11. The Hiberno-Scandinavian site of Woodstown 6, County Waterford

Richard O'Brien and Ian Russell

It is known from a variety of historical sources, mainly Irish annals, that Vikings were operating in Waterford Harbour from the ninth century and returned in large fleets during the years AD 914–17. There are the rich and well-documented archaeological discoveries from the late Viking Age period in Waterford City, but a complete lack of material of any kind from the early Viking Age in the city (Bradley and Halpin 1992, 105; Hurley *et al.* 1997, 894). This was to change with the remarkable archaeological discoveries—arising from investigations conducted on behalf of Waterford County Council, Waterford City Council and Kilkenny County Council—at Woodstown 6 on the route of the proposed Waterford City Bypass (Illus. 1).1

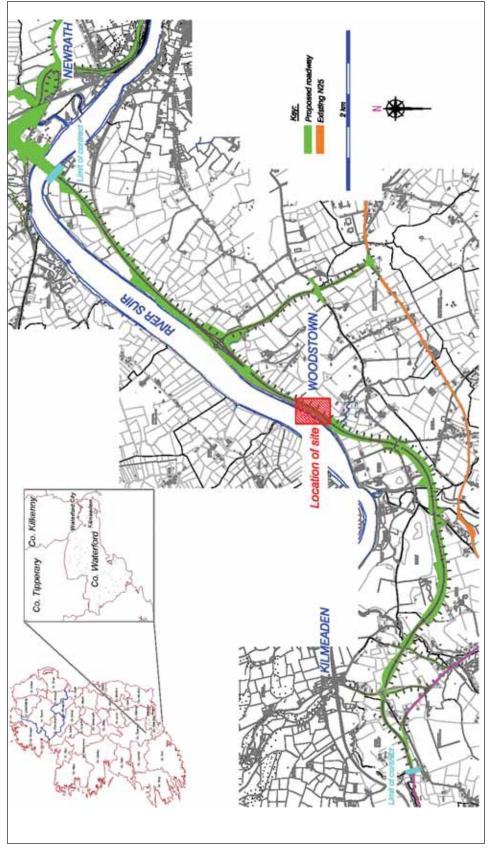
The bypass route crosses the River Suir into County Waterford at the townland of Gracedieu, and travels south-west along the southern bank of the river until branching south, avoiding Mount Congreve Gardens, and ending west of Kilmeaden village. Within the County Waterford section of the bypass no previously known archaeological sites are affected (i.e. no site entered on the maps of the statutory Record of Monuments and Places (RMP)), and there is a lack of recorded archaeological sites south of the River Suir.

The townland of Woodstown, in Killoteran parish, is located approximately 6 km southwest of Waterford City, lying on the southern bank of the River Suir, between the Killoteran and Knockhouse streams. There is only one RMP site recorded from Woodstown, a townland measuring 174 ha in size. This site (WA009-006) is classified in the RMP as 'Non-extant/non-antiquity'. In the adjoining townland of Killoteran to the south, there is the site of an early church (WA017-001) now occupied by a 19th-century Protestant church. No antiquities were recorded from Woodstown by previous authors writing on Waterford, stretching back to Smith's history (1746) and Ryland's history (1824), and O'Donovan recorded no antiquities in Killoteran parish itself during the Ordnance Survey of the early 1840s. Likewise, Leahy's Corporation map (1832) shows no antiquities in Woodstown.

