrated on the eastern side of the road due to the physical difficulty of crossing the road other than by foot, the substantial agger surviving even today up to a height of 3.5 m. If so, any remains of the settlement will now be covered by the extensive 20th-century suburban development along the A638. Recent extensive excavation and recording in advance of development to the west of the Roman road and to the south of Red House has revealed an Iron-age and Romano-British agricultural landscape with a field system interspersed with enclosures but no concentrated settlement.⁸ No evidence was recovered for post-Roman activity or settlement.

During 1968, workmen engaged in digging foundations and service trenches at Lutterworth Drive, Woodlands (some 75 m to the south-east of the southern end of the sewer development) reported the presence of human remains. Subsequent investigation identified four inhumation burials (of which only one was partially archaeologically excavated), one or two probable cremation burials, a pit and a short length of ditch.⁹ Many of these features were associated with sherds of Roman pottery. The pottery, and a single coin of Victorinus, all probably dated from the 3rd or 4th centuries, but could have been residual. The two cremation urns had been removed by the workmen and were not available for examination. A magnetometer survey undertaken to the north of Lutterworth Drive identified further features including possible graves. However, when this area was subsequently developed for housing in 1981–2 no archaeological investigation was carried out.¹⁰

The arrival of Vikings in northern England is well documented. Record of Viking raids on the NE. coast began in 793 and in 865–6 a large invading force wintered in East Anglia then drove north and captured York. During the course of the later 9th century, Scandinavians gained control over Northumbria, Mercia and East Anglia, the Anglo-Saxon Chronicle recording for 876: 'And that year Healfdene shared out the lands of the Northumbrians, and they proceeded to plough and to support themselves'. In addition to taking over agricultural land they established trading centres at towns such as York and Lincoln.¹¹ The new arrivals may have become partially anglicised but contacts were maintained with Norway and the Norse king, Erik Bloodaxe, was expelled from York in 954. There is, however, little archaeological evidence to document the occupation of the South Yorkshire area between the end of the Romano-British period and the Norman Conquest. The Anglian and later Scandinavian invaders presumably used the Humber estuary and navigable rivers to penetrate deep into the countryside

⁷ M. Newman, 'Archaeology', 66–85 in Clive Brook Associates Consultants Limited, Red House Park Doncaster: Environmental Statement Main Report (1995).

⁸ D. Johnston, pers. comm.

⁹ P. C. Buckland and J. R. Magilton, *The Archaeology of Doncaster 1: The Roman Civil Settlement* (BAR Brit. Ser., 148, Oxford, 1986), 214–20. ¹⁰ Ibid., 217.

¹¹ E. Roesdahl, J. Graham-Campbell, P. Connor and K. Pearson (eds.), *The Vikings in England and in their Danish Homeland* (London, 1981), esp. 19–38, 55–68, 69–77 and 78–82.

around Doncaster. Place-name evidence suggests that many of the small towns and settlements in the area owe their origins to Scandinavian settlers. Scandinavian and Scandinavianised place-names are comparatively rare on the better agricultural land of the Magnesian Limestone belt to the west of Doncaster, with Old English village names generally lying along the edge of the limestone to take advantage of the spring-line, as at Adwick-le-Street. On the poorer (until drained) agricultural land of the marshy low-lying areas to the east, however, Scandinavian names predominate, suggesting a secondary phase of occupation with newer name forms being used for the new settlements.¹² On place-name evidence it can be suggested that the site at Adwick-le-Street lay within the area of primary English settlement rather than within the area of secondary, perhaps Scandinavian, settlement immediately to the east.

Other than place-name evidence, Scandinavian settlers in the Doncaster area have remained elusive in the archaeological record. Very few finds from the Earlymedieval Period have been recorded nearby, and these are almost exclusively isolated finds of brooches, pins and strap fittings. Two of these are broadly contemporary with the Viking Period. A Trewhiddle-style strap-terminal dating from the 9th century has been found at Skelbrooke some 2.5 km to the north of Adwick-le-Street, and a gold, garnet and glass brooch of 10th- or 11th-century date has been found near Bawtry, some 20 km to the south-east.¹³ The only Vikingstyle object previously recorded from the area is a small iron axehead found near Bawtry.¹⁴

Adwick is recorded in Domesday (1086) as Adeuuic, translating from the Old English as 'dwelling or (dairy) farm of a man called Adda', the suffix '-le-Street' deriving from its location on a Roman road.¹⁵ However, the centre of the medieval and post-medieval village lay some 1.5 km to the east of the Roman road, and can hardly be described as being 'on' it, there being no evidence for settlement nearer to the Roman Ridge. It seems likely, on the place-name evidence, that the pre-Conquest settlement probably lay further up-slope to the west, nearer ('on') the Roman road and the excavation site, and that the focus subsequently migrated eastwards nearer to the stream running at the foot of the limestone escarpment.

THE GEOPHYSICAL SURVEY AND EXCAVATION RESULTS

A gradiometer survey of the pipeline route and compound area was undertaken by Archaeological Services WYAS in January 2001 (Fig. 2).¹⁶ A number of anomalies were identified including evidence for ridge and furrow agriculture aligned at right angles to the A638. Other linear anomalies identified within the southern block were interpreted as in-filled ditches forming the N. and E. sides of a field or enclosure. Two parallel anomalies extending to the north were

¹² P. C. Buckland, J. R. Magilton and C. Hayfield, The Archaeology of Doncaster 2: The Medieval and Later Town (BAR ¹² P. C. Bucklain, J. K. Magnion and C. Hayneld, *The Interacting of Domastics 2: The Interaction and Constant Proceedings*, 18 Yorkshire Auseum Portable Antiquities Scheme record nos. yorym656 and yorym469.
 ¹⁴ Society of Antiquaries of Newcastle upon Tyne, *Proceedings*, 3rd Ser., I (1905), 273.
 ¹⁵ A. H. Smith, *The Place Names of the West Riding of Yorkshire. Part 1: Lower and Upper Strafforth and Staincross Wapentakes* (English Place-Name Society, XXX, Cambridge, 1961), 68–9.
 ¹⁶ West Yorkshire Archaeological Services, Red House Park Foul Water Sewer, Adwick-le-Street, South Yorkshire: Construction 2010 (2011).

Gradiometer Survey. WYAS Report 858 (2001).



Interpretation of the geophysical survey of the site. West Yorkshire Archaeology Service. Drawing: Damien Ronan, NAA.

subsequently shown by excavation to be ditches either side of a trackway, possibly linking into the N. side of the enclosure. Several anomalies overlying the line of both of the ditches to the north and south of the stripped compound area possibly represent pits or graves, with other similar anomalies within the enclosure. Modern manholes and water pipes were also recorded. The layout of the access road and works compound was modified subsequent to the geophysical survey in order to avoid as far as possible areas of discrete archaeological features.

The plough-soil was removed from the access road and compound areas using a tracked excavator with a toothless bucket, operating under archaeological supervision. The subsoil revealed within most of the compound area was a fine limestone gravel which did not require extensive hand-cleaning in order to reveal archaeological features. All subsequent excavation was carried out by hand. The topsoil consisted of a 0.3 m-thick layer of dark brown, slightly sandy, silty clay, directly overlying the limestone gravel. The surface of the gravel had been heavily scored by modern ploughing suggesting on-going agricultural erosion of the subsoil surface.

The ditch forming the northern side of the possible enclosure was not identified due to disturbance in that area relating to both ancient and modern ploughing which served to mask any archaeological features. The trackway ditches had an overall surviving external width of 5.5 m. The eastern ditch (7) was observed over a length of 35 m (Fig. 3) and was up to 1.3 m wide and 0.5 m deep with a steep-sided 'U'-shaped profile, but had been truncated by ploughing to the south, as had the western ditch (14). Both ditches were filled with sub-angular limestone rubble in a matrix of mid orange-brown clayey silt. The source of the limestone rubble was not apparent but it might have been derived from the metalling of the trackway. Finds recovered from the fill (13) of the eastern ditch included fragments of a dog skull, Roman greyware pottery of 3rd- or 4th-century date and a fragment of lead sheet.¹⁷

THE BURIAL

Towards the SW. side of the stripped compound area, the eastern trackway ditch was cut at an angle by a sub-rectangular grave cut (5) (Figs. 3–4). It was aligned WSW.–ENE. and its surviving dimensions were 1.82 m long, 0.7 m wide and 0.13 m deep, but it had been severely truncated by modern ploughing. The grave contained the poorly preserved remains of a human skeleton (4) lying in an extended supine position with the head to the south-west. The skull was in an upright position against the end of the cut and probably turned slightly to the right (south-east), but had been damaged by ploughing which had resulted in the loss of much of the front and top. Several vertebrae had been preserved below the skull. Parts of the shafts of both femures survived in a poor condition. Fragments of several ribs were present in association with copper-alloy grave goods. The left clavicle was well preserved but no trace survived of the associated bones of the left chest or shoulder. Little of the rest of the skeleton survived due to the soil conditions. The

¹⁷ P. Didsbury, 'Pottery Assessment', 31 in Speed, op. cit. in note 3; J. Watt, 'Lead Object', 50, ibid.; L.J. Gidney, 'Animal Bone', 54, ibid.



Plans of excavated features and grave 5, with sections through the trackway ditches. *Drawing: Damien Ronan*, *NAA*.



FIG. 4 The head and shoulders section of skeleton 4 showing brooches AC (to left) and AB (to right) *in situ. Photo: Greg Speed, NAA*.

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grave had been back-filled above the body with mid- to dark brown clayey sand (3) containing frequent limestone fragments.

