

Radiocarbon dating of human remains from Navan Fort: their implications for understanding the wider ceremonial complex

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This article presents a series of new radiocarbon dates aimed at resolving long-standing issues concerning the development of the complex of Navan Fort, Co. Armagh, and its wider context. These include radiocarbon dates for human remains from excavations at Site A and Site B and from the area of the quarry adjacent to Navan Fort. Iron Age, early medieval and post-medieval dates from these remains complicate previous assessments of the site and its development but add important new data for Navan and its long-term evolution. In particular, evidence for a funerary dimension to the immediate environs of Navan Fort now seems apparent, while further post-medieval activity within the enclosure of Navan Fort extends the chronology of the complex well into the second millennium AD. A date from a human clavicle recovered during excavations suggests the possibility of formal deposition on the cairn of Site B during the Iron Age and supports the suggestion that the cairn was a focus of activities for a considerable period prior to the construction of its turf mound. Together these dates add nuance to our understanding of the complex and its long-term development, but also raise many new issues concerning its medieval and later role.

INTRODUCTION

As one of Ireland's so-called 'royal' sites (Wailles 1982; Newman 1998), Navan Fort, Co. Armagh, has a long history of research and investigation. Nevertheless, there is still potential to add to the story of such complexes with new research; in particular, re-examining legacy data can shed new light on the longer-term evolution, phasing and wider importance of this site and its landscape. This article presents three new radiocarbon dates from legacy samples from the Navan Fort complex, obtained as a part of the Leverhulme Trust-funded Comparative Kingship Project and the ongoing Navan Fort and Environs Project. While modest in scope, these new radiocarbon dates allow us to address some key issues and pose problems for established understandings of the Navan complex and its development.

HISTORY OF INVESTIGATION

The complex known as Navan Fort (Fig. 1) is one of Northern Ireland's premier archaeological monuments. It has been a focus of sustained research, excavation and survey since the 1960s, focusing both on the central complex and enclosure of Navan Fort and on its wider landscape context (e.g. Waterman 1997; Mallory 2000;

Lynn 2003). The site as it stands today is a large, internally ditched enclosure c. 260m in diameter, within which three principal monuments have been identified: Sites A, B and C (Fig. 2). Sites A and B are upstanding earthwork monuments, while Site C was identified through geophysical survey during the 1990s. Site A, a ring-barrow-like earthwork, and Site B, a large, circular flat-topped mound, were the focus of major excavations initiated by Waterman in the 1960s–70s. Waterman's (1997) excavations revealed that these were complex, multi-phased monuments. Activity at the Site B mound, for example, began in the Neolithic (Phase 1), followed by a period of cultivation (Phase 2) and then a Late Bronze Age enclosure (Phase 3(i)). Thereafter, the main structural phases included several intricate and consecutive phases of wooden structures, Waterman's Phases 3(ii–iii), namely the so-called figure-of-eight-shaped buildings, and his Phase 4, the famous '40m structure' and associated horizons (*ibid.*; Lynn 1997a; 1997b; Fig. 3). Although Phases 3(ii–iii) were separated into southern, northern and middle ring-slots, it is generally accepted that these describe four consecutive buildings: A, B, C and E, accordingly designated Iron Age Phases 1–4 in Fig. 3. These buildings bear a range of similarities that see them commonly discussed together (e.g. Lynn 1997d; 2006; Becker 2019), but they also equally describe a range of differences in their form, construction methods and



Fig. 1—Oblique aerial photograph of Navan Fort (J. O'Driscoll).

positioning; for example, the latest building, E, is located notably further north than the southernmost components of A, B and C.

Excavation demonstrated that the Site A earthwork also had a long history, with at least two early structures, termed Phase A and Phase B (Lynn 1997c). During the 1990s geophysical survey identified the slot-trench of Site C, a structure subsequently identified by excavation (1998–2001) to be the northern component of Phase A, Site A (Lynn 2000; 2002; 2003; Lynn *et al.* 2002). This Site A/C structure was quickly recognised as an additional, early Iron Age figure-of-eight-shaped wooden building, similar to Structures A, B and C excavated under Site B (Fig. 4). Whilst a further structure identified as a building was excavated at Site A by Waterman, namely a 16m-diameter double-walled structure (Phase B), this has not yet been conclusively dated (see Lynn 1997c).

Lynn (2000; 2002; Lynn *et al.* 2002) also excavated a series of trenches over discrete geophysical anomalies elsewhere within the enclosure, but the results of these investigations were less conclusive. The most important additional excavation, apart from those at Sites A, B and

C, is the ditch of the large, internally ditched enclosure of Navan Fort itself by Mallory (2000; see also Baillie 1988; Mallory and Lynn 2002). This revealed that the enclosure was possibly dug c. 95 BC and may have been associated with the construction of one of the final phases of Site B, in particular with the so-called '40m structure' (Mallory 2000).

DATING AND PHASING OF STRUCTURAL REMAINS

Repeated campaigns of excavation have demonstrated a complex and multi-faceted history of construction at the site and charted the Iron Age apogee of the central complex of Navan Fort itself, within a significant multi-period landscape. It is now established that, following a limited amount of activity in the Neolithic and early to middle Bronze Age, the main sequence at Navan Fort began with the construction of a large late Bronze Age enclosure on the summit of the hilltop, under Site B. This was succeeded in the early Iron Age (fourth to first centuries BC) by a series of figure-of-



Fig. 2—LiDAR model of the Navan Fort enclosure and immediate environs (data © Historic Environment Division, Northern Ireland; image by P. Gleeson).

eight buildings (for chronology see Warner 1997, 192–4; Gault 2002). Up to four of these buildings were constructed within a relatively short period, with each one appearing to have been modified and/or reconstructed at least three times (e.g. Lynn 2006). The discovery and excavation of Site C subsequently demonstrated that another figure-of-eight-shaped building stood immediately east of these Site B buildings. This Site A/C structure represented another virtually identical figure-of-eight structure but was constructed during the third to first centuries BC (Lynn 1997c, 127–33; 2002). Because the range of radiocarbon dates from this Site A/C structure was

slightly later than the range of those from Site B, and because the slots of this structure cut through a palisade interpreted as an eastern extension of the entrance to Phase 3(ii) excavated at Site B by Waterman (slot Z), Lynn (2002) suggested that this structure was later than the Site B figure-of-eight buildings. This evidence does make it likely that the Site A/C structure post-dates the earliest buildings of Site B (Waterman’s Phase 3(ii–iii)—structures A, B and C), but it should be noted that it cannot rule out the possibility that later horizons in Waterman’s Phase 3, namely structure E, are contemporary with the Site A/C structure (for further discussion see O’Driscoll *et al.* 2020, 254).