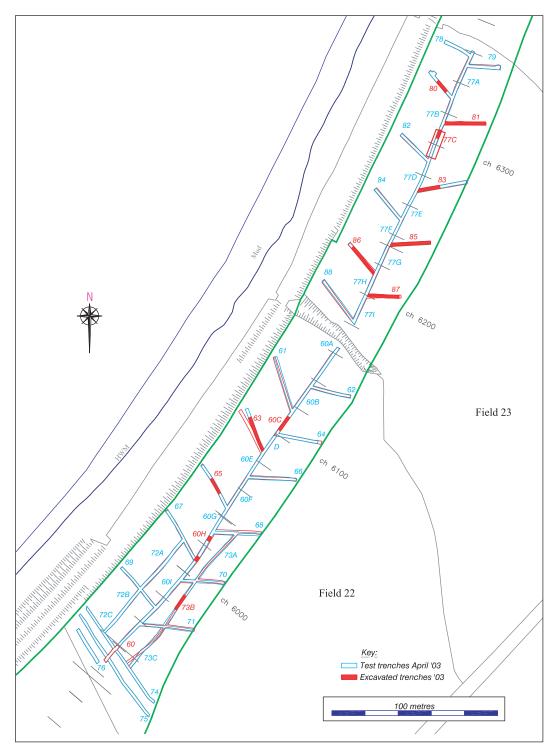
The well-known Waterford historian Canon Power records the *Sean Dún* (Old Fort) in Woodstown, the name of a field where a mound containing a large quantity of bones was demolished during building of the Waterford–Lismore–Dungarvan railway in the 1870s (Power 1907, 367). The location of this site is unknown and the nature of the 'mound of bones' may never be known, as the reference did not specify whether they were human or animal bones. The acidic nature of the Woodstown soils (see below) suggests that the bones were found near the Killoteran stream, where waterlogged anaerobic conditions would have mitigated the effects of soil acidity, thus preserving the bone intact. The railway archives will

Woodstown townland, NGR 255022, 111276. Height 7.97 m OD. Excavation Licence No. 02E0441.

Woodstown townland, WA009-006, NGR 25495, 11071. The site is described in the Archaeological Inventory of County Waterford as an earthwork (site) 'Marked faintly as a circular feature on the 1st ed. of the OS 6-inch map. Not visible at ground level. Farm buildings now occupy the site' (Moore 1999, 147).



Illus. 1—Location of the Hiberno-Scandanavian site at Woodstown 6 (Archaeological Consultancy Services Ltd, based on the Ordnance Survey Ireland map)



Illus. 2—Location of archaeological testing and assessment areas at Woodstown 6 in 2003 (Archaeological Consultancy Services Ltd)

be examined during post-excavation works to check references to the 'mound of bones'.

Aside from an earthwork site (WA009-006), now buried beneath farm buildings, there is a marked absence of ringforts south of the Suir, which contrasts with other parts of the country, where this is by far the most common recorded site type. In east Waterford there is a paucity of archaeological sites in general,³ and it was surprising then to find almost 100 new archaeological sites on the route of the bypass, sites which had been buried for millennia through ploughing (see Hughes, Hegarty and McNamara, this volume).

Investigating the bypass route

Beginning in March 2002, the southern section of the bypass was investigated through archaeological testing and geophysical survey by Archaeological Consultancy Services Ltd. In March 2003, testing of the remainder of the route that was originally unavailable for investigation was completed. The testing was conducted by excavating linear test-trenches by machine in a continuous, herring-bone pattern. This phase of testing included the remainder of Woodstown townland where, previously, five archaeological sites within the route had been discovered and fully excavated. These included one new *fulacht fiadh* or burnt mound site of possible Bronze Age date, and pits of unknown date.

In March and April 2003, a total of 29 test-trenches were excavated in Woodstown within two pasture fields, designated Fields 22 and 23.4 The area had been partly disturbed during the 19th-century construction of the railway, now the Suir Valley Railway. Both fields are generally flat, although Field 22 to the south does slope towards a wetland area. The fields are now used for grazing and this—rather than tillage—may have saved the buried archaeological features from destruction. There were no upstanding mounds or features within the fields to indicate the presence of any archaeology before testing began. Despite this, approximately 600 buried features and deposits were revealed by testing, beneath a topsoil layer up to 0.4 m deep. A geophysical survey conducted in July 2003 by Earthsound Archaeological Geophysics verified the presence of other potential archaeological features between the test-trenches. The discovery of a substantial and complex archaeological site enclosed by a ditch was confirmed, but it would take more focused research to reveal its size, complexity, nature and date.

In August and September 2003, further archaeological assessment was conducted to help answer these questions (Illus. 2). Portions of 12 of the original test-trenches were fully excavated and a total of 169 finds, of which 138 were of metal or iron, were recovered. The evidence from Field 22 suggested industrial functions predominated on this part of the site with less emphasis on domestic features. One trench located down slope beside the wetland contained pits, post-holes, stake-holes and hearths sealed beneath a large spread of burnt stones. This material represented the domestic waste from cooking and metalworking from the site.

³ There were no sites recorded after Portlaw, and as far as Waterford City, during monitoring of the Clonmel-Waterford Bord Gáis Pipeline (Gowen 1988, 181).

