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Bronze Age and Iron Age archaeology at Thainstone Business Park, Inverurie, Aberdeenshire: an investigation of structures and funerary practices

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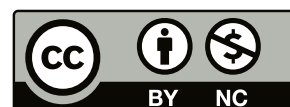
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Bronze Age and Iron Age archaeology at Thainstone Business Park, Inverurie, Aberdeenshire: an investigation of structures and funerary practices

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1. ABSTRACT

Headland Archaeology (UK) Ltd was commissioned by Axiom Project Services to undertake an archaeological excavation in advance of a commercial development at Thainstone Business Park, Aberdeenshire. Excavation identified the remains of a Middle Bronze Age roundhouse and a contemporary urned cremation cemetery. Evidence of Late Bronze Age cremation practices was also identified. A large roundhouse and souterrain dominated the site in the 1st or 2nd century ad. Material culture associated with the Iron Age structures suggested a degree of status to the occupation there.

2. PROJECT BACKGROUND

Between August and September 2018, Headland Archaeology conducted archaeological excavations at Thainstone Business Park, Inverurie, Aberdeenshire, following an evaluation undertaken by Cameron Archaeology (2018). Several Bronze Age and Iron Age features were identified, including cremation burials, roundhouses, a souterrain, a ring ditch and a pit cluster. The work was commissioned by Axiom Project Services in response to a condition on a planning application (APP/2015/3793 and APP/2018/0140) submitted to Aberdeenshire Council in advance of commercial development of the site. The objectives of the excavation were to record archaeological features and establish the date and duration of settlement activity.

2.1 Site location

The development site was located in fields laid to pasture to the west of Thainstone Agricultural Centre, approximately 3km to the south of Inverurie, Aberdeenshire (NGR: NJ 7707 1809; Illus 1). The excavation area was situated on a plateau between 104m and 111m AOD, with a gradual south-facing slope descending towards the River Don.

The geology of the area comprised Aberdeen Formation – psammite and semipelite – metamorphic bedrock formed between 1,000 and 541 million years ago. This was originally sedimentary rock formed in shallow seas and later altered by low-grade metamorphism. The superficial geology was made up of the Banchory Till Formation – diamicton. These were formed between 116 and 11.8 thousand years ago during the Quaternary period (NERC 2020).

2.2 Archaeological and historical background

The site was within a region that is rich in significant, prehistoric archaeology including standing stones, settlements and forts. Within the footprint of the development, two previously known features were recorded: ‘Camie’s Stone’ and a large, circular cairn adjacent to it (Canmore ID 18610 and 18570, respectively). The standing stone was traditionally thought to mark the site where a Danish general named Camus (or Cambus) was slain in battle (Watt 1865: 132; OS Survey 1867: 31–2), however,

there is doubt whether the battle or the general actually existed (Coles 1902: 504). Differential weathering suggested the rounded end of the stone was originally set into the ground. During a visit by RCAHMS in 1998, the tenant stated that the stone had been upended and re-erected on at least one previous occasion. The stone and the place name were first mapped in the early 19th century when ‘Comiestone’ was depicted on Thomson’s map of 1832. The cairn was still visible in 1902 (Coles 1902: 504) but had been cleared by the time of an Ordnance Survey visit in 1964. A stone cist known as Camie’s Grave (Canmore ID 18599) lies approximately 400m to the north-east of ‘Camie’s Stone’. To the south of the standing stone are several large, natural boulders known as ‘The Cloven Stone’ (Canmore ID 18640) that have been incorporated into a stone boundary wall. Excavations in 2002, immediately to the east at Thainstone Business Park, uncovered the remains of an Iron Age roundhouse (in the form of a post-ring structure), two hearths or ovens and a four-post structure (Murray & Murray 2006). Finds included flint flakes and a scraper, a crucible fragment and a glass bead. The features were radiocarbon-dated to the 1st and 2nd centuries ad.