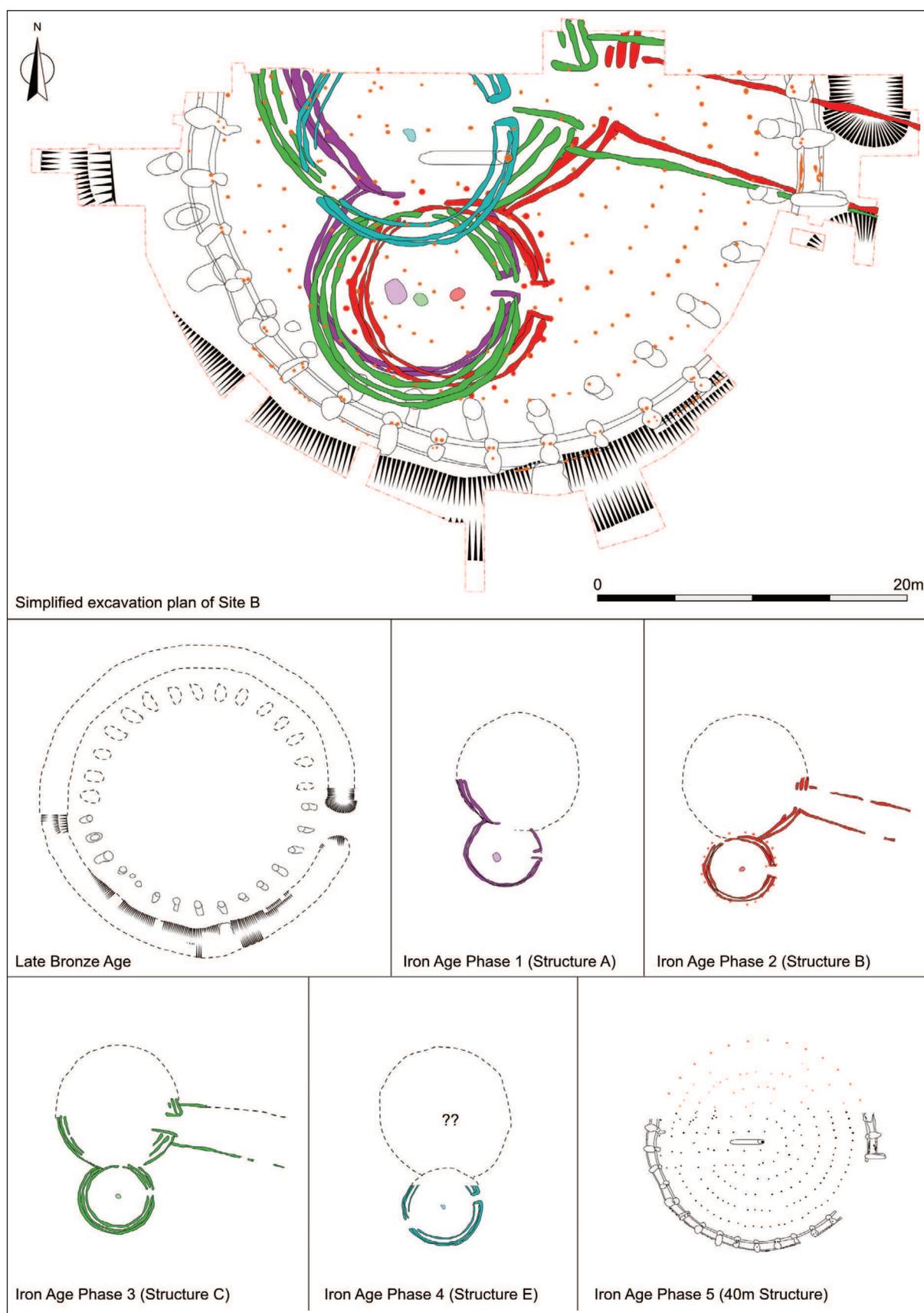


Fig. 3—Plan of main excavated structures at Site B (after Waterman 1997) (J. O'Driscoll).

The '40m structure' at Site B

Regardless of the contemporaneity or not of the Iron Age figure-of-eight buildings at Sites A/C and B, these buildings were all razed by the end of the first millennium BC, and a massive monumental building now known as the '40m structure' was erected on the same spot (Waterman's Phase 4). This huge building, amongst the largest excavated from prehistoric Ireland to date, consisted of a series of rings of concentric timber posts, with a very large post at the centre perhaps being a totem pole or forming a central support for a timber superstructure. This post was so large that it required a ramp to facilitate its erection. There is some debate and uncertainty about the structural elements of this building (e.g. Lynn 1997a; 1997d, 159–71) and whether or not it was roofed. Waterman made a cogent argument for its being roofed, arguing that the weight of a roofed superstructure had driven some of the posts below the base of the post-pits cut to receive them (Lynn 1997a).

It seems unlikely that the '40m structure' was a normal residential structure, and, while the degree to which it may be regarded as ritual, ceremonial or symbolic has been debated (e.g. Becker 2019), it was certainly a significant building. Since no floor layers or diagnostic habitation evidence were uncovered, it was suggested by the excavator (Lynn 1997b, after Waterman 1997) that the building was not in use for a very long time. Instead, very shortly after its construction the building was filled with large limestone boulders and apparently burnt to the ground. The resulting cairn was designated Phase 5 by Waterman (in Lynn 1997b), where Phase 5 also included a stratigraphically later mound of earth covering the cairn of stones. Phases 4 and 5 were therefore understood to be solely constructional, because they chronologically and stratigraphically overlapped. With regard to the destruction of the Phase 4 '40m structure', evidence for burning was provided by pieces of charred timber uncovered in the excavations, as well as what Waterman identified in the field as pieces of straw found sealed under the destruction layers, identified as possibly representing elements of the structure's roof or kindling set against the wall (Lynn 1997b, 51). That the cairn stood to a substantial height within the building prior to burning was suggested by this burnt material being sealed by stones collapsing outward (Waterman 1997, fig. 17). While this suggests that the cairn was retained by the wall of the building, it is notable that in certain areas it was much lower and may have been set back slightly from the outer wall, as, for instance, in the south-western quadrant (Lynn 1997b, 51; Waterman 1997, fig. 18). Before this structure was destroyed, therefore, it appears that at least part of the standing building was

filled with limestone boulders to a maximum height of 2.8m.

The post-pipes of the radial structure defined a series of radially separated areas within that cairn. A strikingly similar arrangement has been identified by geophysical survey at the 88m-diameter mound of Rathcroghan, Co. Roscommon, another major provincial 'royal' site (Waddell *et al.* 2009, 137–97). While it could be that the posts and cairn at Navan were of different phases, the shape and design of both the Navan and Rathcroghan structures have been regarded by some as intentional and intended to invoke a wheel shape (Doherty 2005, 14; Waddell 2014, 95). There are considerable issues, however, with assuming the contemporaneity of the different sections of the Navan monument. There were, for instance, significant differences in height, often varying from 0.6m to 1m, and in certain areas 'little more than a scattering of boulders' (Lynn 1997b, 51). The possibility that the cairn is a single, one-phase, homogeneous structure seems challenged by evidence for turf lenses and perhaps platforms identifiable at a variety of points in its make-up (Fig. 5; e.g. Waterman 1997, pls 18–21; see further below). Whether the structure was filled with stones immediately before being destroyed or over a slightly longer time-line, at some point the remaining elements were then encased within a mound of turves.