⁴ A synopsis of the work done to date is published in *Decies, Journal of the Waterford Archaeological and Historical Society* (O'Brien and Russell 2004).



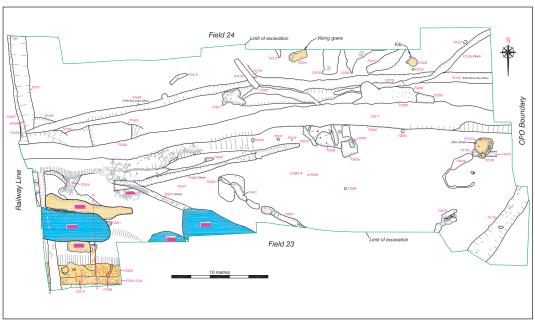
Illus. 3—Aerial view of Woodstown 6 taken in 2001 (Waterford City Council)

Field 23 contained a very high concentration of domestic/industrial activity—consisting of pits, linear features, ditches, hearths and other areas of burning, in addition to structural evidence suggested by post-holes and stake-holes. One trench contained a number of large post-holes associated with three hearths, together with the possible terminal for a wall slot of a small round hut. This was the clearest structural evidence revealed on site. The site-enclosing element, formed by a ditch with internal bank, was revealed from a number of hand-dug sections. Examination of aerial photographs of the site indicated a cropmark on the line of the enclosure ditch (Illus. 3).

The initial site interpretation suggested Woodstown 6 represented a defended riverside settlement approximately 460 m in length. The site was bounded on the north by the river, on the west by the Killoteran stream and open on its south and east sides. Two radiocarbondated samples (Appendix 1) indicated the site was in use between the late 7th and early 11th centuries, i.e. the early medieval or Hiberno-Norse periods (Russell 2004). The discovery of two lead weights of the sort used by Viking traders hinted at the latter date.

Archaeological investigations in 2004

Following consultation with the Department of the Environment, Heritage and Local Government (DEHLG) it was agreed to preserve the site *in situ* under the road without removing any further sod and topsoil. As part of this proposal the culverting of two small streams on the site was necessary, and an excavation took place in March 2004 to excavate both areas. The easternmost stream area was fully excavated, while the features in the second stream area were recorded in plan only. The excavation involved the full hand-excavation



Illus. 4—Post-excavation plan of 2004 excavation at Woodstown 6 (Archaeological Consultancy Services Ltd)



Illus. 5—Coring of the wetland area adjacent to Woodstown 6 for palaeoenvironmental samples (Richard O'Brien)

of an area measuring approximately 60 m by 20 m (Illus. 4). At the same time, the original test-trenches were backfilled and the topsoil scanned using metal detectors. The National Museum of Ireland advised on the method of metal-detecting the soils. The excavation finished in June and further work on hand-sieving the topsoil and excavated ditch fills took place until October 2004. Within the roadtake of the bypass about 8% of the site was tested and 4.15% was fully investigated by excavation.

A further geophysical survey was conducted in July 2004 in the remainder of Fields 22, 23 and 24, including lands still in private ownership that had not been acquired for the road. The results revealed further potential archaeological features, including the outline of another, larger enclosure in Field 22 and a square-shaped enclosure, 30 m by 30 m, in Field 23. The Underwater Archaeological Unit of the DEHLG undertook a detailed side-scan sonar survey of the River Suir at Woodstown. This work did not reveal any definitive results due to heavy silting of the river bottom (F Moore, pers. comm.). In late 2004, an Interdisciplinary Research Programme (combining testing by Cara Murray of the Irish Archaeological Wetland Unit, geophysical surveys by Kevin Barton of LGS Ltd and palaeoenvironmental coring by Dr Pete Coxon and Aisling Farrell of the Geography Department, Trinity College, Dublin) was carried out in the Killoteran wetland, to determine if this area had been the harbour for the site (Illus. 5).

What was the overall outcome of these investigations at Woodstown? The results achieved were outstanding for an Irish archaeological excavation, as a multi-phase archaeological and environmental story for Woodstown and the River Suir was revealed for the first time.