Additionally, the site was close to three Scheduled Monuments. ‘Bruce’s Camp’ (Canmore ID 18586; SM 12523), 0.5km to the north, is a later prehistoric hillfort situated on the summit of Shaw Hill. A hoard of Iron Age metalwork was discovered under a large stone on the hill in 1867 and an archaeological excavation in 2006 identified walls, post holes and pits within the interior (Cook et al 2006: 19). Approximately 1km to the south-east are the remains of a Neolithic or Bronze Age stone circle at Fullerton (Canmore ID 18569; SM 7920). Originally seven stones were thought to exist but only one is still upstanding. A cist inhumation and evidence of cremation urns were recorded during investigation of the site at the turn of the 19th and 20th centuries (Coles 1901). Later analysis of the pottery recovered from here confirmed Iron Age activity had also taken place (Kilbride-Jones 1935). Further prehistoric cremations were identified at Broomend of Crichtie (Canmore ID 18621; SM 18), approximately 1.5km north of Thainstone. This site was associated with a complex Neolithic and Bronze Age landscape that also included a henge monument, stone circle, timber circle, Beaker burials



Illus 1 Site location (© Headland Archaeology (UK) Ltd; OS OpenData © Crown copyright and database right (2020))

and a stone hammer (Dalrymple 1884; Coles 1901; Ritchie 1920). Excavations in the 2000s identified the locations of stone sockets, post holes and pits (Bradley et al 2001; Bradley & Clarke 2007). More recent excavations have continued to add to the prehistoric archaeological record of the area, with excavations at Boynds Farm (Dalland & Cox 2014) and Portstown (Ginnever 2015) revealing Bronze Age cremation pits, late Bronze Age to Iron Age roundhouses and a possible souterrain. Evidence of more recent history is also evident in the surrounding landscape, with medieval rig and furrow evident within the grounds of Thainstone House (Canmore ID 76091), originally built in the 18th century and modified in the following century. Nineteenth-century crofts and farms are also present in the area.

Prior to the excavation at Thainstone, archaeological trial trenching was undertaken by Cameron Archaeology in 2018. Eight concentrations of archaeological features were identified, including two circular structures, hearths, charcoal-filled pits and pits containing slag (Cameron Archaeology 2018). Later in 2018, six areas (Areas A–F) were targeted for monitored topsoil stripping, based on the results of the evaluation. Of these six areas, only Areas A and B contained archaeological features and were subsequently excavated by Headland Archaeology (Headland Archaeology 2019a). The results of this excavation in tandem with subsequent finds analysis and radiocarbon dating evidence are discussed here.

After the excavation, an archaeological watching brief was carried out within the development area but outside the targeted excavation areas, in connection to a new access road. This was also undertaken by Headland Archaeology and revealed a handful of isolated features (Headland Archaeology 2019b).

2.3 Archaeological summary

Following the results of the evaluation, six areas were targeted for monitored topsoil stripping (Areas A–F; Illus 2), which was undertaken by Cameron Archaeology in July 2018. Of these six areas, only Areas A and B were determined as requiring further investigation due to the concentration of archaeological features. Areas C–F did not contain any additional features beyond what was recorded

in the evaluation and as a result were not further investigated.

An average of 0.3m of topsoil was removed, revealing the underlying geological subsoil of pinkish-brown sand and gravel with frequent rounded stones and occasional outcrops of sandstone bedrock, especially in the eastern half of Area A. A series of north to south-aligned furrows were present in Area A, measuring up to 1.2m wide and 0.2m deep. In Area B, the furrows were of the same dimensions as in Area A but were aligned east to west. Both furrow alignments were in line with the current field boundaries and were therefore likely post-medieval. The agricultural practices within these areas would have truncated the archaeological features to some extent.

Several prehistoric features were identified, including four urned cremations, a possible tree root hollow containing further cremated bone, two roundhouses, a souterrain and several isolated features. The finds assemblage largely comprised pottery, associated with both the cremations and the structures. A small number of stone and other artefacts were also recovered. Analysis was undertaken on the cremated human bone, charcoal and environmental material.