A number of grave goods were associated with the burial. Topsoil stripping had dragged clear the remains of the walls of a bronze bowl (object AA), which had previously been badly damaged by ploughing. The base of this vessel was subsequently recovered from machine-disturbed loose topsoil whilst cleaning above the burial. The area was checked with a metal detector, resulting in the recovery of several small fragments of copper alloy probably derived from the bowl but no other artefacts. The bowl had originally been positioned within the southeastern side of the foot end of the grave, where a small group of fragments of copper alloy (object AG), representing additional parts of bowl AA, were recovered.

A pair of distinctive Viking-period oval or 'tortoise' brooches (objects AB and AC) were found *in situ* at either side of the chest area of the body (Fig. 4). These were both recovered within soil blocks since there appeared to be preserved

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organic material, possibly textiles, adhering to the back of one or both brooches. Three fragments of iron were recovered from within the grave. Parts of a latchlifter or key (objects AD and AE) lay near the area of the feet and part of a knife (object AF) was recovered from the area of the left upper arm.

No other archaeological features were identified within the compound area, and metal detector and visual scanning of the topsoil heaps did not recover further artefacts.

THE HUMAN SKELETAL REMAINS By dr joy langston

CONDITION AND PRESERVATION

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The human bones from the site are fragmentary and friable with evidence of postburial abrasion and severe deterioration of the bone cortex. They represent the remains of one adult individual, but the skeleton is incomplete and consists only of parts of the right and left upper legs, vertebral and rib fragments, the left clavicle, and skull. The upper limbs/hands, lower legs/feet, pelvis, and most of the ribs and vertebrae are not preserved. Better survival of bone is associated with the presence of copper-alloy salts (from metal artefacts) as larger fragments all show characteristic green staining.

The skull is fragmented and most of the facial and small bones are absent. There is severe deterioration of the outer table, although preservation of the inner bone is comparatively good.

SEX AND AGE AT DEATH

The sex of this individual cannot be determined with absolute confidence from the osteological evidence as there are no pelvic remains, the skull is incomplete and abraded, and there are no joint surfaces (measurement of which can aid estimation of sex). No long bones are complete and *in vivo* stature cannot be calculated. However, it is possible that this individual was female: although the skull is not complete the mastoid processes are not large and the anterior mandible indicates a more parabolic dental arch (both more 'female' features). In addition, the femora and clavicle are all more gracile, which may again indicate a female.¹⁸

This individual was adult at the time of death; the skull sutures are fused and a full permanent dentition erupted. Molar attrition patterns indicate an age of at least 33-45 years. The asymmetric nature of wear on the first and second molar teeth may indicate that this individual was older (45 + years), but a precise age cannot be given.¹⁹ A greater age at death is also supported by the degenerative changes visible in the spine.

PATHOLOGY

The fragmented and abraded nature of the bones makes an assessment of pathology very difficult. The dens of the second cervical vertebra has marginal osteophytes and a small area of eburnation (polished articular surface resulting from bone on bone contact), and similar osteophytic growth is seen in a rib tubercle. Three vertebral body fragments (probably mid-thoracic) show minor osteophytosis of the anterior rim. These changes are consistent with those noted in osteoarthritic degeneration,20 and indicate that this

¹⁸ W. Bass, Human Osteology: A Laboratory and Field Manual, 4th ed. (Columbia, 1995).

D. R. Brothwell, Digging Up Bones (Oxford, 1981).
 J. Rogers and T. Waldron, A Field Guide to Joint Diseases in Archaeology (Chichester, 1995).

individual had joint problems in the spine, which were most severe in the upper neck. Whether other joints of the body were affected by degenerative joint disease is unknown. There is no evidence of infection or trauma. No carious teeth were seen but at least one tooth (upper left first molar) was lost before death. The poor condition of the mandibular and maxillary bone makes it impossible to comment on periodontal disease.

BONES IDENTIFIED

The bones from the back of the skull are in larger fragments and better preserved than those at the front. Among those positively identified are the occiput, basilar portion and occipital condyles, parts of the left and right parietal and temporal bones, fragments of the frontal bone (including part of the left upper orbit) and fragments of maxilla. The mandible, although fragmented and abraded is relatively complete with parts of the right mandibular ramus (with coronoid and abraded condyle), left ramus (with condyle) and anterior bone being identified. The small space behind the lower left second molar (7) suggests there was congenital absence of the lower third molar (see '?' in Table 1). Only one tooth is *in situ* (a lower right first premolar) but 15 loose teeth have been identified.

TABLE I

DENTITION OF THE BODY IN THE BURIAL AT ADWICK-LE-STREET																		
Maxilla	Left	/	7	Х	5	4	_	_	_	_	_	_	_	_	_	_	_	Right
Mandible		5	7	6	5	4	3	2	Ι	I	2	3	4	5	6	_	5	
Notification: 5, 6, etc. = tooth present / tooth lost post-mortem X tooth lost ante-mortem - bone/tooth missing ? position unsure: in this individual there is one third molar (probable lower) but whether it is a left or right tooth is unknown)																		

Surviving pieces of the vertebrae were represented by the dens of C₂ (second cervical vertebra), found among the skull fragments. Other vertebral fragments were found with the rib bones. Three anterior edges of vertebral bodies were noted in association with brooch AB; and the size of two fragments indicates probable mid-thoracic level (c. T₅-8). A further possible vertebral fragment was found in association with brooch AC.

Other bones preserved included the left clavicle (shaft only, 113 mm), the right femur (shaft, fragmented, maximum length 220 mm), the left femur (shaft, fragmented, maximum length 210 mm). Small fragments of rib cortex were found in association with the brooches (largest piece 75 mm long) and four fragments of scapula were found with brooch AC, all from the scapular wing.

COMBINED O- AND SR-ISOTOPE ANALYSIS OF DENTAL TISSUES By PAUL BUDD (Department of Archaeology, University of Durham)

Two teeth were extracted from individual RFS01-4 for combined strontium (Sr-) and oxygen (O-) isotope analysis in order to comment on possible place of origin. The link between the composition of skeletal remains and place of residence is possible because of systematic natural variations in the isotopes of various elements between localities.²¹ Such

²¹ G. Faure, *Principles of Isotope Geology* (New York, 1986).

differences may depend on the age and composition of local geological deposits, as is the case with ⁸⁷Sr/⁸⁶Sr ratios, or climatological variations which cause systematic shifts in the oxygen isotope composition (δ^{18} O) of precipitation falling in different localities.

Strontium from the soil enters the human diet and becomes incorporated in tissues without changing its isotopic ratio. Oxygen is similarly taken up, mainly from ingested water. Oxygen isotopes do change in the process, but this is systematic and can be calibrated to relate tissue ratios to those of drinking water. Although strontium and oxygen are present in bone, this tissue is known to be subject to post-mortem alteration during burial.²² Tooth enamel is therefore the tissue of choice for analysis as it is largely resistant to diagenesis. It also preserves a record relating to childhood rather than later life. The principles behind this approach are discussed in greater detail elsewhere.²³

Here, two teeth were examined, both from the mandibular right quarter of the dentition. They were a second molar $(M_2 \operatorname{right})$ which mineralises between about 3 and 7 years of age and third molar (M_3 right) which usually mineralises between 12 and 16 years of age. In this way it was hoped to be able to comment on both this individual's early and later place of childhood residence. Two soil samples (S1 and S2) were also obtained from the burial context for Sr-isotope analysis in order to clarify the expected range of locally bioavailable⁸⁷Sr/⁸⁶Sr.

Strontium and oxygen were extracted using standard methods described elsewhere,24 and the results are given in Tables 2 and 3. The oxygen isotope composition of childhood drinking water calibrated from each tooth is constant at -8.6% suggesting that there was no long-distance movement of this individual between early and late childhood. This value corresponds to the most depleted (in ¹⁸O) rainfall falling in the UK today and such low values of $\delta^{18}O_{dw}$ are found only in a few locations in eastern Yorkshire and Lincolnshire and in the rain shadow of the Cairngorm Mountains in NE. Scotland. Because the uncertainty of $\delta^{18}O_{dw}$ calculation is around $\pm 0.5\%$, it is not possible, on the basis of O-isotopes alone, to exclude these locations in Britain as possible places of childhood residence, but it should be noted that $\delta^{18}O_{dw}$ of -9 to -8 is also characteristic of coastal Norway around the Trondheim area.²⁵

The Sr-isotope data help to refine these conclusions. Labile soil Sr at the burial site has⁸⁷Sr/⁸⁶Sr ratios in the range $\sim 0.7102-0.7108$. The site is underlain by upper Permian limestone which has not been well characterised isotopically, but the ratios reported are similar to those previously determined for soils developed on the Triassic sandstones which outcrop to the north and east (0.7103-0.7115).²⁶ Carboniferous sedimentary contexts to the west of the burial site have significantly lower⁸⁷Sr/ 86 Sr ratios (<0.7094). Both of the teeth examined contain Sr which is far more radiogenic than that in soil at the burial site or soils on other sedimentary lithologies in the region. This is especially true of the later childhood M₃ tooth which has a 87 Sr/ 86 Sr ratio of ~0.7123. The difference between the

²² P. Budd, J. Montgomery, B. Barreiro and R. G. Thomas, 'Differential diagenesis of strontium in archaeological human dental tissues', Applied Geochemistry, 15 (2000), 687–94; M. Trickett, P. Budd, J. Montgomery and J. Evans, 'An assessment of solubility profiling as a decontamination procedure for the 87Sr/86Sr analysis of archaeological human tissue', Applied Geochemistry, 18 (2003), 653–8. ²³ P. Budd, C. Chenery, J. Montgomery and J. Evans, 'You are where you ate: isotopic analysis in the

²⁵ P. Budd, C. Chenery, J. Montgomery and J. Evans, 'You are where you ate: isotopic analysis in the reconstruction of prehistoric residency', 69–78 in M. Parker-Pearson (ed.), *Food, Culture and Identity in the Neolithic and Early Bronze Age* (BAR Internat. Ser., Oxford, 2003); P. Budd, C. Chenery, J. Montgomery, J. Evans and D. Powlesland, 'Anglo-Saxon residential mobility at West Heslerton, N. Yorkshire, UK, from combined O- and Sr-isotope analysis', 195–208 in J. G. Holland and S. D. Tanner (eds.), *Plasma Source Mass Spectrometry: Applications and Emerging Technologies* (Cambridge, 2003); P. Budd, A. Millard, C. Chenery, S. Lucy and C. A. Roberts, 'Isotopic evidence for archaeological immigration and residential mobility in the UK', *Antiquity* (forthcoming); P. Budd, J. Montgomery, J. Evans and C. Chenery, 'Combined Pb-, Sr- and O-isotope analysis of human dental tissue for the reconstruction of archaeological residential mobility', 311–26 in Holland and Tanner (eds.), op. cit. this note.