The prehistoric period in Woodstown

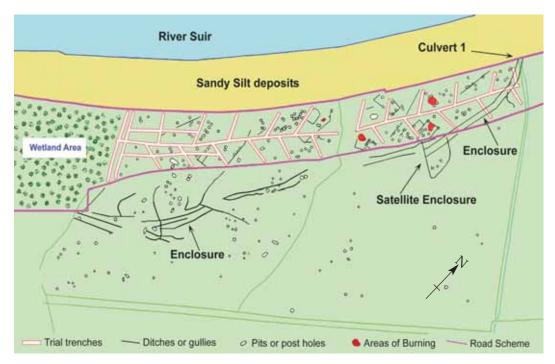
Around 2500 BC—in the Late Neolithic period—the Woodstown/Killoteran area was oak woodland with alder, pine and hazel also growing here. The closest Neolithic tomb is the Licketstown megalithic site on the north bank of the River Suir from Woodstown. The recent discovery and excavation of Neolithic houses in Granny, County Kilkenny, albeit earlier, are further evidence of human habitation in the River Suir area (see Hughes, this volume). Around 1500 BC—the Middle/Late Bronze Age—some disturbance in the woodland is apparent for the first time and cereal cultivation had begun nearby. A *fulacht fiadh* excavated in Woodstown in 2003 may be indicative of such early settlement activity. After 1500 BC there is less woodland with further cereal cultivation and cannabis, the earliest record of such plants in the south-east, being cultivated locally.

⁵ This survey was part funded by the DEHLG.

⁶ Licketstown, County Kilkenny. KK045-015. NGR 25400, 11169.

Woodstown 5 fulacht fiadh, NGR 255338, 111743. Located 1 km east of the wetland, beside Carriganore rock outcrop.

⁸ Post-dating 3,500 years bp cereals and cannabis were being cultivated locally. The extent of the growth of cannabis is not yet known but it was probably cultivated to provide fibres for rope and/or hemp cloth. The wetland may have been used as a wretting site where the hemp was soaked prior to extracting the fibre (if it was then future work may recover cannabis seeds). However, the cannabis pollen frequency is low at Woodstown and other, adjacent, ponds or shallow depressions may have been used to treat the hemp (Coxon and Farrell 2004, 13).



Illus. 6—Interpretive drawing of archaeological features detected by geophysical survey (Earthsound Archaeological Geophysics)

Late Iron Age/early medieval settlement at Woodstown

During the early 5th century AD—in the Late Iron Age period—a deep ditch was dug that formed a defensive barrier for a riverside settlement. This enclosure was roughly C-shaped in plan, extending the length of Field 23, i.e. 200 m long and c 100 m in width. A second, undated, and more irregular-shaped enclosure extended the length of Field 22, i.e. 260 m long and 100–160 m in width. A stream separated both enclosures and the Field 22 enclosure bordered the wetland. The river provided a natural defence on the north side and the wetland, with its steep slope, a natural defence on the west side. The enclosures originally extended further out toward the River Suir but the construction of the railway completely destroyed this evidence. Only the Field 23 enclosure was excavated, revealing a U-shape ditch profile, measuring about 2.5 m in width and 2.5 m in depth, with an internal raised bank. A stone-metalled entranceway was found on the east side of the ditch but there was no evidence of an elaborate or defensive gateway here. Further entranceways are suggested from gaps in the enclosures recorded by the geophysical survey.

The Killoteran wetland was probably exploited for such activities as grass/reed gathering and fowl hunting. Radiocarbon dating indicates that the currently exposed uppermost level of the wetland was contemporary with the excavated enclosure. Later strata and evidence

⁹ The width of the enclosures was measured between the present edge of the river and the curvilinear cropmarks identified from the geophysical survey.

for Viking or medieval activity would have been removed from the wetland through episodic tidal flooding and the creation of a much later tree plantation in modern times. No harbour was discovered and it is suggested instead that ships would have docked alongside the riverbank. The relationship between both enclosures is unclear. However, it is clear that archaeological features were found along the riverbank, extending for a distance of *c* 500 m (Illus. 6).

Excavation in the enclosure ditch area

The easternmost portion of the Field 23 enclosure ditch was fully excavated by hand revealing evidence of an entranceway, 7.5 m in width. An internal earthen bank defended by a wooden palisade of over 120 post and stake-holes, and a possible supporting revetment, found inside the line of the enclosure, indicate a stockade-type defence of that portion of the enclosure.