A dendrochronological date of *c.* 95 BC for the large central post of the '40m structure' provides a *terminus post quem* for its construction and subsequent destruction (Baillie 1988). The destruction event, and perhaps the construction of the cairn, may have followed shortly afterwards, in the early decades of the last century BC. Part of the reasoning for the dating of the latter is the lack of floor layers within the '40m structure', i.e. the cairn/destruction must have followed closely on 95 BC because the building was not used and had no floor. The possibility that the structure had a suspended floor may complicate this assessment, however, and the exact interval(s) between the structure's completion, the cairn and the date of the mound of turves has/have not been precisely dated. It is also feasible that some of the layers under the cairn of stones could in fact have been a floor. For example, Waterman's notes clearly described a brown, plastic clay layer uncovered below, and adhering to, the underside of some of the limestone boulders within the '40m structure' (Lynn 1997a, 37–8, and further below). This could well have been a floor layer related to the use of the building.

It cannot be conclusively demonstrated that the Site A/C structure discussed above dates from before or after the construction of the '40m structure'. Two hypotheses currently have equal stratigraphic and radiocarbon evidence to support them. The first is the idea that the Site A/C structure was contemporary

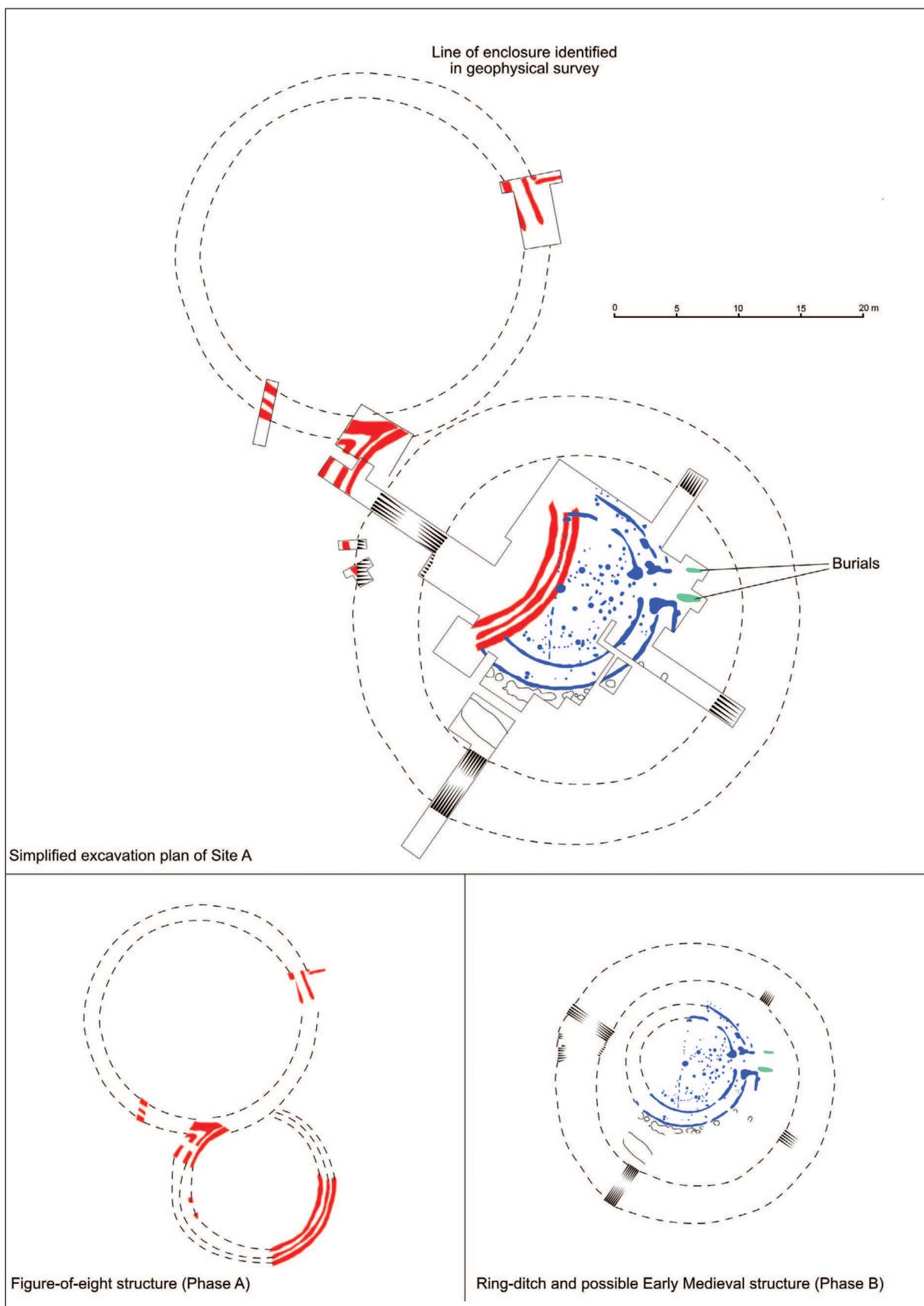


Fig. 4—Plan of main excavated structures and burials at Site A, with north at top of image (after Waterman 1997; Lynn *et al.* 2002, fig. 3) (J. O'Driscoll).

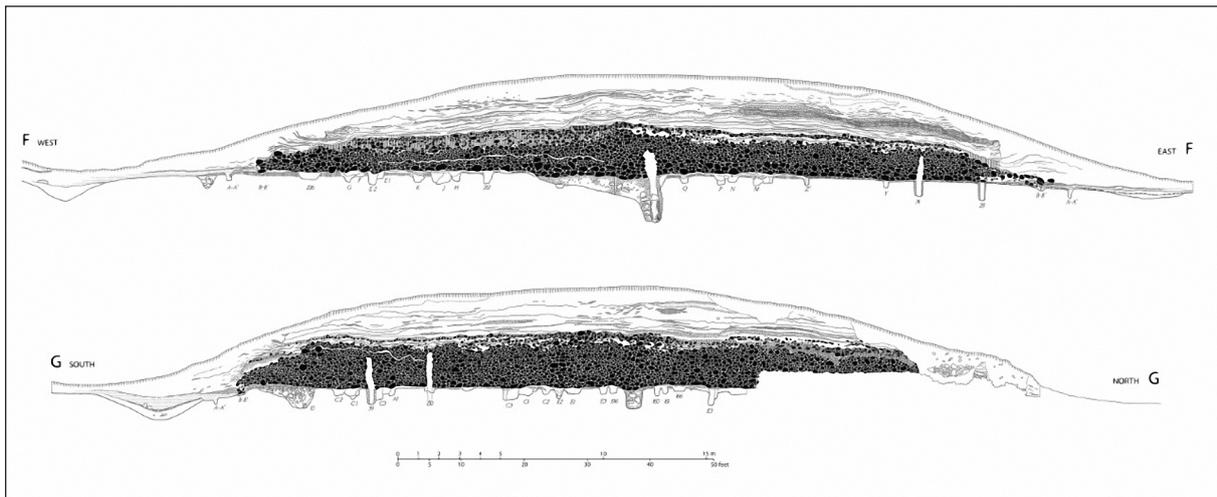


Fig. 5—Section of the mound and cairn of Navan Fort (redrawn from Waterman 1997, fig. 17) (P. Gleeson).

with or later than this structure and built to replace analogous structures that were razed by its construction *c.* 95 BC (above). Alternatively, the shift of the Phase E, Site B, structure (most likely a figure-of-eight structure) to the north of structures A–C may be linked to the construction of Site A/C to the west and stratigraphically precede the ‘40m structure’ and Site B mound. Support for this hypothesis is provided by two large enclosures around Sites A/C and B, which contain these figure-of-eight buildings but also intersect to form a figure-of-eight themselves, stretching *c.* 160m across the flat summit of the hill. These enclosures would be located within a series of four possible palisades identified by geophysical survey, and possibly preceded the monumental outer enclosure (O’Driscoll *et al.* 2020, fig. 11) believed to have been constructed broadly contemporaneously with the ‘40m structure’ (Mallory 2000). While this hypothesis has intriguing ramifications for our understanding of the Navan complex and its evolution, it is currently being tested by excavation and several uncertainties remain.