²⁴ Budd et al. (2001 and forthcoming), opp. cit. in note 23.
²⁵ Budd et al., opp. cit. in note 23.

²⁶ P. Budd, unpubl. data.

TABLE 2

OXYGEN-ISOTOPE RESULTS FOR TOOTH-ENAMEL SAMPLES FROM RED HOUSE PARK BURIAL RFS-01-4.

Analyses were undertaken in duplicate. The table gives δ^{18} O values in units ‰ relative to the Vienna Standard Mean Ocean Water standard for both the enamel PO₄ (δ^{18} O_p) and after calibration to drinking water (δ^{18} O_{dw}) using A. A. Levinson, B. Luz and Y. Kolodny, 'Variations in oxygen compositions of human teeth and urinary stones', *Applied*

Geochemistry, 2 (1987), 367-71.

	Sample	Tooth	$\delta^{18} \bm{O}_{p \; VSMOW}$	$\delta^{18} \bm{O}_{dw \; VSMOW}$
Replicate 1	RFS-01–4A	${f M_2}{f right}\ {f M_2}{f right}\ {f M_2}{f right}\ {f M_2}{f right}$	16.5	-8.6
Replicate 2	RFS-01–4A		16.5	-8.6
Mean	RFS-01–4A		16.5	-8.6
Replicate 1	RFS-01–4B	${f M_3}{ m right}\ {f M_3}{ m right}\ {f M_3}{ m right}$	16.6	-8.3
Replicate 2	RFS-01–4B		16.3	-8.9
Mean	RFS-01–4B		16.4	-8.6

TABLE 3

STRONTIUM-ISOTOPE RESULTS FROM TOOTH-ENAMEL AND SOIL SAMPLES FROM RED HOUSE PARK.

 87 Sr/ 86 Sr ratios were measured using a Finnigan Neptune Multicollector Mass Spectrometer. The international standard for 87 Sr/ 86 Sr, NBS987, gave a value of $0.710263 \pm 0.000017 (2\sigma, n = 15)$. All Sr ratios have been corrected to an accepted value for the standard of 0.710240.

Sample	Туре	⁸⁷ Sr/ ⁸⁶ Sr	
RFS-01-4A RFS-01-4B RFS-01-S1 RFS-01-S2	${ m M_2}$ tooth enamel ${ m M_3}$ tooth enamel Soil leachate Soil leachate	0.71184 0.71229 0.71076 0.71026	

two teeth implies some change in childhood diet which may be related to movement, but the oxygen data suggest that, if it did take place, it was not over a long distance.

Radiogenic ⁸⁷Sr/⁸⁶Sr ratios over 0.712 are most usually associated with igneous and metamorphic rocks and essentially preclude eastern Yorkshire/Lincolnshire as a place of origin. Soils developed on the granites of NE. Scotland are not well characterised, however, and whole-rock Sr-isotope data do suggest that soil ratios could fall within this range.²⁷

Although a very specific area of NE. Scotland cannot be excluded as a possible place of childhood origin for this individual, the balance of probability from the combination of oxygen and strontium isotope data suggests Norwegian origins. The oxygen isotope composition of the drinking water only just falls within the UK range and is a better fit with the Trondheim area of Norway. The relatively radiogenic ⁸⁷Sr/⁸⁶Sr of the childhood diet could probably be produced from a terrestrial diet on the Scottish granite, but sits equally comfortably with igneous and metamorphic contexts in Scandinavia.

²⁷ A. N. Halliday, 'Coupled Sm-Nd and U-Pb systematics in late Caledonian granites and basement under northern Britain', *Nature*, 307 (1984), 229–33.



Oval brooches from Adwick-le-Street. Left AC, right AB. Photo: Bill Marsden.

THE ARTEFACTS FROM THE GRAVE By penelope walton rogers

The objects from the grave, namely a pair of oval brooches, a bowl, a knife and a key or latch-lifter, identify the burial as that of a Scandinavian woman. Similar women's burials are to be found in Viking-age Scandinavia, in the Norse colonies of the North Atlantic and on Scandinavian trade routes through the eastern Baltic and down the Russian rivers. They are singularly rare, however, in England, even within the area of the Danelaw. The arrival of Scandinavian men in northern England in the Viking Age is well attested both historically and archaeologically, but their womenfolk are less easy to perceive and the Adwick-le-Street burial is almost unique. How this woman came to be buried at this particular spot in South Yorkshire is unclear, but investigation of the brooches, and the textiles adhering to them, has at least provided some clues to the life she must have led in the years before her death.

THE OVAL BROOCHES

The oval brooches, AB and AC, are of a type commonly known as 'tortoise brooches' because of their domed shape (Fig. 5). They are cast as a thin shell of copper alloy with ornament on the outer face and there are rivets which mark

BURIAL OF A VIKING WOMAN AT ADWICK-LE-STREET

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where decorative metal bosses would have been attached. Although similar, the brooches are a non-matching pair, differing both in design and in technology (Figs. 6-7).

Brooches of this type were generally worn as a matched pair, one on either side on the upper breast, and were used to fasten the straps of the woman's gown. They were a standard feature of women's dress in Scandinavia from the 8th to the mid-10th century and more than four thousand had been recorded by 1985.²⁸ The first thorough classification of Scandinavian oval brooches was by Jan Petersen and the numbered illustrations of his publication have been widely adopted as the codes for a type-series, P1-P55.29 Ingmar Jansson has up-dated Petersen's work in the light of new finds from Sweden and added a systematic analysis of technical features and design details.³⁰ The Adwick-le-Street brooches may be classified and dated by reference to these two works.

The ornament on the brooches

Both the Adwick brooches belong to the category 'types with prominent framework', sub-category 'diamond framework', in which there is a double diamond marked out in wide raised bands.³¹ Further short bands run from the corners of the diamonds down to the brooch edge, so that the brooch is divided into eight compartments, two diamond-shaped panels on the top, two large side panels, and four small corner panels. Bosses are generally attached at the corners of the diamonds, with two extra bosses in the middle of the side panels in some variants. In P37:1, which is thought to be the earliest in the P37 series,³² the motifs within the panels are seen to be four-footed animals, sometimes gripping the hind legs of the other animals with their paws (Fig. 8a, i-iii). Adwick brooch AB maintains these motifs in a simplified form (Fig. 8b, i-iii), and may be classified as Type P₃₇:3, which is a direct derivative from P₃₇:1.³³

The same motifs recur, much debased, in the diamonds and corner panels of Adwick brooch AC (Fig. 8c, i-ii), but the side panels depart from the P37:1 original (Fig. 8a, iii). An extra band of fretwork has been added, parallel to the edge of the brooch, and a Y-shaped motif stands in front of it (Fig. 8c, iii). This motif appears in Types P37:6 to P37:12, and in some variants, such as P37:7, P37:8 and P37:9, it is clear that it represents a human head with flowing hair (Fig. 8c, iv). It is barely recognisable as such in the later forms and Adwick brooch AC, which is Type P37:12, is probably one of the latest in the series.³⁴ Here, the hair of the human head seems to have become confused with the back legs of the central, downwardfacing animal (Fig. 8a, iii), resulting in the Y-motif with curling arms.

The bands of fretwork of the P₃₇ series were often ornamented, but in brooch AB the fretwork is plain, with a depressed central band (Fig. 9a). In brooch AC,

²⁸ I. Jansson, Ovala Spännbucklor: En Studie av Vikingatida Standardsmycken med Utgångspunkt från Björkö-fynden (Uppsala, 1985), 12. ²⁹ J. Petersen, Vikingetidens Smykker (Stavanger, 1928), figs. 1–55.

²⁹ J. Fetersen, *vikingeituens Singula* (Statunger, 1977), 30 30
³⁰ Jansson, op. cit. in note 28, 98–9.
³¹ Jansson, op. cit. in note 29, 37; Jansson, op. cit. in note 28, 49–50.
³³ Jansson, op. cit. in note 28, 46–57.
³⁴ Jansson, op. cit. in note 28, 46–57.