The basal layers of the ditch suggested it was open for a number of years after construction, whereby the normal process of soil silting had occurred. The earliest stratified finds included a possible honestone and a tiny fragment of lead <1 gram in weight. This is possible evidence of lead working on site. A deep charcoal-rich deposit dumped into the ditch was radiocarbon-dated to between the early fifth and mid sixth century (see Appendix 1). This deposit produced an assemblage of artefacts including burnishing or polishing stones, honestones and possible honestones, an iron nodule, worked stones, a possible glass bead and two amber beads. ¹⁰ The iron nodule provides the earliest evidence of ferrous metalworking on site.

A sheltered portion of one of the ditch terminals was specifically used for metalworking (iron, lead, silver, copper and copper-alloy), evidenced by the construction of a smithing hearth or furnace. The furnace contained a chimney structure set around a central firing area. This produced clear evidence of *in situ* metalworking in a controlled environment. One furnace fill was radiocarbon-dated to between the early fifth to early seventh centuries. The furnace was sealed when waste and finished artefacts were dumped into the ditch, radiocarbon-dated to the seventh century (see Appendix 1). This evidence indicates that substantial areas of ferrous and non-ferrous metalworking occurred close to the ditch, probably within the enclosure, and throughout the settlement.

Artefacts found included a fragmented quern-stone (possibly reused as an anvil), a square-sectioned silver ingot, large quantities of slag, iron blades and knives, an iron knife blade and associated tang, iron nails/rivets, crucibles, a possible stone mould for pewter bowls, a possible copper-alloy pin shaft fragment, possible copper-alloy casket mounts, burnt bones, an ivory bead, honestones and rotary burnishing stones. Some rotary stones may have been associated with the grinding down and/or sharpening of knife blades.

The discovery of the ingot and four nodules of silver-melt debris in topsoil are clear evidence that silver was being worked/smelted in Woodstown, and is the earliest such evidence in the south-east (McNamara, this volume). The use of the ditch for metalworking, and the subsequent dumping of materials within, may suggest that the inhabitants were not overly concerned with maintaining the site defences. With the

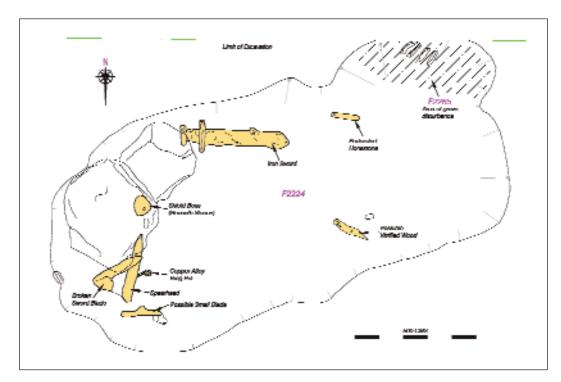
¹⁰ One of the amber beads is a pendant fragment re-worked into a bead, possibly indicating amber working on site or evidence of importation from abroad (P Harvey, pers. comm.; McNamara, this volume).



Illus. 7—Recording of Viking grave (Richard O'Brien)

evidence of the burnt stones dumped beside the wetland (see above), it suggests that extensive industrial activities took place throughout the site. The lack of organic preservation on site is unfortunate. Metalworking activity within an enclosure ditch is often found on Irish settlement sites of the early medieval period, such as Cathedral Hill, County Armagh (Edwards 1990, 90).

There is a possibility that such a large and wealthy site could have been ecclesiastical in nature: a number of stratified copper casket and stud-mounts, dated to between the late sixth and early seventh century, were found in the enclosure ditch, and these would be more typical of ornamented objects owned by the Church rather than the mundane objects found on secular settlement sites. There is the nearby placename evidence from Killoteran ('kil' a church, plus 'Odran/Otteran', an Irish saint, adopted by the Waterford Vikings in the eleventh century). In size, setting and material culture this phase of settlement at Woodstown would have parallels with Clonmacnoise, County Offaly (Murphy 2003, 21). There is also a possibility that such a wealthy site, strategically located beside a major route way and territorial boundary, was a site of great secular significance.



Illus. 8—Post-excavation plan of Viking grave (Archaeological Consultancy Services Ltd)

Viking evidence from Woodstown

During the middle/late ninth century Viking ships sailing on the River Suir landed at Woodstown. Their purpose is unknown but likely involved raiding, and possibly sacking, the Irish settlement. Where these Vikings originated from is unknown, perhaps Norway, or from Viking settlements in the south of England or Wales. How the Vikings interacted with the native Irish may never be fully understood, but they certainly settled on the site. The Viking evidence comes from the discovery of many Viking-type artefacts, chiefly recovered from the topsoil, a number of well-stratified Viking lead weights, and a single Viking warrior grave.