The 16m structure at Site A

Issues of dating also surround the second principal phase of Site A. This unusual monument was the first to be excavated by Waterman (Lynn 1997c) and was expected to be an Early Christian rath or ringfort, i.e. an early medieval enclosed settlement. The monument as it appears today is better described as a ring-barrow-like earthwork, defined by a low central mound, ditch and low external bank. Upon excavation, Waterman (1997; Lynn 1997c) was able to discern two phases: A and B. Phase A is now known to be third- to first-century BC in date and consists of the edge of the Site A/C figure-of-eight structure investigated by Lynn (2000; 2002). Phase B was a 16m-diameter double-

walled structure defined by a slot-trench. Parallels between the double-walled nature of the structure and Iron Age buildings, for instance in northern England, and between the architecture of the figure-of-eight buildings and the Mauve Phase at Knockaulin are notable (Lynn 1997c, 132–7; see Becker 2019). Lynn (2006, 15) has also mused on the similarity between this multi-ring structure, surrounded by a gully and encased within a ‘mound’, and the sequence described above at Site B for the ‘40m structure’, cairn and mound. Nevertheless, with a north-eastern entrance defined by a porch, a hearth and a central post (perhaps for a roof), the structure is also well paralleled in domestic architecture of the first millennium AD in Ireland (e.g. O’Sullivan 2008). Similarly, aligned on the terminals of the porch and entrance to this structure were two extended inhumation burials. Given the dates for Phase A, this Phase B structure must be later, and could date from the first millennium AD. The structure is positioned more or less centrally within the ring-barrow-like earthwork that survived prior to excavation. The series of discontinuous gullies that surrounded the structure but were placed at the lip of the internal barrow ditch also suggest a direct relationship and were considered during excavation to be a destroyed slot (Lynn 1997c, 144).

Alongside previous excavations, two major campaigns of geophysical survey (Ambos *et al.* 1996; O’Driscoll *et al.* 2020) have added considerable complexity to our understanding of the nature of the Navan complex, its extent and long-term development. In particular, earth-resistance survey in 2018–19 highlighted the possibility of an early monumental complex associated with the Sites B and A/C figure-of-eight structures (described above), a series of ring-ditch or barrow-like anomalies, and a

series of square and rectangular structures that may belong to multiple phases (O'Driscoll *et al.* 2020). While some of these discoveries hint at an extensive funerary complex, and perhaps a medieval residential element, of interest here is a series of three-sided subrectangular enclosures appended to the north-eastern side of the Site A earthwork (*ibid.*, 268). Parallels for these structures may be found in the late Iron Age or fifth–sixth-century AD structure identified by Walsh (2011) at Kilmainham, Co. Meath. The two burials from Site A, which were aligned on the Phase B entrance, would sit within one such enclosure.

Outside the entrance to the Site A structure were two supine, extended inhumation burials with their heads in a westerly direction (Fig. 4). One was complete (Burial 1), while the upper body of the more easterly (Burial 2) was truncated by a later pit (Waterman 1997, fig. 56). These burials were directly aligned on the terminals of the porch at the entrance of this 16m structure of Phase B. The date of these burials has been disputed, with Lynn (1997c, 135) pointing to the presence of iron nails in Burial 1 as suggesting a coffin, and thus a post-medieval date. In contrast, Warner (2020) has argued that these burials, and by implication the associated structure, date from the late Iron Age and represent two migrants from Britain, where this form of burial is present in the later Roman period. Others have mooted an early medieval date on the basis that there is no categoric evidence for east–west extended inhumations from Ireland until the fifth century AD (O'Driscoll *et al.* 2020, 254; for the date of east–west extended burial in Ireland, see McGarry 2010; Gleeson 2017; O'Brien 2020, 49–51; Gleeson and McLaughlin 2021). For reasons discussed below, it now seems that a direct relationship between these burials and the building is no longer tenable, and Warner 2020 and O'Driscoll *et al.* 2020 must be revised. Finds from the excavation of Site A included several sherds of pottery, a penannular brooch (probably ninth-century AD in date) and a weaving comb of a type common to both the Iron Age and the medieval period. Animal bones were recovered from the fill of construction features but could not be conclusively demonstrated to belong to activity associated with Phase B, as opposed to residual material associated with Phase A, except for the middle fill of the Site A earthwork ditch, which produced animal bones radiocarbon-dated to the fourth–seventh centuries AD; this suggests at least some form of early medieval activity at Site A (UB-3407: cal. AD 340–440; UB-3408: cal. AD 440–620; Waterman 1997, 137). None of these finds directly date the 16m structure of Phase B, but they do hint that a date in the middle of the first millennium AD seems most likely. This hypothesis remains to be tested with future excavations.

PRINCIPAL ISSUES

The foregoing account represents a brief synopsis of the current state of knowledge, uncertainty and points for debate arising from combined geophysical survey and excavation data. There is now good evidence for a much broader variety of archaeological features within and in the immediate environs of the enclosure, beyond just Sites A, B and C; this has long been known (e.g. Warner 1986; 1994). For the most part these new features cannot be closely dated in absolute terms or phased without excavation, but their identification has raised issues for established understandings of the complex and its phasing. The Phase B structure from Site A would be one of the largest structures ever excavated from first-millennium AD Ireland, but its dating is far from certain. The burials associated with Site A have not previously been directly dated. The nature and degree of contemporaneity between the figure-of-eight structures at Sites B and A/C remain to be established. The rationale for dating the enclosure ditch of Navan Fort to *c.* 95 BC is the dendrochronological date of timbers found at the base of the ditch. These may be the remains of an internal palisade (Lynn 2000, 13; O'Driscoll *et al.* 2020, 251, 263). As Mallory (2000) has argued, however, the timbers are large and shaped and were burnt, suggesting that they were possibly constructional, and likely roof timbers, presumably derived from the '40m structure', although the proposition that they were deposited in the base of the ditch shortly after that structure was burnt cannot be established conclusively, and a lag between the cutting of the timber *c.* 95 BC, the construction of the structure, its lifetime and destruction would have to be accounted for before their deposition in the ditch. This supposition assumes that the ditch was open around the time of the destruction of the building. The 95 BC date only gives a felling date for the timbers used in the construction of the '40m structure', not a date for the destruction of the building or for their deposition in the enclosing ditch. In this scenario, a crucial implication is that the '40m structure' was never actually used (see above).