The motifs on the brooches and their development from the original P37:1 design: (i) the corner motifs, (ii) the diamonds and (iii) the side panels. The original P37:1 motifs in the left-hand column may be compared with the debased motifs in brooches AB and AC. The side panel of brooch AC has an extra horizontal band and a motif derived from a human head, represented here (iv) by a P37:7 brooch from Øyen, Norway (after Jansson, op. cit. in note 28, 54, fig. 40d). Original motifs taken from ibid., fig. 37. *Photos by Erica Paterson; drawing by Roger Simpson, NAA; illustration prepared by Erich Kadow.*

however, there are traces of the original ornament in some of the bands and in the lower stalks (Fig. 9b-c). That the design is faint is partly due to wear on the crown of the brooch, but examination of the protected areas close to the flange suggests that it was never very clear. There is a pair of P37:12 brooches held at Bergen



Museum,³⁵ in which the ornament on the fretwork is much more deeply marked and it seems likely that the Adwick example comes at the end of a sequence of repeated copying, during which the detail has been lost (for a description of the copying process, see below, *Manufacturing technique*).

Technology

Both brooches have been cast as a single shell, but AC is a thin casting where the metal has not quite run into all the spaces of the mould, leading to missing areas in the brooch. AB, at over 102 mm, is longer than AC at 97 mm. In both cases the flange running round the edge of the brooch is flat and everted (Jansson type Kt d) and the border (the stepped area next to the flange) undecorated, but on brooch AC the flange has been coated with a white metal which is now very worn (see below). The ornamental bosses have disappeared, leaving only rivets or rivetholes surrounded by areas of white metal solder. Inside the hollow back of both brooches there is a pair of perforated tab-like supports for the pin hinge (Jansson's *dubbelt nålfäste*)³⁶ and a curled-over plate for the catch. In both cases the pin itself is iron, and textiles, representing remains of the clothing clasped by the brooch, have been preserved in the corrosion on and around it. Brooch AB has a small area missing from one end and this, the wear on the crown of the brooches and other features described below, suggest that the brooches have seen considerable use.

Erica Paterson, of York Archaeological Trust Conservation Department, has investigated the brooches during conservation and provides the following report:

³⁵ University of Bergen Museum B6483a-b: illustrated in W. W. Fitzhugh and E. I. Ward (eds.), Vikings: The North Atlantic Saga (Washington, 2000), 36, fig. 1.10.

³⁶ Jansson, op. cit. in note 28, fig. 103.



FIG. IO

Casting fault at the clasp end of Brooch AC. *Photo Erica Paterson, YAT*.



The granular appearance in the metal on the inner surface of brooch AC represents textile imprints from the casting process. *Photo Erica Paterson, YAT*.





FIG. 12 White metal coating on flange of brooch AC. Photo Erica Paterson, YAT.



One of the boss positions on brooch AB showing the white metal and boss rivet. *Photo Erica Paterson, YAT*.



FIG. 14 Dent in top left-hand field of brooch AB. *Photo Erica Paterson, YAT*.

Several features connected with the manufacture of the brooches were noted. There is a distinctive casting fault on brooch AC at the top or clasp end of the brooch, confirmed by its fluid-shaped outline and thinning edges (Fig. 10). On AB there are also several small circular indentations near the 'crown' on the outer surface, which could be casting faults. The imprint of a textile was revealed on the inside surface of brooch AC and this is thought to be from the textile used to support the wax master cast (Fig. 11). The limitation of the white-metal coating on brooch AC to the surface of the flange appears to have been deliberate, with a distinct line halfway up the flange rib, marking the edge of the plating (Fig. 12).

Examination of the pin catches and pin hinge-supports confirms that they were cast together with the shell of the brooch in both cases. In the case of brooch AB, the pin hinge-support appears to have been broken and repaired using solder and a new support. The X-ray shows that the soldered join has come apart during burial and part of the pin and the hinge-support has become dislodged and lies further towards the bottom edge of the brooch (see X-ray in Fig. 6). Evidence of the original cast hinge-support survives as two slightly raised ridges with rough broken edges, and scratches around the same area may have been made to assist the 'keying in' of solder for the new support. A small fragment of white metal from this area was analysed by EDXRF and proved to be silver with relatively high levels of tin and lead (Tab. 4, S₃).

Further features relating to wear-and-tear were observed. When the damage to the flanges of both brooches was investigated, it was noted that the broken edges were covered in soil and corrosion products and no loose fragments were discovered during the micro-excavation. This points towards pre-burial damage as the most likely occurrence. Similarly, a significant dent in the top left-hand field of brooch AB close to the fretwork bar appears to have resulted from localised impact to the outer surface of the brooch and this damage is clearly not recent (Fig. 13).

On both brooches thin patches of shiny white metal, possibly solder were revealed on the boss positions beneath creamy white and grey corrosion (Fig. 14). The fact that none of the original bosses survive on either brooch is of note. It remains unclear when they were lost. No metal fragments sufficient to constitute these bosses survive on the surface of the brooch or in the surrounding burial soil, although a small area of corrosion in the vicinity of a rivet on

TABLE 4

RESULTS OF EDXRF ANALYSIS OF THE BOWL AND BROOCHES.

Analytical results are quoted as percentages and have a relative error of approximately 1%. Det. = detected but less than 2x relative error, n.d. = not detected.

	Sample	Cu	Zn	Sn	Pb	Ag	Sb	As	Au	Ni
Sı	Bowl AA	87.67	0.34	6.66	4.16	0.22	0.13	det.	det.	det.
S2 S9 S4 S3	Brooch AB body flange white nr rivets fragment near pin support	87.44 82.43 84.62 8.42	10.87 14.03 10.18 2.70	0.04 0.07 0.90 8.32	0.52 1.28 2.78 4.42	0.02 0.05 0.03 72.58	0.03 0.06 0.03 det.	0.59 1.06 0.84 n.d.	det. det. det. n.d.	det. det. det. det.
S5 S6 S7 S8	Brooch AC body flange white nr rivets from site of boss	79.77 77.69 79.24 11.68	12.47 11.89 11.06 4.65	1.13 3·34 2.39 70.44	4.23 4.52 4.76 8.84	0.23 0.21 0.22 1.45	0.40 0.44 0.38 n.d.	1.42 1.21 1.34 det.	n.d. det. det. det.	det. det. o.og det.

brooch AC has proved to be a tin-lead alloy, with some silver (Table 4, S8). This suggests that the bosses for the most part did not become loose or corrode away during burial but were lost or removed at some point during their lifetime prior to burial. The copper-alloy boss rivets or corroded remains of these rivets survive *in situ* in many of the boss positions. Where the rivets survive well, they have not been finished off or hammered flat to make them flush with the surface of the brooch, but stick out proud of the surface.

The metallurgy of the brooches was studied by P. W. Clogg, Department of Archaeology, University of Durham, who reports his analyses here:

Analysis by EDXRF was undertaken for the following elements: copper (Cu), zinc (Zn), tin (Sn), lead (Pb), antimony (Sb), arsenic (As), nickel (Ni), silver (Ag) and gold (Au). The results are presented in Table 4.

The analysis from the body of each brooch (areas with no white metal visible, S2 and S5) suggests that they may not have been manufactured from the same alloy. Whilst both brooches are based on a copper-zinc alloy, that is, a brass, brooch AC shows significantly higher concentrations of Sn, Pb, Ag, Sb and As. The white metal on both brooches at the point where the bosses were attached (S4 and S7) appears to be a tin-lead alloy and was probably the remains of solder. The plating on the flange is also a tin-lead alloy (S6), although whether this was a decorative surface in its own right or a solder for attaching, for example, silver foil, is not clear as only low levels of silver were detected across the surface of the artefacts. The corrosion from the area of the boss associated with brooch AC (S8) is composed mainly of tin. The relatively high levels of copper and lead may be constituents of the alloy or due to contamination through the corrosion of the associated metalwork.

To summarise the work of Clogg and Paterson, the brooches are both brass, but AC was probably originally a paler shade than AB. Both will have had ornamental bosses, which in AC were possibly made of white metal, matching the white metal plating on the flange of that brooch. Both brooches are battered and worn, and in the case of AB repaired.

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Manufacturing technique

These oval brooches were made by a particular form of 'lost-wax' casting which uses a previously made brooch as the starting point.³⁷ A clay mould made from the front of the brooch was used to make several wax casts. If there was any need for re-modelling, it could be done at the wax stage and new motifs such as the human heads in the side panels of the later P37 series would be introduced at this point. Each of the wax casts was then covered in fresh clay, to form the front part of the final moulds. Wax pegs for the pin fixings were inserted into each mould, and a small piece of cloth dipped in wax was used to shape the brooch back. This explains the imprint of textile on the back of brooch AC. The back of the mould was then built up in clay and the whole two-part mould heated and the wax allowed to run off. The mould was then opened, the cloth removed and the mould reassembled and sealed so that it was ready for casting. After the new brooch had been cast, the mould had to be broken open and could not be re-used, so that no two brooches are ever identical. Holes were drilled in the hinge fixing on the back of the brooch, the catch-plate was burred over and decorative finishes applied to the front.

This process of copying from previously made brooches results in the loss of detail in later models and the imposition of new motifs on top of others. Both the Adwick brooches clearly fall several generations away from the original ancestor. In addition, the process causes the size of brooches to diminish, as each clay mould shrinks a little further than the previous one. The original P37:1 brooches were close to 110 mm long, brooch AB, P37: 3, is a few millimetres shorter and brooch AC, P₃₇:12, is shorter still.