The warrior grave

AViking grave was discovered about 22 m outside the enclosure ditch described above. The grave was buried beneath only 0.25 m of topsoil and had been moderately disturbed in the past by ploughing. A number of large boulders found within the grave suggest that a low stone cairn may originally have covered the grave (Illus. 7). The finds suggested a burial of moderately high status and although no skeleton was found, due to the high acidity of the surrounding soils, all of the burial goods were recovered (Illus. 8). These included a broken sword—and possibly parts of another—a shield boss, a spearhead and a battle axe, together with a copper-alloy ring pin probably worn on a cloak, and a perforated honestone, originally worn on a belt around the waist (McNamara, this volume).

The soils within the grave were completely hand-sieved and all of the iron shield rivets and two tiny fragments of bone, probably animal, were retrieved. The soils were retained for

further phosphate analysis. The burial was dated by stylistic comparisons of the weaponry with other Viking weaponry from securely dated sites. On this basis, the sword hilt dated to between the mid ninth and mid eleventh centuries. The Woodstown warrior grave is the first scientific excavation of a rural Viking burial in Ireland since the 1940s, and the data can be included in the Irish Viking Graves Project being conducted by the National Museum of Ireland.

What was the Viking occupation of Woodstown like?

On arrival, the Vikings set about refortifying the existing enclosure ditch. The palisade appears to have been strengthened with the addition of further posts. Perhaps it had become dilapidated and was in need of repair, suggesting a lack of continuous Irish settlement or perhaps they had first to displace the Irish occupants in a violent assault, no doubt enslaving the survivors. Evidence for Viking re-use of the enclosure ditch is suggested by a number of ditches and pits which cut many of the earlier ditch deposits. Stratified artefacts recovered included two pan lead weights, a honestone, iron blades, a flint blade and core, fragments of bone combs, crucibles, iron nails/rivets, slag, possible anvil stones and two vitrified ceramics, possibly foreign.

A furnace discovered outside the enclosure ditch was possibly used in the smelting of lead or silver. Three post-holes around the circumference would have supported a flue or chimney lined with daub into which a set of bellows was probably inserted. Such structures have clear Viking parallels. An oxidised clay rim indicated high temperatures were achieved during the smelting process and the recovery of a lead weight from this oxidised clay suggests that the kiln was used in association with the manufacture of lead or silver ingots, or possibly the forging of lead weights on site. The discovery of further pan lead weights near the wetland suggests Viking settlement and metalworking throughout the site.

Analysis of the finds discovered by the metal detecting and soil sieving indicates one aspect of Viking life in Woodstown involved trading. There was 208 pan lead weights recovered, compared to less than 10 from late Viking Waterford. These pan weights were used by Vikings in weighing precious metals, mainly silver. Seven weights were composed of ferrous metal; the remaining weights were composed of either plain lead or lead-based composite. One specimen had a large quartz crystal embedded centrally, and one anthropomorphic specimen may have doubled as a game counter. The Woodstown assemblage is the largest such rural collection from Ireland and the majority of lead weights were found in the topsoil. The high recovery rate highlighted the advantages of systematic use of metal detectors on site.

Thirty-six pieces of silver, most of them hacked ingots, were recovered from the topsoil. Based on evidence from silver hoards of the period found elsewhere in Ireland, the greatest amount of silver was in circulation from the mid ninth to the mid tenth century, and large quantities of silver were amassed in Ireland before the foundation of the Hiberno-Norse towns. Other Viking objects found included iron clench-nails and roves (possibly for joining ships timbers). A fragment of a silver *Kufic* coin from Arabia reflects the wider trading contacts normally associated with Vikings. The quantity of lead pan weights recovered, and the likelihood of many more on the site, suggests that these Vikings were involved in trading silver, and undoubtedly other precious commodities.