More problematic evidence for the accepted reasoning regarding the Site B sequence was presented by Warner (2020). Waterman's (1997, 1–12; Lynn 1997b) overall hypothetical sequence described a short period of construction followed closely by a short period of use and, though refined by Lynn (1997b; 2006), this sequence has been followed by most subsequent scholarship. In revisiting finds from the excavation, however, Warner (2020) highlighted two pins recovered during the excavations that appear to be of Romano-British type, from a period broadly belonging to the first–third centuries AD (Lynn *et al.*

1997, 83–4, nos 9, 10, 92–3). The pins are important because they extend the horizon of activity at Navan beyond 95 BC, and because their find-spots pose considerable questions about the traditional sequence. One of the pins appears to come from the top of a cut feature assumed to be part of a late Bronze Age enclosure (Phase 3(i)), which appears to have surrounded the (later) ‘40m structure’. The other comes from a location that appears to correspond with the bottom of a post-pipe cutting through the deposit of limestone boulders (see above), and from the relict soil sealing Phase 3(ii) (Warner 2020, 71, 74). The first pin raises no clear issues for the established phasing of Site B, as it may have been deposited on top of the ditch before being sealed by collapse from the mound, but the second pin highlights considerable difficulties, as Warner (2020) cogently argues. The explanation offered by Warner is that the limestone cairn (Fig. 5) remained open for a considerable period of time, and that the pin was deposited, potentially in a votive fashion, at some point considerably after 95 BC. Only subsequently was the overlying mound of turves erected. If this is the case, the limestone cairn was exposed as late as the third or fourth century AD. It is a reasonable inference, therefore, that the raising of the mound of turves over the cairn did not occur immediately after the destruction of the ‘40m structure’ (i.e. c. 95 BC) but rather occurred at some point in the early to middle first millennium AD, after the pins had been deposited. Correspondingly, this may reinforce the suggestion that the cairn of stones was not a single homogeneous deposit but perhaps a more composite structure, augmented over a considerable period of time, namely through the opening centuries of the first millennium AD. In Waterman’s (1997, fig. 18) contour plan of the cairn, pins 9 and 10 corresponded approximately with the eastern quadrant, where an east–west kerb and a subrectangular platform were readily defined, albeit on a slightly east-sloping surface. This would support Warner’s argument that the pins originate in some form of votive deposition focused on the cairn itself.

If this evidence suggests that the cairn was open as late as the third or fourth century AD, it follows that the mound of turves must be later still. As yet, no quarry for the cairn, nor source site for the earthen mound, has been identified at the site or in its immediate vicinity. The ditch of Navan Fort may have been capable of producing enough upcast for the mound but, given that this seems to date from the first century BC (Mallory 2000), this is unlikely. Moreover, the scale of the enclosing external bank suggests that the majority of the upcast from the digging of the ditch was used here. The limestone boulders may derive from a nearby destroyed passage tomb (e.g. ARM012:008 or

ARM012:046), while the humic nature of the earthen mound may suggest that this material came from a nearby body of water, perhaps dredged from Loughnashade, a few hundred metres to the north-east (Lynn 1997b, 50, 52). Waterman, for example, mused that the blocks did not look to have been freshly quarried (*ibid.*, 50). There are a number of passage tombs to the north/north-west (Warner 1986, 7; 1994) and several water bodies in the surrounding landscape, so that an exact source for this material is likely to always remain hypothetical.

NEW RADIOCARBON DATES

With these outstanding issues of phasing and chronology in mind, the authors set about identifying samples from archival material that could provide further clarity on the long-term evolution of the Navan complex. In 2020, three specimens of human bone were identified and dated at SUERC to potentially address certain issues concerning the development of the site and landscape (Table 1). A full table of previous radiocarbon dates can be found in Warner 1997, 192–4 (discussed further in Gault 2002).

Table 1—New radiocarbon dates from selected human bones at Navan, calibrated using Intcal20 (Reimer *et al.* 2020).

| Sample ID | Context | C14 date | Bone sample | Calibrated age (95% probability) |
|-----------------------|--------------------|-----------|----------------|----------------------------------|
| SUERC-97763 (GU57476) | Site B, cairn | 2144 ± 25 | Human clavicle | 351–53 cal. BC |
| SUERC-97762 (GU57475) | Navan Quarry, 1964 | 1545 ± 25 | Human rib | cal. AD 433–591 |
| SUERC-97761 (GU57474) | Burial 2, Site A | 184 ± 25 | Human rib | cal. AD 1656–1916 |
| UBA-49149 | Burial 2, Site A | 264 ± 22 | Human rib | cal. AD 1524–1797 |

Human clavicle, Site B cairn (SUERC-97763)

During analysis of the faunal assemblage from Navan Fort in advance of publication of Waterman’s excavations by Lynn (1997a–d), Finbar McCormick (1997, 120) identified a single human clavicle. This was found with several small bags of bone that had been overlooked when the faunal material was originally sent for analysis. Upon analysis following their recovery in 1990, and in advance of their inclusion in the site archive, the human clavicle was identified in a bag that still bore its label from the field, composed during the excavations, reading ‘site B, from among cairn stones’. The species ID and MNI for the remainder of the bones associated with the cairn were: cattle (2),

sheep/goat (2), pig (3), red deer (one antler tine), dog (one ulna) and horse (four teeth, ulna, metacarpal, tibia, pelvis and metatarsal). As McCormick (*ibid.*) noted: '... there is no indication of what part of the cairn these came from, whether they were found together or scattered at different points in the cairn, or indeed if they constitute all of the bones found/deposited in the cairn. The presence of a human bone, however, suggests that it at least, and perhaps other bones of varied species within the bag, had a religious significance. Indeed, a possibility arises that the bones from "among the cairn stones" were meant to represent symbolically a range of species, given the odds against all of these species occurring in a small random sample of bones from the site.'

It should be stated that, while unlikely, the text of the label does not necessarily preclude this material's having come from under the cairn of stones, yet clearly McCormick took the label to imply that the bones were scattered within or on top of the cairn, and this seems a reasonable deduction. This may seem supported by three considerations: (i) if the bones were from the base of the stone cairn, we might have expected them to be labelled as coming from Waterman's Phase 4, namely the '40m structure'; (ii) the use of 'among' on the label may indicate that the bones were recovered intermixed with, or on top of, the cairn stones; (iii) the absence of a clear source for the limestone boulders nearby means that these likely came from a considerable distance, and it is hard to envisage the removal of these large, heavy boulders to Site B, presumably by hand, as accidentally incorporating animal bone, from a range of species, and a human clavicle. Similarly, ritual deposition at the site may be suggested by a number of highly corroded iron finds, including weaponry, from Site B, apparently uncovered in topsoil during the process of removing the mound of turves. These include a small sword or dagger, a knife and a spearhead (Waterman 1997, 87; Neil 2009, 197). While cattle, pig and sheep are all common from domestic assemblages, deer, horse and dog have been found in ritualised contexts, often deposited carefully in ditches, as at Ráith na Ríg, Tara, Co. Meath, during the middle to later Iron Age (Bhreathnach 2002; Roche 2002; Dowling 2006).