Because so many oval brooches were made in this way, the term 'mass production' is often used for their manufacture, although this should not be understood in its modern sense of a large-scale industrial centre from which all brooches were disseminated. Only a few brooches would be made at a time and the work could be done anywhere where there was a smith with the relevant skills, available raw materials and a brooch to use as the base for the wax casts. Thus, although the original of the P₃₇ series, P₃₇:1, seems to have been made on or near Björkö, Sweden, its later derivatives could have been made in any of the towns or villages of Scandinavia.38

Dating and distribution

The P37 series as a whole has been firmly placed in the 9th century, based on the dateable objects with which the brooches have been found in sealed graves in Scandinavia.³⁹ Dating individual brooches more closely is difficult because the process of copying did not proceed at a regular pace and an early brooch kept in

³⁷ S. Horn Fuglesang, 'Mass production in the Viking Age', 198–9 in E. Roesdahl and D. Wilson (eds.), From Viking to Crusader: The Scandinavians and Europe 800–1200 (Uddevalla, 1992).
³⁸ Jansson, op. cit. in note 28, 49–50; E. Roesdahl, Viking Age Denmark (London, 1992), 103.
³⁹ Petersen, op. cit. in note 29, 41–4; Jansson, op. cit. in note 28, 120–37.

good condition could be used as the basis for a new brooch at a late date. The P37:3 derivatives seem to fall relatively early in the sequence, while the P37:12 variants are late, but both the Adwick-le-Street brooches show considerable loss of detail and may be regarded as late examples of their individual variants.

The brooches of the P₃₇ series are the most numerous of the 9th-century types and P37:3 the most common variant. There are many examples of P37:3 in graves from Norway, Sweden and Denmark. A P37:3 brooch was also found in a cemetery near Dublin, probably at Islandbridge, in a burial which must post-date the founding of the Norse colony there in A.D. 841.40 P37:12 is a less numerous type, which seems to have been more common in Norway than Sweden.⁴¹

The combining of old and new types in one grave is unusual, most brooches having been worn as matching pairs. There is a grave at Birka, Bj479, where a P37:2 brooch was combined with a P37:8,42 and in Norway and Ireland there are a few further examples of different variants of P37 worn together, although they are not such distantly related types as P37:3 and P37:12.⁴³ It is possible that the Adwick-le-Street woman had lost one of her brooches and had to replace it with the nearest match available to her, in which case brooch AB might represent one of her original set. Brooch AC is a worn example of a late variant, P37:12, and on this basis the burial may be tentatively placed towards the end of the 9th century, or perhaps even the beginning of the 10th.

Although no other examples of the P37 series have been found in England, three other pairs of oval brooches may be mentioned. They come from graves at Leeming Lane, Bedale (N. Yorks), Claughton Hall, near Garstang (Lancs), and Santon Downham (Norfolk).44 Further fragments have recently been found in Norfolk, but not in a burial and they may have been destined for recycling.⁴⁵ The Bedale, Garstang and Santon Downham brooches are all matching pairs of the double-shelled P₅₁ series which replaced P₃₇ as the dominant type in the 10th century.

THE TEXTILES AND COSTUME

Remains of textiles and cords have been preserved in association with the iron pins on the backs of the brooches (Fig. 15). On both brooches the uppermost layer is a flat area of relatively coarse textile which must represent the innermost garment as worn. The textile is woven in tabby (plain weave), from Z-spun yarn, with thread-counts of 12×9 per cm on AB and 14×9 per cm on AC. There are further traces of a similar textile on one face of the knife AF, where it lay against the upper

⁴⁰ J.Bøe, Norse Antiquities in Ireland, III, in H.Shetelig (ed.), Viking Antiquities in Great Britain and Ireland (Oslo, 1940), 38–40; S. H. Harrison, 'Viking graves and grave-goods in Ireland', 61–75 in A.-C. Larsen (ed.), The Vikings in Ireland (Roskilde, 2001), 67, fig. 5.
⁴¹ Jansson, op. cit. in note 28, 204.
⁴² Jansson, op. cit. in note 29, 41; Bøe, op. cit. in note 40, 38–40.
⁴⁴ E. Roesdahl, J. Graham-Campbell, P. Connor and K. Pearson (eds.), The Vikings in England and in their Danish Homeland (London, 1981), 77, catalogue no. E28. The Bedale brooches were mistakenly attributed to Northallerton in A. Bjørn and H. Shetelig, Viking Antiquities in England (Oslo, 1940), 15 and 19; ibid., 15 and 21; Roesdahl and Wilson, op. cit. in note 37, 324, catalogue no. 365.



FIG. 15 The textile remains on the backs of the brooches: left AC, right AB.

arm of the body. The fibre is a fully processed plant fibre, either low-grade flax or hemp. It does not connect with the pins of the brooches, but behind it on both brooches lies a complex of textile loops and cords which pass round the brooch pin. The loops are made from a fine linen tabby, $24/Z \times 24/Z$ per cm. Each loop seems to have been constructed as a cut strip folded lengthways, with the raw edges turned in and pressed flat, to give a neatly made strap 4 mm wide. In places the straps have a blue tinge, but analysis by absorption spectrophotometry has shown this to be from corrosion rather than dye. The loops and the coarser inner garment are likely to have been a natural white.

On brooch AB one of the loops passes around the hinge and the other passes around the tip. Behind the strip at the hinge there is a bundle of four or five Z-spun yarns which seems to form a second loop, mirroring the path of the first. On brooch AC, there is again a loop at both ends of the pin, but here there is also a second layer of the same material behind the first, which may represent a second set of loops. A series of coarse threads are entangled with the hinge end of this pin and from this emerges a plied cord (Z2S), approximately a millimetre thick, which follows an irregular path towards the edge of the brooch.

These remains represent a style of clothing which was worn throughout the Scandinavian world in the Viking Age, apart from Finland and Gotland where

there were discrete local costumes (Fig. 16).46 At its simplest, there was a full-length linen chemise, over which was worn a length of fabric wrapped around under the arms.⁴⁷ The outer fabric had loops attached at the top edge, long loops at the back and short loops at the front, which were fastened by the pairs of oval brooches. This outer garment or 'strap-dress' could be open down one or both sides and in some cases it was made from two pieces of matching or non-matching fabrics, in which case extra loops were required (Fig. 17).

In the Birka cemetery, the inner chemise was often made of fine pleated linen,48 whereas the woman buried at Adwick-le-Street wore a plainer, coarser garment. This had two pairs of loops for the front of the outer gown (the hinge end of the brooches), which suggests she was wearing the style of strap-dress made from two fabrics. One of the loops on AB seems to have been replaced by a bundle of cords, presumably as a running repair. The main fabric of the outer gown has not been preserved, but they were often made of blue wool twill. There is an arrangement comparable with the Adwick costume, for example, in a 9th-century grave at Birka, Bj597, where a pair of P37:1 brooches have pairs of linen loops at the hinge end of the brooches, representing the front loops on the gown, and single loops at the opposite end representing the back.⁴⁹ The gown was in that instance a dark blue diamond twill.

Flemming Bau has reconstructed the dress of the women at Birka by drawing on Inga Hägg's investigative work and the images of women in Viking-age metalwork.⁵⁰ He argues that two pairs of loops at the hinge end of the brooch and single loops at the pin tip represent a suspended apron worn over the main gown, as shown in Figure 17. This would fit the Adwick evidence. In some of the Birka graves a metal chain was suspended from one of the brooches to support accessories such as shears and needle-cases. It is likely that the plied cord running from the hinge end of brooch AC was used in a similar way to suspend the small knife from the brooch. In many graves of the Viking Period, the paired brooches were combined with a small brooch fastening the chemise at the neck, a larger brooch for the shawl and a row of beads strung between the oval brooches. There is no evidence for shawl or beads on the Adwick woman.

This style of clothing would have looked entirely alien to the women of Anglo-Saxon Yorkshire. In the 9th century they would be wearing a long-sleeved gown, which stretched from neck to foot and did not require any brooches.⁵¹ In turn, the rich madder reds and browns of Anglo-Saxon clothing would probably have been a surprise to a Scandinavian, who would be more used to woad blue, green and grev.⁵²

⁴⁶ S. H. H. Kaland, 'Dress', 192-3 in Roesdahl and Wilson (eds.), op. cit. in note 37.
⁴⁷ I. Hägg, Kvinnodräkten i Birka (Uppsala, 1974); eadem, 'Viking women's dress at Birka: a reconstruction by archaeological methods', 316-50 in N. B. Harte and K. G. Ponting (eds.), Cloth and Clothing in Medieval Europe: Essays in Memory of Professor E. M. Carus-Wilson (London, 1983).
⁴⁸ Hägg (1983), op. cit. in note 47, 344-7.
⁴⁹ Hägg (1974), op. cit. in note 47, 71, 86 and 126.
⁵⁰ F. Bau, 'Seler og slæb i vikingetid: Birka's kvindedragt i nyt lys', Kuml (1981), 13-39.
⁵¹ G. R. Owen-Crocker, Dress in Anglo-Saxon England (Manchester, 1986), 96-100 and 138-41.
⁵² P. Walton, 'Dyes of the Viking Age: a summary of recent work', Dyes in History and Archaeology, 7 (1988), 14-20; P. Walton Rogers, Textile Production at 16-22 Cobbergate (The Archaeology OYA), 1760.

P. Walton Rogers, Textile Production at 16-22 Coppergate (The Archaeology of York, 17/11, York, 1997), 1769.







THE BOWL

Fragments AA and AG represent the remains of a copper-alloy bowl, damaged by ploughing. From the curve of the rim it may be reconstructed as 180–190 mm in diameter and it was probably a little over 50 mm deep. It has a simple everted rim, 8 mm wide, and on one piece there is a punched circular perforation, 2 mm in diameter, with part of a second 15 mm away. There are fine encircling lines resembling lathe marks on the outer surface, which suggest that after the bowl had

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been beaten to shape, it had been finished on some sort of turning equipment. Erica Paterson noted hammer marks under the rim and an incised lattice pattern in the lower part of the bowl on the inner surface (Fig. 18). She also observed 'fine randomly aligned scratches visible at \times 10 magnification which suggest extensive wear'. The metal is approximately I mm thick in both the body of the vessel and the rim, and EDXRF by Phil Clogg shows it to be a leaded bronze (Tab. 4). Plant tissue and fragments of wood in association with the bowl were noted during conservation and the wood was identified as a hardwood, probably hazel, Corplus avellana L., by S. J. Allen, York Archaeological Trust Wood Centre.⁵³ These are thought to be part of the earth matrix of the burial, which happen to have been preserved by association with the corroding copper alloy, rather than the contents of the bowl itself.