2.4 Radiocarbon dating and period date ranges

Radiocarbon dating was carried out on six samples from the cremation pits and structures. The materials selected for radiocarbon dating were chosen based on their condition, size and security within features, and supported with finds dates. However, some of the radiocarbon dates associated with the settlement features were obtained from material recovered from naturally infilled deposits and are therefore less secure than dates retrieved from burnt bone in cremation pits.

The samples were submitted to the Scottish Universities Environmental Research Centre (SUERC) AMS Facility. The dates were calibrated using OxCal v4.4 (Bronk Ramsey 2017) and the atmospheric calibration curve for the northern hemisphere (Reimer et al 2020). Dates cited in the text are based on 95.4% probability and rounded to the nearest five years, following Mook (1986). The calibrated date ranges spanned two millennia from the Middle Bronze Age to the 6th century ad



Illus 2 Excavation Areas A and B (© Headland Archaeology (UK) Ltd; OS OpenData © Crown copyright and database right (2020))

(Table 1). Due to limited stratigraphic relationships, the AMS dates and finds data provide the majority of the evidence for phasing the site.

Period date ranges were based on the summary chronology and associated artefact types for Scotland, as noted in the Scottish Archaeological Research Framework (Downes 2012) and are as follows:

- Early Bronze Age (2200–1550 bc)
- Middle Bronze Age (1550–1150 bc)
- Late Bronze Age (1150–800 bc)
- Early Iron Age (800–400 bc)
- Middle Iron Age (400 bc–ad 300)
- Late Iron Age (ad 300–400)
- Early Historic/Early Medieval (after ad 400)

2.5 Report structure

The archaeological features are described by area. This is followed by descriptions of the artefactual and environmental remains. The findings are pulled together and discussed by period at the end.

Some interpretations have changed since preliminary reporting (Headland Archaeology 2019a), including interpretation and numbering of structures. Some undated features and some artefactual material has been omitted from this report as they do not further contribute to the understanding of the site. These included an unstratified sherd of Late Neolithic to Early Bronze Age pottery with a herringbone pattern. Full details can be found in the unpublished archive report (Headland Archaeology 2019a).

Table 1 Radiocarbon dates calibrated using OxCal v4.3.2

Feature	Context	Lab sample	Material	Uncalibrated date bp	$\delta^{13}\text{C}$ ‰	Calibrated date at 68.2% probability	Calibrated date at 95.4% probability	Period
Structure 2 (Post Hole 120)	121 (single fill)	SUERC-93918 (GU55063)	Charcoal <i>Ilex aquifolium</i> (holly)	3178 ± 26	-28.0	1500–1420 cal bc	1505–1410 cal bc	Middle Bronze Age
Structure 1 (Ditch 187)	188 (upper fill)	SUERC-93919 (GU55064)	Charcoal <i>Alnus glutinosa</i> (alder)	3073 ± 26	-26.9	1400–1290 cal bc	1415–1260 cal bc	Middle Bronze Age
Cremation Pit 094	095 (fill within Vessel 2)	SUERC-93920 (GU55065)	Burnt human bone (femoral shaft)	3044 ± 26	-26.3	1385–1260 cal bc	1400–1220 cal bc	Middle Bronze Age
Tree Bole 017	015 (upper fill)	SUERC-93921 (GU55066)	Burnt human bone (indet. long bone)	2828 ± 26	-23.9	1015–930 cal bc	1055–900 cal bc	Late Bronze Age
Souterrain	141 (basal fill)	SUERC-93914 (GU55062)	Charcoal <i>Corylus avellana</i> (hazel)	1918 ± 26	-26.5	cal ad 65–205	cal ad 25–210	Middle Iron Age
Structure 2 (Ditch 151)	152 (single fill)	SUERC-93941 (GU55184)	Charcoal <i>Alnus glutinosa</i> (alder)	1609 ± 26	-26.7	cal ad 415–535	cal ad 415–540	Early Historic