Lynn (1997a, 37–8) printed an extract from Waterman's notes in the site archive which elaborates on his rationale for believing that the '40m structure' lacked a definable floor layer and was therefore not in use for a prolonged period. This makes clear that a brown, plastic clay layer was uncovered underneath and adhering to the underside of some of the limestone boulders. It may seem plausible that this material was in fact a floor layer. Nevertheless, this clay layer and the 'fossil' soil interpreted as upcast from the post-pits of

the '40m structure' are discussed as sealing the Phase 3 horizon(s) and the packing of the post-pits for the '40m structure'. Material was found associated with these layers, but it was suggested that it was residual. The discussion of this material makes it unlikely that the term 'among the cairn stones' would have been used if what was intended was 'below' and associated with these well-defined pre-cairn layers (i.e. 'plastic' or redeposited 'fossil' soil). It must be understood that this interpretation cannot be demonstrated beyond a reasonable supposition. Nevertheless, on balance, it seems likely that the material rediscovered by McCormick was deposited within the cairn as it was built up, or on the top of the cairn after its construction, and that it was accordingly recovered during the process of removing the cairn. This possibility invites consideration of the non-homogeneous nature of the cairn itself; as noted above, the cairn varies considerably in height between certain areas, with some sections of the surface (at different heights) having clearly defined kerbs, and overlying layers of turves interspersed within the cairn material (see Lynn 1997b, 50–1, pls 18–21).

This opens a range of possibilities for the context of these animal and human remains, but it seems certain that this material was deposited at some point after 95 BC, the dendrochronological date for the central timber of the '40m structure'. In the first place, the material seems to have been introduced into the site through activity associated with the *use* of the cairn, or was perhaps deposited residually with dumps of material used to construct the earthen mound that was retained by a bank of turves. The variety of material recovered, however, makes the latter unlikely, as McCormick noted (above). The label on the finds bag implies that this unusual assemblage was scattered, and this chimes with the evidence adduced by Warner (2020) for the deposition of two pins as late as the third century AD, including one into a post-pipe that survived in the upstanding (exposed) cairn. Comparable evidence for the use and deposition of material at mounds during the middle to late Iron Age has been adduced or hypothesised at Newgrange, Co. Meath (Swift 2003), Knowth, Co. Meath (Ó Floinn 2012), Lough Crew, Co. Meath (Conwell 1879; Vejby 2016), and Freestone Hill, Co. Kilkenny (Ó Floinn 2000). An association with the construction of the mound of turves is equally possible, but even in this scenario the finds of metalwork from this material would also indicate some form of ritual deposition as a distinct possibility. In either case, it is hard to avoid deducing some element of intention in the deposition of this material.

The human clavicle associated with this material was displayed at the Navan Visitor Centre following its

discovery and has now been radiocarbon-dated to 2144 ± 25 cal. BP, giving a broad date of the fourth–first century BC (351–53 cal. BC). This dating is in line with the date of the Site B figure-of-eight structures, as well as the Site A/C structure, though it is worth highlighting explicitly that it could also date from the decades after the central post of the ‘40m structure’ was felled (c. 95 BC). Indeed, considering the issues highlighted above, it is feasible that it was deposited after the structure was completed, on top of the cairn of stones, but before the building was destroyed. Structured deposition associated with the buildings at Navan Fort seems evident in the case of a Barbary ape skull from Site B, and is also indicated by spreads of bone found associated with the slots of Site A/C (Murphy 2000, 19). These patterns may support the interpretation of the clavicle as residual and perhaps accidentally incorporated into the cairn material. Nevertheless, while it may originate from a disturbed burial somewhere nearby, this seems unlikely: it exhibits no evidence of burning and, as far as we can tell, it was found associated with animal remains that tend to be common in Iron Age ritual contexts. While cremation was the dominant rite for the disposal of the dead in this period, a limited number of crouched inhumations have been identified (O’Brien 2020, 34–50; McGarry 2010), principally from the east midlands. There is also good evidence for disarticulated human bone circulating for prolonged periods at places like Raffin Fort, Co. Meath (Newman *et al.* 2007). Furnished inhumation burials of the Iron Age have been posited immediately to the east, along the perimeter of Navan Fort (Ó Floinn 2009, 208–9), but there are problems associated with this hypothesis (see below). This bone also appears to be weathered, perhaps because of exposure to the elements (Grade 2 erosion/abrasion; McKinley 2004, 16; Fig. 6), though the possibility of weathering through natural actions within the limestone cairn should also be noted. Whether deposited in the first century BC or some time later,



Fig. 6—The human clavicle from the mound material at Site B (P. Gleeson).

there is a distinct possibility that the bone was an old and perhaps venerated object when incorporated into the cairn. At Raffin Fort, Co. Meath, a skull fragment with wear patterns suggesting that it was circulated over a prolonged period was at least a century old when it was incorporated into a pit defined by successive burning layers and which closed the use of the enclosure through the sealing of the pit with a squat stone boulder (Newman *et al.* 2007).

Burial 2, Site A

Two extended inhumation burials found during the excavation of Site A were described in a brief osteological report (Lynn 1997c, 136, fig. 56; Rees-Jones 1997, 145). In the excavation monograph, Lynn notes that a sample from Burial 1 was assessed for radiocarbon dating but that this proved not to be possible owing to a lack of collagen and, accordingly, there seemed little reason to assess remains from the more degraded Burial 2 (*ibid.*, 135). Fortunately, in 2019, during cataloguing of Historic Environment Division (HED) archaeological collections, a small box containing human bones was noted; it was labelled ‘Navan Site A Burial 2’, followed by ‘104’ within a triangle. There were two labels inside the box: ‘Navan Site A Burial 2’ and ‘C2’—the field identification for the area where the burials were found. The rest of the latter label was faded but seems to refer to a house gully. Lynn (1997c, 140) refers to a probable field note that mentions ‘what appeared to be a wall(?) trench on north side of entrance to circular house, cut thro’ one of the inhumation burials’. He suggests that this was probably the small, elongated pit that cuts Burial 2 on plan and is symbolised as modern disturbance on the earliest published drawing of the site. The fragmentary remains labelled ‘Burial 2’ would appear to be the only human remains from the archaeological excavations at Navan Fort held in the HED’s collections. One possible explanation for this came to light during geophysical survey at Navan Fort in 2018 by two of the authors (PG and JOD), who met a local man who had worked on the excavations with Waterman and who recalled uncovering the human remains but stated explicitly that these were not fully excavated and lifted. Clearly, samples were collected from Burial 1 and Burial 2 (i.e. Lynn 1997c, 135), but the absence of complete remains of both burials in the site archive may suggest that only partial excavation and sampling of these remains occurred.