The duration of the Viking settlement at Woodstown is unclear but radiocarbon dating suggests a complete abandonment of the site around the middle of the 11th century (see

Appendix 1). Did events following the Battle of Clontarf in AD 1014 play a part in its demise? Did these Vikings move further upstream and settle in the present Waterford City, or were the new Viking fleets of the early 10th century in Waterford Harbour the impetus for the city's creation and Woodstown's demise? The post-excavation studies of the site may help to answer some of these questions. On present evidence there was no settlement at Woodstown throughout the medieval period and the site remained forgotten until its rediscovery in 2003.

Conclusion

The discovery at Woodstown surely points to similar settlements on other waterways, as the River Suir is only one of three rivers feeding Waterford Harbour. Considering that every Viking and, indeed, Irish ship sailing in Waterford Harbour had to pass Little Island, with its obvious landscape parallels with Birka in southern Sweden, this location is undoubtedly a likely place for other late eighth or early ninth-century Viking camps in Waterford. The south side of the River Suir at Little Island is another prime area for early settlement. Furthermore, the River Suir connected Waterford and royal Cashel, County Tipperary, so that in effect it served as a royal highway and, undoubtedly, a similar site should exist near the Suir in Cashel.

Similarly, the lack of recorded early Viking settlements along the County Waterford coast, including Tramore Bay and Dungarvan Bay, can probably be attributed to a lack of research, not a lack of sites. Near Helvick Head there is the obvious Nordic townland name of Killongford ('kil' a church, plus 'longphort', a ship encampment), indicative of Viking settlement. The promontory fort of Ballynarrid, near Stradbally, is shown as 'Entrenchment, Danes Island' on the second edition Ordnance Survey map of 1926. Nearby Dunbrattin promontory fort is translated as 'Fort of the Britons.' Only fieldwalking and analysis of similar placename evidence will identify other sites before they are lost.

The recovery of well over 5,000 artefacts (89% from the topsoil) raises methodological questions about how such native Irish and Viking sites should be investigated in future. A little more than 11% of the artefacts were found in secure, stratified contexts. These are most important for understanding associated features on site, but the unstratified finds from the topsoil are very important too. The Woodstown artefacts were recovered after six months continuous investigation with a team of five archaeologists using metal detectors and cataloguing the artefacts. With Woodstown being one of six new discoveries of Viking material in Ireland since 2003 (George's Street and Golden Lane/Ship Street, Dublin City; South Main Street, Cork City; Finglas, County Dublin and Ninch, Laytown, County Meath), such intensive work needs to be replicated on future Viking discoveries, and, in particular, rural Viking sites.

Future rural Viking research could use a Woodstown model—an existing site 6 km upriver from the mouth of a harbour, situated on a river bank, with a wetland nearby, and a ready supply of fresh water. The suggested *longphort* sites of Athlunkard, County Limerick, Annaghassen, County Louth and Dunrally, County Laois should finally be investigated to determine any similarities with Woodstown. In particular, it would be interesting to know whether these sites are purely Viking in nature or, as at Woodstown, these sites had pre-Scandinavian settlement too.

An early Viking Age settlement upriver of Waterford Harbour also poses new questions for the proposed urbanisation of Waterford City. It would be prudent to investigate the area of Reginald's Tower in Waterford City to locate traces of the ninth century Viking settlement, as this area has been suggested as the original Viking settlement core (Bradley and Halpin 1992).

It is clear from the excavation results that a native Irish site existed at Woodstown from the fifth to the middle of the ninth century. This site, possibly a monastic settlement, was defined by two or more enclosures situated beside the River Suir. There is no evidence that the site was abandoned upon the arrival of Vikings some 400 years later, probably after AD 850. The Vikings occupied the site, re-fortified it and remained there until sometime in the middle of the 11th century. The available evidence points to a particular emphasis on defence and trade, both local and international. A similar site has been identified in Ninch, Laytown, County Meath, where rescue excavations revealed a multi-phase site, including a rath or *tuath* of the *Ciannachta* tribe, an ecclesiastical centre with burials, and Hiberno-Norse sub-rectangular enclosures dated to the late tenth to early eleventh century (McConway 2003, 421). The parallels with Woodstown are obvious; the primary difference is that Ninch is coastal while Woodstown is riparian.

Postscript

In May 2005, the Minister of the Environment, Heritage and Local Government ordered the preservation *in situ* of Woodstown 6, and the route of the proposed N25 Waterford City Bypass has been altered. See www.nra.ie/archaeology/N25WaterfordBypass/ for the latest archaeological and research reports on Woodstown 6.