3. ARCHAEOLOGICAL FEATURES

The excavation identified both settlement and funerary activity across Areas A and B from the Bronze Age and Iron Age (Illus 3 and 4). Bronze Age activity included four urned cremations, a possible tree root hollow with the cremated remains of two individuals within it and a pit group with a ceramic vessel and a grinder. The Iron Age activity comprised a large roundhouse and a souterrain. A feature group in Area B comprised of a curvilinear ditch and several pits could not be accurately dated, but is probably contemporary with other features on the site, based on associated fragments of pottery.

3.1 Structure 1

Structure 1 was located on a very slight slope in the north-west corner of Area A and comprised two curvilinear ring ditches and two post holes (Illus 3 and 5). The ring ditches appeared to have been formed from erosion rather than as cut features. The topography of the area sloped gently from west to east and the incline required the structure to be partially dug into the slight slope. The remains of Ring Ditch 187 were more extensive than the opposing ditch to the north (Ring Ditch 189) and included poorly sorted large stones within the homogeneous fills (Illus 6). Together, the two ring ditches in plan had an external diameter of 9.3m. The only internal feature was a linear gully (Ditch 195), which had an uneven base with two depressions that may have been the remnants of post-pads to support internal fittings. Two post holes were located to the south side of the structure and may have been potential structural features such as roof and wall supports. No ring groove with stakeholes was present on the perimeter of the structure, therefore it is likely that the outer wall was formed of turf and had an opening to the east in line with the axis of the ring ditches.