In the published excavation report (Lynn 1997c), Burial 2 is clearly described as being disturbed, cut by a pit, and with only the lower torso, left arm and lower limbs identified. Osteological analysis of the extant Burial 2 remains labelled as ‘cut by house gully’ do not correspond to those illustrated by Lynn (*ibid.*, fig. 56),



Fig. 7—Patches of green discoloration on the medial side of the distal right radius and inferior aspect of the right femoral head of Burial 2, indicative of copper or copper-alloy staining and suggesting that a bronze or brass item (or items) was (were) positioned between the right forearm and hip (photograph by Ryan Montgomery, annotated by Libby Mulqueeny).

and all derive from the right side of the body: fragments of a right distal radius, four right hand bones, four rib fragments (including the head of a right lower rib), a fragmentary right femoral head, and fragments of the right ischium and pubis. The diagram of the burial (*ibid.*) illustrates that the right hip was incomplete and that no right ribs or arm bones remained articulated. It is therefore feasible that these bones were recovered from the fill of whatever feature had disturbed Burial 2; they may be extant because they were not part of the articulated remains which were left *in situ*. Osteological analysis by Rees-Jones (1997, 145) described the remains as those of an adult female approximately 20–30 years of age, with a stature of 1.53m. The surviving additional remains from Burial 2 are roughly compatible with this identification. The morphology of the pubic symphysis and the size of the femoral head are both indicative of a female (after Stewart 1979, 100–1; Schwartz 1995, 281). Only the inferior aspect of the pubic symphysis is present, but its state of degeneration (Phase 4) is more in keeping with a middle-aged individual (35–50 years) (after Brooks and Suchey 1990). Two patches of green discoloration (Fig. 7), indicative of copper or copper-alloy staining, were observed on the inferior aspect of the femoral head and the medial side of the distal radius, suggesting that the position of the right arm had mirrored that of the left, as depicted on the plan, and had lain alongside the body. The discoloration suggests that a metal object may have originally been positioned between the right forearm and hip.

This burial was radiocarbon-dated at SUERC to cal. BP 184 ± 25 (SUERC-97761 (GU57474)), indicating that the burial is likely to date from cal. AD 1656–1916 and therefore to be post-medieval. Given

the apparent association with the structure of Phase B, Site A, and fourth- to seventh-century AD radiocarbon dates from the middle fill of the ditch of Site A (see Lynn 1997c, 137), this was a somewhat surprising result. Consequently, a second sample from these remains was submitted to the ¹⁴CHRONO Centre at Queen's University Belfast to make sure that the date was accurate and not a result of contamination or error. This sample (UB-49149) returned a date of 264 ± 22 cal. BP, giving a date of cal. AD 1524–1797 and supporting the validity of the first dating of this burial as post-medieval.¹ Within this context, and considering the staining discussed above, it is possible that the object that left the staining was made from either bronze or brass, the two most common alloys of copper (Schultz and Dupras 2014, 457), and perhaps were the contents of a pocket. Lynn (1997c, 135) noted that green discoloration was evident on a left rib of the individual from Burial 1, interpreted as possible evidence that a pin or brooch had originally been located on the left side of the chest.

Although Burial 1 has not been dated, the date from Burial 2 lends further support to the intimation that both burials date from the post-medieval period, as suggested by the iron nails implying a coffin in Burial 1. The burials were considered to be aligned on the entrance to the 16m structure from Phase B, Site A. Although it is probable that this relationship is fortuitous, only further investigation of this structure and Site A as a whole can solve the issue of its date.

The post-medieval date from Burial 2 is intriguing, as it clearly demonstrates activity at Navan Fort during the sixteenth–nineteenth centuries. While this substantially extends the previously known chronology of the complex, it is worth highlighting that this is also

the period when antiquarian interest in the upstanding monuments of the site, and its place in medieval history, began to be renewed. This may be related to (undated) anomalies detected nearby in geophysical survey, which could be suggested to be the remains of a post-medieval cemetery or settlement. Notably, this burial was also found along the southern perimeter of a field encompassing the north-eastern quadrant of Navan Fort, which may equally be post-medieval in origin. This field is clearly apparent in LiDAR data, where it is defined by ridge and furrow and distinguished from the area to the south by the absence of the same (Fig. 2).

Navan Quarry burial, 1964

The aforementioned cataloguing within HED collections included a box containing a burial and labelled ‘Navan Quarry. Found May 1964. Probably in pit when clearing down to rock with excavator’. The quarry in question is located along the eastern perimeter of Navan Fort and has undoubtedly had a detrimental impact on the setting of Navan Fort as a complex (see Figs 1 and 2). It is uncertain where exactly this burial came from within the quarry, but it may have been somewhere in very close proximity to the enclosure itself. A U-shaped field system is clearly identifiable in historic aerial photographic imagery in the Cambridge University Collection (<https://www.cambridgeairphotos.com>), and specifically in an image taken in 1955 and published in the Navan excavation monograph (CUCAP no. QS006, in Waterman 1997, pl. 1). Historic Ordnance Survey imagery makes clear that these fields were obliterated by the neighbouring quarry by c. 1970. It is possible that this burial derives from somewhere within this distinctive U-shaped field system. Despite the exact find-spot of the burial being uncertain, there are a number of records that suggest comparable burials very nearby. These include a female inhumation from the southern side of the road skirting the southern perimeter of Navan Fort, found under a boulder in 1967 (NISMR 12:72) (Warner 1986, 7), human skulls reputedly found in association with the Loughnashade Horns (*ibid.*, 8), and a number of inhumation burials implied to have been uncovered along the eastern perimeter of the Navan enclosure in antiquarian accounts (Ó Floinn 2009, 208–9).

Approximately 25–50% of the ‘Navan Quarry’ skeleton was preserved, and the bones present in the

HED archive comprised the frontal, occipital, left parietal and mandible, the right first rib, three right mid-thorax ribs, a complete lower thoracic vertebra, the first lumbar vertebra, a possible fragment of the fifth lumbar vertebra, the right and left ilia, right ischium and sacrum, the diaphysis of the left humerus, the diaphysis and distal end of the left femur and the diaphysis of the left tibia. The bones displayed fair amounts of surface erosion (Grade 2) (after McKinley 2004, 16). Morphological features of the skull and pelvis were compatible with a female individual (after Schwartz 1995, 280–1). The state of epiphyseal fusion and dental attrition were indicative of a young adult (18–35 years), with the state of fusion suggesting an age in the early twenties (*ibid.*, 196–8; Brothwell 1981, 72). The only possible palaeopathological lesion comprised a smooth-walled oval indentation (measuring 10mm supero-inferiorly by 13mm medio-laterally) on the left side of the endocranial surface of the frontal bone. The ectocranial surface was normal in appearance. It is possible that the indentation was a minor non-neoplastic cyst of some form (see Osborn *et al.* 2004, 604–52). The maxilla was not present, but details of the mandibular dentition are presented below (Table 2). The only dental pathologies evident were flecks of calculus on the distal surfaces of the right first and second molars and the left second and third molars, and on the mesial surface of the left first premolar.