Bronze vessels, including dishes, bowls and 'kettles' or cauldrons, appear in the better equipped graves of men and women in Scandinavia and the Scandinavian colonies.⁵⁴ They occur in 9th-century graves in Norway and the Norse burials of Ireland and the Scottish Isles, but seem to become more common and more widespread in the 10th century.⁵⁵ Petersen identified the Norwegian examples as imports from the British Isles, a view challenged by David Wilson who pointed out that the Scandinavian metalworking industry would have been capable of producing such vessels.⁵⁶ Gustaf Trotzig, however, in his survey of copper-alloy vessels found in Scandinavia (as background to his study of the Gotland finds), has been able to show that metal vessels occur as discrete groups at different periods of Scandinavian history and in each case their technology matches some external European production centre.⁵⁷ He re-asserts Petersen's view that vessels made from beaten sheet metal, which he classifies as C-vessels, were made in the British Isles in the 7th-10th centuries and that the 9th- and 10th-century Scandinavian examples of this type are 'Anglo-Irish' imports.58 Bowls of similar shape and appearance found in 10th- and 11th-century graves in southern Scandinavia are technically different, being made from cast blanks hammered to shape (B-vessels), often with a high zinc content: these were probably made in Germany.⁵⁹

The bowl from the Adwick burial belongs to Trotzig's C-vessel group, identified by the even nature of the metal, which is no thicker in the rim than in the body. C-vessels were made from a circle of sheet metal beaten against a wooden

D. Wilson, St Ninian's Isle and its Treasure (Oxford, 1973) 107, n.10.
 ⁵⁷ G. Trotzig, Craftsmanship and Function: A Study of Metal Vessels found in Viking Age Tombs on the Island of Gotland, Sweden

(Stockholm, 1991), 13-16 and passim.

Ibid., 14 and 50-1

⁵³ E. Paterson, York Archaeological Trust Conservation Record Sheet for Red House Park Sewer Requisition,

⁵⁴ J. Petersen, *Vikingetidens Redskaper* (Oslo, 1951), 384–96; O. Voss, 'Hørninggraven', 189–203 in M. Iversen (ed.), *Mammen: Grav, Kunst og Samfund i Vikingetid* (Aarhus, 1991), 199–201; T. Løken, 'The correlation between the shape of grave monuments and sex in the Iron Age, based on material from Østfold and Vestfold', 53–64 in R. Bertelsen, A. Lillehammer and J.-R. Næss (eds.), Were They All Men? An Examination of Sex Roles in Prehistoric Society (Stavanger,

^{A. Entertaining and J. M. Farry, M. P. 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1987, 1988,}

⁵⁹ G. Trotzig, 'Metallkärl av koppar och dess legeringar under vikingatid och tidig medeltid — en systematisering', *Fornvännen*, 73 (1978), 5–19 at pp. 10–11; idem, op. cit. in note 57, 67 and passim; Voss, op. cit. in note 54, 199–200 and 203.



The bronze bowl, AA/AG. (a) Reconstructed; (b) the lattice pattern in lower part of bowl on inner surface; (c) X-ray; (d) photo of the two main fragments; (e) close-up of the lattice pattern. Originally 180–190 mm diameter and ~50 mm deep, with an everted rim, 8 mm wide; metal c. 1 mm thick. Note small rim fragment with one punched circular perforation and part of a second. Largest fragment 310 × 55 mm. Drawings by Roger Simpson, NAA; photographs by Bill Marsden and Erica Paterson; X-ray by Erica Paterson, YAT.

former and then finished on a lathe. Vessels made from beaten sheet metal are found in furnished graves of Anglo-Saxon England and analysis of six hanging bowls from this period shows them to have a lead-tin-zinc ratio similar to that of the Adwick bowl.⁶⁰ These early vessels are generally regarded as having been manufactured in northern and western parts of Britain, although production may have been restricted to Irish workshops in later centuries.⁶¹ The Adwick woman is therefore most likely to have brought the bowl with her on her journey from her homeland into Yorkshire.

The Adwick bowl resembles a small basin and Trotzig suggests that shallow bowls with everted rims and inscribed ornament on the inner face, were intended for water. The pair of circular holes in the rim probably mark where a mount with a ring would have been attached, so that the vessel could be hung up when not in use. These basin-like bowls — whether technologically B-vessels or C-vessels were probably used for washing. One such bowl from Nordre Kaupang, Norway, has the beginning of a runic inscription which may be interpreted as Old Norse i*mundlaugu*..., 'in the hand-basin ...',⁶² and this is echoed by *mudlög* inscribed in a later bowl from Åker, Södermanland, Sweden.⁶³ *Mundlaug* literally means 'handbath' and is related to Old English mundleow (mundleu), a word associated with similarly shaped basins, 250-300 mm diameter and 50 mm deep, used for ritual hand-washing in the Christian mass.⁶⁴ A basin close to the Adwick example in size (210 mm diameter and 50 mm deep), with everted rim and incised decoration in the base, was found in a woman's chamber grave at Hørning, Denmark, along with a small side-table thought to be a wash-stand.⁶⁵ Although metal vessels generally are found in both male and female graves, it is possible that the handbasins have a particular association with women. Ibn Fadlan described how, among the Volga Rus, a girl would bring a bowl of water every morning so that the men could wash, while in medieval Norway the right of a woman to inherit a mundlaug from her mother was written down in the Frosta-thing Law.⁶⁶

THE IRON KNIFE

The iron knife, AF, has a straight back which slopes down towards the tip, at an angle to the tang (Fig. 19). The tip and part of the tang are absent, leaving a surviving length of 65 mm. The blade is triangular in section and its length may be reconstructed as approximately 55-60 mm. The blade width is currently about 15 mm, but it may have been wider originally, as the cutting edge has the elongated S-shape which comes with heavy wear.⁶⁷ Remains of a wooden handle were identified by Erica Paterson.

⁶⁰ W. A. Oddy, M. Bimson and M. C. Cowell, 'Scientific examination of the Sutton Hoo hanging-bowls', 299–315 in R. Bruce-Mitford, *The Sutton Hoo Ship Burial*, 3i (London, 1983).
⁶¹ S. Youngs, pers. comm.
⁶² A. Liestøl, 'The hanging bowl, a liturgical and domestic vessel', *Acta Archaeol.*, 24 (1953), 163–70 at p. 165.

 ⁶³ Trotzig, op. cit. in note 57, 132.
 ⁶⁴ Liestøl, op. cit. in note 62, 166–70.

 ⁶⁵ Voss, op. cit. in note 54, 203.
 ⁶⁶ Trotzig, op. cit. in note 57, 132.
 ⁶⁷ P. J. Ottaway, Anglo-Scandinavia Ironwork from Coppergate (The Archaeology of York, 17/6, London, 1992), 574.



FIG. 19

The iron knife, AF, and the iron key/latchlifter, AD/AE. Above: Fragment of iron knife, including part of the blade and part of the tang. Spine slopes downwards to tip (Ottaway type C3); the blade edge is worn. The mineralised organics on the tang are wood. Length 65 mm; width (blade) 15 mm. Below: Two fragments of an incomplete iron object, consisting of a flat bar with a hooked end, probably a latch-lifter. Length 82 mm; width 12 mm × 4 tapering to 7 mm × 5 at hooked end. *Drawings by Roger Simpson, NAA*.

Straight-backed knives which slope downwards at an angle to the tang fall into Ottaway's category C3.⁶⁸ They are largely limited to the 9th–11th centuries and are found in England within the Danelaw, at York, Lincoln and Thetford, and in Scandinavia at sites such as Birka, Trelleborg, Århus and Fyrkat. They often have particularly long tangs, although the tang of the Adwick-le-Street example seems to have been broken in antiquity.⁶⁹ Knife AF was found by the woman's left upper arm, but if the long straggling cord on the back of brooch AC represents the suspension cord, the knife must have hung on the right-hand side, and will have fallen to the left as the body was placed in the grave. Remains of textile on one face of the knife blade are likely to be from the woman's upper sleeve (see above).

THE IRON LATCH-LIFTER OR KEY

An iron object, AD/AE, was found at the foot of the grave with the bowl and, like the bowl, is incomplete. It has a wide flat stem with an angular crook with pointed tip at one end (Fig. 19). Part of the stem is missing, the surviving length being 82 mm, but comparison with similar items from Norway suggests that the handle would have ended in a suspension loop.⁷⁰ This is either a latch-lifter, used to lift the sneck (door-latch) from the outside, or a simple form of key. Latch-lifters were common in Anglo-Saxon graves of the 5th to 7th centuries, and there is an

⁶⁹ E. Paterson, pers. comm.

⁶⁸ Ottaway, op. cit. in note 67, 558–85.

⁷⁰ Petersen, op. cit. in note 54, figs. 254–5.