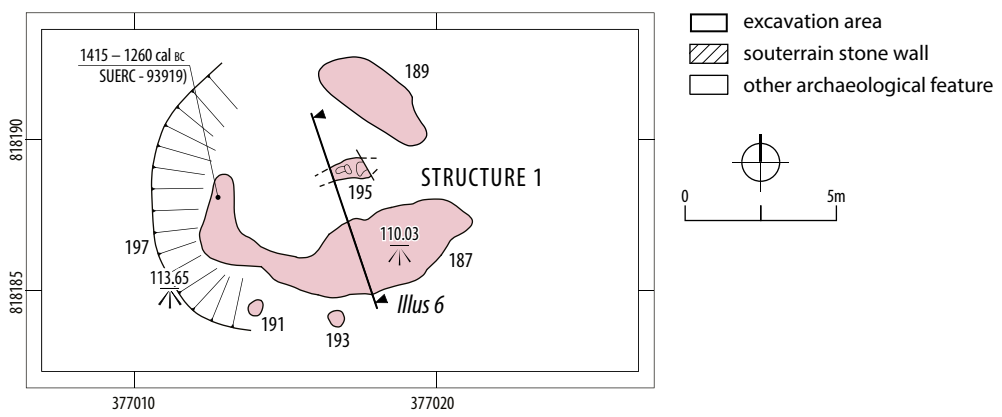
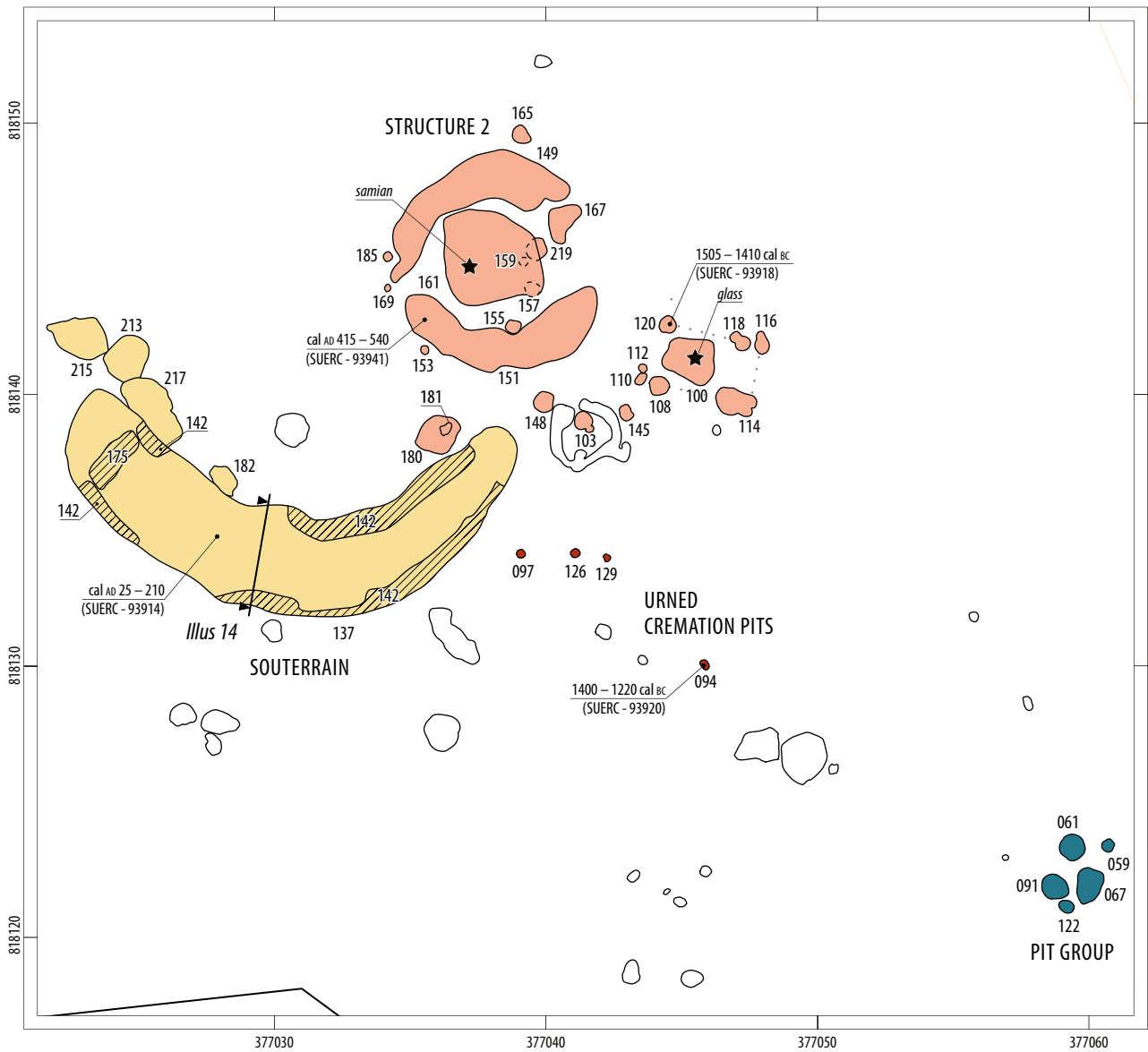
A sample of alder charcoal from the upper fill of Ring Ditch 187 was radiocarbon-dated to 1415–1260 cal bc (SUERC-93919; Table 1). The sample was recovered from the natural, upper fill of the ditch, after it had been abandoned and silted up, but could potentially be associated with the occupation of the structure, as it was relatively isolated from other features and further upslope. With no other hard

dating evidence for Structure 1, it is possible that it is contemporary with Iron Age Structure 2 (see 3.4). However, the nature of the construction of Structure 1, cut as it is into the slope, is more characteristic of Bronze Age than Iron Age building and thus the radiocarbon date from Structure 1 has been used, with caution, to date the occupation of the structure.