The burial was radiocarbon-dated to 1545 BP ± 25 BP, giving a fifth–sixth-century AD date (cal. AD 433–591). This fascinating discovery adds further evidence for conversion-period activity within the immediate environs of Navan Fort and chimes with the fourth–seventh-century dating of animal bone from the Site A ditch, as well as with a series of contemporary radiocarbon dates from wood in the upper fills of the enclosure ditch of Navan itself excavated by Mallory (2000, 25). Furthermore, an eighth-century blue bead was recovered from Trench 5 excavations (Lynn *et al.* 2002, 37), while a range of other monuments and stray finds of early medieval date catalogued by Warner (1986, 8; 1994) add to the emerging evidence of mid- to late first-millennium AD activity at Navan Fort and its environs.

In considering the provenance of Iron Age finds from Ireland, Ó Floinn (2009, 208–9) has recently discussed a range of important brooches found at Navan Fort. These include a well-known fifth- to sixth-century Fowler Type 2 zoomorphic penannular

Table 2—The dentition present in the Navan Quarry burial.

| | | | | | | | | | | | | | | | | |
|------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Mandible | 48 | 47 | 46 | 45 | 44 | 43 | 42 | 41 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
| | / | | | / | / | / | / | / | / | / | / | | | | | |
| AM = lost ante-mortem. | | | | | | | | | | | | | | | | |

brooch, now in the British Museum (BM1868/0709/17; Kilbride-Jones 1980, 136); an Iron Age safety-pin fibula (NMI 1906:40; Raftery 1983, no. 366); an Iron Age Navan-type brooch (NMI 1906:39; Raftery 1983, no. 389); and an Iron Age leaf-bow-type brooch (NMI W.473; Raftery 1983, no. 378). It would appear that BM1868/0709/17 was described by Brackstone (quoted in Ó Floinn 2009, 208–9) as found in 1852 during ‘ploughing on the east side of Navan Rath’, near Armagh, but later, when discussing this same brooch, Brackstone noted that ‘some years since a human skeleton was found in the same field, with a brooch lying among the ribs. This is now in the Museum of the Royal Irish Academy’ (*ibid.*). Ó Floinn surmised that this brooch may be Raftery’s (1983) no. 378, a simple fibula on leaf-bow type (NMI W.473, Iron Age leaf-bow-type brooch). A further possible burial is noted by Ó Floinn (2009, 208) in a document in the National Museum of Ireland archive, which describes a ‘(f)ibula, in white bronze, covered with a remarkable bright green patina, lyre-shaped, a small fragment of amber, which formed a central boss, remains; the acus is wanting. Found, lying between the ribs of a human skeleton at Navan Rath’, which is almost certainly Raftery’s (1983) no. 389.

It is difficult to determine with certainty the exact find context or provenance of these, and whether the antiquarian accounts are duplicate records of a single find, but at least some were found in association with human remains from within the enclosure of Navan itself or very nearby. The NMI register for NMI 1906:40 and NMI 1906:39 (Raftery 1983, nos 366 and 389) clearly reads that they were found ‘in Navan Rath’ and the antiquarian evidence associates these finds with ploughing (e.g. in 1841 and 1852), a location on the eastern side of Navan Fort and human remains. Ó Floinn (2009, 209) suggests that one of the safety-pin brooches found came from an Iron Age inhumation burial, but evidence for extended inhumations in Ireland before the fifth century AD is exceedingly rare (Gleeson and McLaughlin 2021, 384). The clearest evidence is the similarly furnished burials discovered in 1937, reputedly associated with first- to second-century AD Roman coins, at Bray Head, Co. Wicklow (O’Brien 2020, 45–6). Those finds, recorded as being associated with ploughing, cannot be clearly linked to burial.

Based on Ordnance Survey mapping and LiDAR data (e.g. OS third edition and Fig. 2), it appears that the interior of Navan Fort was divided into a field system at some point prior to the 1900s. This involved the creation of three triangular-shaped fields, but only the north-western and north-eastern of these exhibit evidence of ploughing; a sharp slope defining the southern field within the interior is considered to be

too steep to allow ploughing. Hence, a find-spot within a ploughed field within the eastern side of Navan Fort is likely from the field located north/north-east of Site A (Fig. 2). Alternatively, a limited portion of LiDAR data covering an undisturbed south-western corner of the U-shaped field system immediately adjoining Navan Fort’s eastern perimeter (Fig. 2) is defined by ridge and furrow. The discovery there of a female burial now dated to the fifth–sixth century AD (SUERC-97762 (GU57475)) presents a striking potential context for such material.

Whether the human remains uncovered in association with the brooches discussed by Ó Floinn (2009) are late Iron Age or potentially early medieval, this evidence together suggests a much wider funerary landscape skirting the eastern perimeter of Navan Fort than has previously been appreciated. Evidence for burial within and outside the enclosure of Navan Fort is considerable, and includes the dated remains found in the quarry, the undated female burial from immediately to the south and the possible ring-ditches identified through geophysical survey (O’Driscoll *et al.* 2020, 266–7). It is notable that all of this material is compatible with an early to mid-first-millennium AD date (i.e. inhumation) and concentrated along the eastern side of the enclosure.

CONCLUSIONS

These new radiocarbon dates help to further clarify the character of Navan Fort and its immediate environs over the last three millennia. Nonetheless, they do raise as many questions as answers about the nature of the complex and its long-term evolution and point to the need for further dating and targeted excavation at Navan. While a residual origin for the human clavicle cannot be ruled out, Waterman’s (1997) Phases 4, 5 and 6, namely the ‘40m structure’, cairn and mound, may elide a range of activities spread across a more protracted timespan, potentially into the middle of the first millennium AD. The combination of Romano-British pins, human remains and animal remains within and on top of that cairn presents the possibility of a long-term ritual focus prior to the creation of the earthen mound. Likewise, the fifth–sixth-century AD radiocarbon date from the burial discovered in 1964 at the Navan quarry presents further important evidence for the continuity of activity in this landscape throughout the first millennium, which chimes with the evidence for a broader funerary landscape along the eastern perimeter. This activity appears to be at least partly contemporary with St Patrick’s foundation of Armagh, to the east, and provides a context for early medieval material from excavations at Site A and the

enclosure of Navan itself. The post-medieval date for Burial 2 at Site A highlights longer-term activity, with people continuing to return to this venerated centre to bury the dead and to settle this site as it became drawn into everyday strategies, including the agricultural division of the interior. In this era Navan was being 'rediscovered' by antiquarian activities, and part of the fascination which drove this 'rediscovery' would appear to be the direct result of agricultural practices, settlement and subsistence activities within the enclosure and its immediate environs. This new evidence for post-medieval activity is an important element of Navan Fort's story, and one with important implications for our understanding of how that complex was rediscovered and re-imagined into the modern era.

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NOTE

- ¹ While the small sample size of two dates means that caution is needed, it is worth noting that these dates failed an X2 test, making it statistically possible that they do not overlap. This, and the differences in their ranges, may be related to differences in pre-treatment procedures at SUERC and QUB (ultra-filtration was used at QUB), and to differences in precision between the equipment used to measure the dates. AMS was utilised at SUERC and NEC, whereas the more precise, newer MICADAS system from IONPLUS was utilised at ¹⁴CHRONO.