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example with a curved crook associated with keys and a chain from 8th-century levels at Fishergate, York,⁷¹ although they are rare in late Anglo-Saxon England. Keys are not always distinguished from latch-lifters in early catalogues of Scandinavian material, but it is obvious that they were found in both men's and women's burials of the Viking Age.⁷² They include an example similar to that from Adwick, found in a Norse burial that included a knife, a sickle, an Insular drinkinghorn mount and a clay bead, at Pierowall, Westray, Orkney.⁷³

THE SIGNIFICANCE OF A VIKING WOMAN'S BURIAL IN THE DANELAW By penelope walton rogers

This has proved to be the burial of a mature woman, in her forties at least, dressed in a Scandinavian strap-dress and apron, fastened by late 9th-century oval brooches. She was accompanied by a bronze bowl, a knife and a key/latchlifter, all of which are indicators of a pagan Viking woman's burial. The greatest number of parallels for brooch AC (P37:12) and the bowl AA/AG lie in 9th-century Norway and the Norse settlements, and the isotope analysis has placed the woman's origin probably in Norway or perhaps NE. Scotland. To understand how unusual it is to find a woman of this background, buried apparently on her own a few kilometres south of the Humber, requires a review of the evidence for Viking women in the British Isles.

The Icelandic sagas describe women accompanying men, or even leading expeditions, during the colonisation of the islands of the North Atlantic, and burials of women with paired oval brooches have been found in the Northern Isles, Ireland and Iceland. However, a recent study of the mitochondrial DNA of the presentday populations of Iceland, Orkney and the Western Isles has shown that male settlers probably outnumbered female.74 Mitochondrial DNA is inherited exclusively down the female line and the study has shown that Scandinavian women have contributed relatively little to the populations of the Scottish islands (the greatest contribution being 35% on Orkney), but 60% of the Icelandic sample trace their maternal ancestry back to pre-Scandinavian Scotland. This has been taken to mean that the early Norse settlers of the Northern Isles mostly took wives from amongst the native population before moving on to settle Iceland. Furthermore, in oth-century Norway the women of coastal districts appear to have experienced a rise in status and were sometimes buried with the tools of occupations previously regarded as male. This would support the view that women were often left to look after the farms and workshops while men were away on Viking expeditions.⁷⁵

⁷¹ N. S. H. Rogers, Anglian and Other Finds from 46-54 Fishergate (The Archaeology of York 17/9, London, 1993),

^{1425.}
⁷² Petersen, op. cit. in note 54, 463–71; Løken, op. cit. in note 54, 56–7.
⁷³ Grave 16: J. Graham-Campbell and C. E. Batey, op. cit. in note 55, 134–5.
⁷⁴ Anon., 'New light shed on the legacy of the Vikings', *Blueprint, The Newsletter of the University of Oxford* 1/10, 10 May 2001 (Oxford 2001): *http://www.ox.ac.uk/blueprint/2000–01/1005/17.shtml*⁷⁵ L. H. Dommasnes, 'Male/female roles and ranks in Late Iron Age Norway', 65–77 in Bertelsen et al., op. cit.

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In England Viking women are even less in evidence. Viking burials are thinly distributed through the English counties,⁷⁶ but women are very poorly represented in this group and even the three burials with paired oval brooches already mentioned cannot be confidently identified as female. The pair from Claughton Hall (Lancs) came from a mound burial containing a cremation with typically male grave goods, in which the brooches had been placed back-to-back as a container for a tooth and two beads. B. J. N. Edwards has suggested that these may have been mementoes of the man's wife.77 The brooches from Santon Downham, Norfolk, were excavated in 1867 and the only other recorded find from the grave was a sword, which may indicate a double male-female burial, or another male with brooches as a keepsake.⁷⁸ The Bedale brooches came from another 19thcentury excavation and were found in the usual position on the shoulders, but there was also a supposed spearhead on the chest.⁷⁹

Other burials which might represent Scandinavian females include a young adult buried with a penannular silver armlet and attached ring at St Mary Bishophill Junior, York,⁸⁰ and a woman with a necklace incorporating Scandinavian pendants at Saffron Walden, Essex.⁸¹ Some burials with a single artefact in the grave, such as the woman with a comb at St Patrick's Chapel, Heysham (Lancs), are regarded as 'possibly Scandinavian', because the Christian English were normally buried without grave goods,⁸² and the woman buried with a horse at Sedgford (Norfolk), would fall into the same category.⁸³ At Cambois, Bedlington (Northumberland), there is also a Scandinavian-style mound burial with the grave outlined in stones and one of the three people buried there was a woman aged 45-60, although the only brooch from the burial was Carolingian or Anglo-Saxon in origin.⁸⁴ Finally, the mass of human bones found at Repton (Derbys), which are thought to include the remains of members of the Viking army, were at least 80% male. Since the bones may have been jumbled with those from earlier burials at the Mercian royal burial site, any females included in the remaining 20% could have been Anglo-Saxons.⁸⁵ While it is possible that some women of Scandinavian origin were buried without grave goods in churchyards within the Danelaw,⁸⁶

⁷⁸ Richards (2002), op. cit. in note 76, 162.

⁷⁶ J. Graham-Campbell, 'Pagan Scandinavian burial in the central and southern Danelaw', 105–23 in J. Graham-Campbell, R. Hall, J. Jesch and D. N. Parsons (eds.), Vikings and the Danelaw: Select Papers from the Proceedings of the 13th Viking Congress (Oxford, 2001); J. D. Richards, Viking Age England, 2nd ed. (Stroud, 2000); idem, 'The case of the missing Vikings: Scandinavian burial in the Danelaw', 156–70 in S. Lucy and A. Reynolds (eds.), Burial in Early Medieval England and Wales (Soc. Med. Arch. Mon. 17, 2002).
 ⁷⁷ B. J. N. Edwards, Vikings in Northern England: The Artifacts (Lancaster, 1998), 14–17.

⁷⁹ W. Hylton Longstaff, 'Archaeological intelligence: Anglo-Saxon Period', Archaeol. J., V (1848), 220–1. The spearhead is not illustrated and its whereabouts unknown, but it is possible that it was in fact a spear-shaped

weaving batten. ⁸⁰ L. P. Wenham, R. A. Hall, C. M. Briden and D. A. Stocker, *St Mary Bishophill Junior and St Mary Castlegate* (The Archaeology of York 8/2, London, 1987), 80.

Richard's (2000), op. cit. in note 76, 151; Graham-Campbell (2001), op. cit. in note 76, 114.

⁸² Richards (2002), op. cit. in note 76, 161.
⁸³ Graham-Campbell (2001), op. cit. in note 76, 112.
⁸⁴ M. L. Alexander, 'A Viking grave from Cambois, Bedlington, Northumberland', *Medieval Archaeol.*, 31 (1987), 101-0

⁸⁵ J. D. Richards, 'Boundaries and cult centres: Viking burial in Derbyshire', 97–104 in Graham-Campbell et al. (cds.), op. cit. in note 76, 99–101; idem (2002), op. cit. in note 76, 166–7. ⁸⁶ Richards (2002), op. cit. in note 76, 162–3.

there is as yet nothing to compare fully with the Adwick woman and her traditional pagan Scandinavian burial.

Finds from excavations other than burial sites do not reveal any better evidence for women. Among dress accessories from urban and rural sites, there are many examples of the ring-headed pins which were used as cloak fasteners primarily (though not exclusively) by Scandinavian men, and the disc brooches worn by Anglo-Saxons of both sexes.⁸⁷ A trefoil brooch of the type used to fasten women's shawls in Scandinavia was found at Low Dalby (N. Yorks),⁸⁸ and in Lincolnshire a recent survey of metal-detected finds brought into local museums under the Portable Antiquities Scheme yielded a much greater number of Scandinavian and Scandinavian-influenced brooches, some of which are fasteners for women's clothing.⁸⁹ At first, this seemed to imply the presence of Scandinavian women in the area, but assessment of the material from a costume standpoint gives a different view. First of all, although the material includes a substantial element dated to the 9th and early 10th centuries, there are no examples of the oval brooches that were a standard feature of the dress of women from the broad middle band of Scandinavian society at this time. Secondly, the brooches are all shawl fasteners, represented by equal-armed, trefoil and large disc brooches, or chemise and shirt fasteners, represented by small disc, quadrangular and bird brooches. In Viking-age cemeteries these mostly appear as 'optional extras', in smaller numbers than the paired oval brooches. Such secondary brooches would readily transfer into the typical Anglo-Saxon woman's costume, which was essentially a longsleeved overtunic, chemise, veil and cloak or shawl. In contrast, the bulky oval brooches of the Scandinavian strap-dress would not find a place in Anglo-Saxon dress. Research on folk costume in Scandinavia has shown that regional clothing styles would only travel outside their district of origin in those rare instances where a woman married outside her area, but metal fasteners such as buckles, buttons and brooches, might become dispersed outside their region by trade and other exchange mechanisms.⁹⁰ Indeed, review of the early history of equal-armed and trefoil brooches shows that they originally arrived in Scandinavia by a similar process. It is therefore reasonable to argue that the shawl and chemise fasteners found in Lincolnshire arrived as gifts and merchandise from Scandinavia, rather than on the clothing of Viking women.

Within the crafts, too, men are more clearly visible than women. Scandinavian influence is obvious in traditionally male crafts such as metalworking and stone sculpture, but in textile production, which is known to have been a female preserve,⁹¹ the tools and most of the products remain Anglo-Saxon. There are single conical ceramic Scandinavian spindle whorls from Lincoln and York, but

⁸⁷ V. I. Evison, 'A Viking grave at Sonning, Berkshire', Antiq. J., 49 (1969), 330–45, at p. 332; Owen-Crocker, op. cit. in note 51, 133-4 and 151-2.

<sup>crt. in note 51, 133-4 and 151-2.
⁸⁸ Richards (2000), op. cit. in note 76, 151.
⁸⁹ K. Leahy and C. Paterson, 'New light on the Viking presence in Lincolnshire: the artefactual evidence', 181-202 in Graham-Campbell et al. (eds.), op. cit. in note 76.
⁹⁰ E. M. Straume, 'On the question of exogamy as a basis for distribution in the Germanic Iron Age', 97-101 in H. Gjostein Resi (ed.),</sup> *Produksjon og Samfunn* (Oslo, 1995), 99.
⁹¹ P. Walton Rogers, *Textile Production at 16-22 Coppergate* (The Archaeology of York 17/11, York, 1997), 1821-2;

Dommasnes, op. cit. in note 75.

these contrast with over a hundred hemispherical stone whorls, from a variety of sites in the region, which follow directly in the native Anglo-Saxon tradition.⁹²

This does not mean that women were entirely absent from the Scandinavian invasion of northern England. According to Egils saga Skalla-Grímssonar, King Erik Bloodaxe brought his wife, Gunnhild, to York, during his exile from Norway, while the Anglo-Saxon Chronicle records that Hæsten, who raided up the Thames in 892, brought a wife and two sons with him. There are also Norwegian and Icelandic women's names in 11th-century Yorkshire documents,93 and while these may have resulted from men giving names to the female children of mixed marriages, Judith Jesch is of the opinion that the women's personal names preserved in place-names of eastern England must represent at least some women settlers coming in the wake of the Viking armies.⁹⁴ Nevertheless, the evidence as a whole implies that a Scandinavian woman would have been an unusual sight in 9th-century Yorkshire.

Some comments may be made concerning the status of the Adwick woman within Scandinavian society. In the poem, Rígspula, 'The Rhyme of Rígr', three different classes of people are described: slaves, free men and women, and nobility.⁹⁵ The wearing of 'brooches at her shoulders' seems to indicate a freeborn woman. Such brooches are not described for the slave's wife or the earl's mother, and a survey of the evidence from Denmark has confirmed that the poorest and the richest women (as indicated by grave goods) did not wear oval brooches.⁹⁶ The same poem (stanza 23) seems to suggest that suspended keys had an association with marriage, and this is supported by lines in *Prymskviða*, in which the god Thor dresses as a bride with 'jangling keys' (st. 19).⁹⁷ There is some controversy over the date and provenance of *Rígspula*, but if it is accepted that it reflects the dress of the different social classes of the Viking Age, then the Adwick-le-Street woman is likely to have been both freeborn and married. Within that category there must have been many different degrees and the Adwick burial suggests someone at the lower end of the scale, or at least someone down on her luck. She has been buried without any of the secondary central brooch(es) and beads often seen in other graves, and her oval brooches are battered, repaired and a mis-match. Only the bronze bowl hints that she may have seen better times.

⁹² J. E. Mann, 'Early medieval finds from Flaxengate, 1: Objects of bone, stone, horn, ivory, amber and jet', The Archaeology of Lincoln 17/1, 22-57 (Lincoln, 1982), at pp. 22-3, No. 184; D. M. Waterman, Late Saxon, Viking and early medieval finds from York', Archaeologia, 97 (1959), 59-105 at p. 93, No. 6; Walton Rogers, op. cit. in note 91, ⁹³ G. Fellows Jensen, Scandinavian Personal Names in Lincolnshire and Yorkshire (Copenhagen, 1968).
 ⁹⁴ J. Jesch, Women in the Viking Age (Woodbridge, 1991), 77–8.
 ⁹⁵ Translated with a commentary in R. I. Page, Chronicles of the Vikings: Records, Memorials and Myths (London, 1995),

^{150–5.} ⁹⁶ L. Hedeager Madsen, 'Women's dress in the Viking Period in Denmark, based on the tortoise brooches and textile remains', 101–6 in P. Walton and J. P. Wild (eds.), *Textiles in Northern Archaeology: NESAT III Textile Symposium* in York (London, 1990), 104. ⁹⁷ Thanks are due to Thor Ewing for drawing my attention to the significance of suspended keys and for providing

a translation and commentary on the relevant parts of *Prymskviða*.

CONCLUSION

By greg speed

The Adwick-le-Street woman's burial seems to belong to the period of Viking settlement and consolidation in the late 9th century. Place-name evidence shows that parts of the Doncaster area had become heavily populated by Scandinavian settlers by the time she died, although such settlement may have been concentrated on the lower-lying land immediately to the east, and the location of her grave would conventionally be regarded as lying within a more typically English settlement zone. The location of any Romano-British or Anglo-Saxon settlement at Adwick has yet to be identified, although as noted above, the '-le-Street' suffix to the village name does suggest that it originated nearer to the Roman Ridge road and hence nearer to the burial site. The pottery discovered at Lutterworth Drive in 1968 suggests later Romano-British activity nearby. Although interpreted as Romano-British by association with the pottery, the inhumations and cremations identified there could equally have been of Anglian- or Viking-period date, although unfortunately the cremation vessels were not available for identification. Thus the Adwick-le-Street Viking woman may have been interred close to an already-established burial site, commanding a wide view over the low-lying land to the east.

The presence of a Viking burial was an unexpected find. Not only are no previous burials of this date known within South Yorkshire, but there is a notable paucity of recognisable Scandinavian burials from the Viking Age in England. Apart from the mass burial at Repton and the nearby cremation cemetery at Heath Wood, Ingleby, both of which have been interpreted as instances of Viking armies over-wintering in the vicinity, recognisable Scandinavian burials are few and scattered.⁹⁸ Much of the recorded evidence for Viking burial has come from within Christian churchyards or within areas subsequently taken over by Christian churches, as may have occurred at Kildale (N. Yorks). However, recent work by Dawn Hadley has shown that Scandinavian burials may continue to be difficult to identify due to the variety of burial rites used in northern England in the 9th to 11th centuries and the range of cemetery sites used, often for short periods.⁹⁹

The position of the Adwick-le-Street grave within one of the in-filled Romano-British trackway ditches suggests that the ditch hollow remained as a visible earthwork. The trackway might still have been in use as a long-lived feature in the landscape and suggesting a continuity of land-use throughout much of the first millennium A.D. It is perhaps notable that two of the four burials in England to have produced Viking oval brooches have been found either on (at Bedale), or beside a trackway close to (at Adwick-le-Street) the same major N.–S. Roman route, Dere Street at Bedale and the Roman Ridge at Adwick-le-Street. This road clearly remained a major routeway throughout this period as indeed it has since, being followed closely by the former Great North Road and modern A1. Although the gradiometer survey results suggest that there could be other burials located

⁹⁸ Richards (2002), op. cit. in note 76.

⁹⁹ D. Hadley, 'Burial practices in northern England', 209–28 in Lucy and Reynolds (eds.), op. cit. in note 76.

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along the line of both trackway ditches at Adwick-le-Street, both to the north and south of the area examined, they are not necessarily also Viking-period in origin. Both Romano-British and Early Anglian burials are frequently found within or respecting earlier field boundaries, and a long-lived boundary might have attracted burials of more than one period. Recently excavated regional examples of ditchassociated burials include late-Roman or early post-Roman inhumations excavated in 1996 at Parlington Hollins near Garforth, some 25 km to the north of Adwickle-Street, and a 5th- to 6th-century Anglian cemetery excavated near Catterick Bridge (N. Yorks), in 1998 which included inhumations and cremations buried within or adjacent to a partially silted Romano-British field-boundary ditch, with a more formally laid-out inhumation cemetery nearby also aligned to the ditch.¹⁰⁰ The description of the Viking burial at Bedale published in 1848 places that burial in the centre of Dere Street, although it seems more likely that the grave will have been cut to one side, perhaps into one of the roadside ditches, rather than placed in the centre of the roadway, which was probably still used at the time.

The extreme shallowness of the Adwick-le-Street burial and the extensive modern plough damage observed suggests that other burials might previously have been lost, and that any remaining burials are under imminent threat both from continued ploughing and from illicit metal-detecting. The recovery of the bronze bowl from the burial, which had been extensively damaged and displaced into the topsoil as a result of recent ploughing, was purely as a result of monitoring during topsoil stripping, and might not have been recovered at all after another ploughing episode. Other grave goods might already have been lost.

The woman's shallow burial, taking advantage of a half-filled trackway ditch, is in some respects reminiscent of a burial at Ballyholm (Co. Down), Northern Ireland, where a woman was buried on her own on a raised beach near the sea, with a pair of P₃₇ brooches and a bronze bowl with wool in it.¹⁰¹ This coastline faces towards the sea-lane between the Scottish islands and the Isle of Man and Dublin. Graham-Campbell and Batey refer to this burial as a 'temporary expediency',¹⁰² and the same may be true of the Adwick-le-Street woman. She and the companions who buried her may have been in transit between the Humber estuary and Lincoln, or she may have come from one of the farms newly settled by Scandinavians in the area. Whatever the story behind her death, she represents the earliest evidence for a Viking woman in Yorkshire.

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¹⁰⁰ I. Roberts, A. Burgess and D. Berg (eds.), *A New Link to the Past: The Archaeological Landscape of the M1–A1 Link Road* (Exeter, 2001), 99–102; G. Speed, Hollow Banks Quarry, Scorton, North Yorkshire: Archaeological Post-Excavation Assessment. (Northern Archaeol. Assoc. Rep., 02/121, 2002).

Boe, op. cit. in note 40, 73–5.
 ¹⁰¹ Boe, op. cit. in note 40, 73–5.
 ¹⁰² Graham-Campbell and Batey, op. cit. in note 55, 93.

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