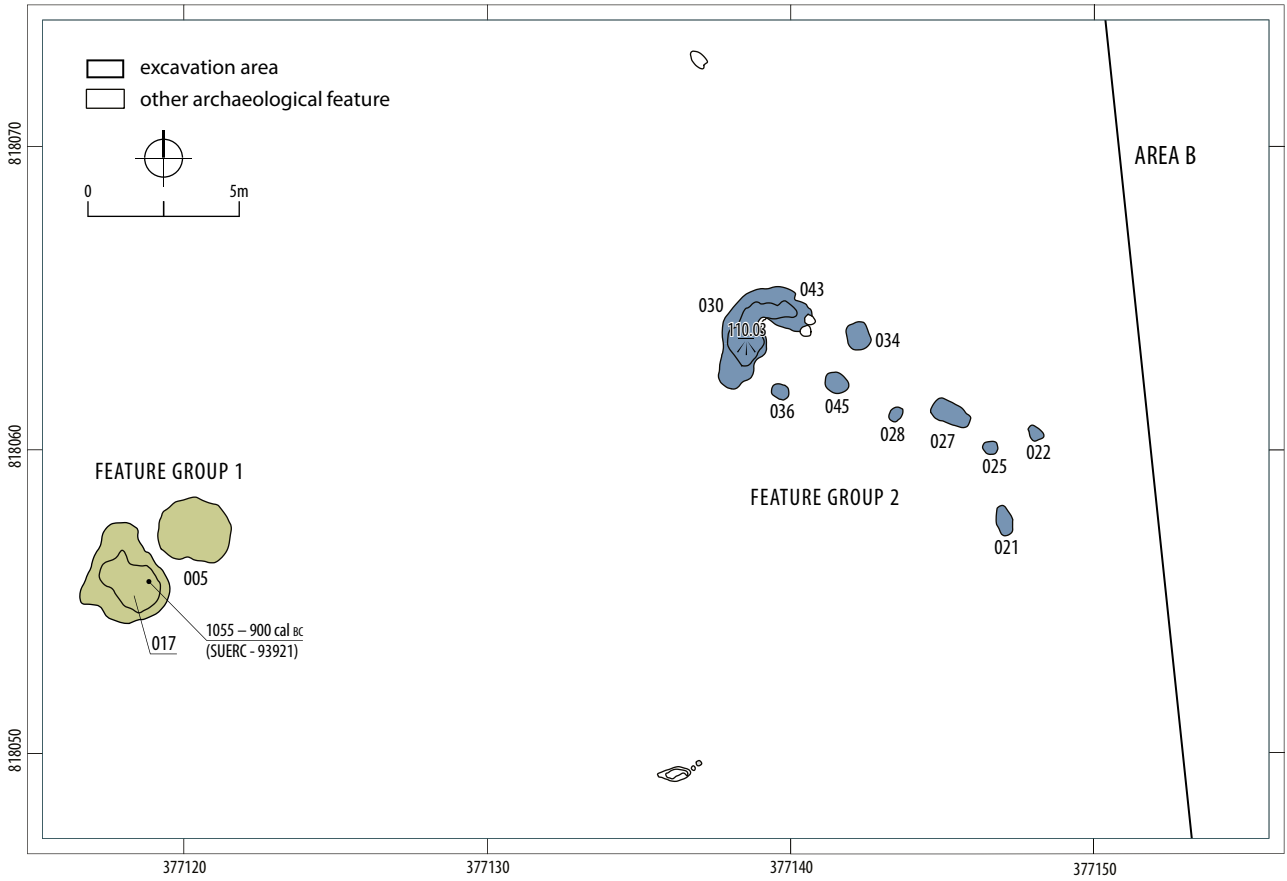
3.2 Urned cremation burials 094, 097, 126 and 129

Four urned cremation burials were located in the centre of Area A with Pits 097, 126 and 129 in a cluster and Pit 094 approximately 6m to the south-east. In general, the pits were shallow, steeply sided and had flat bases, with each containing an inverted bucket urn. All four urns, and possibly also the pits, had been truncated to differing degrees, with Vessel 5 in Pit 129 being the worst preserved (Illus 7). The truncation is also likely to have resulted in the loss of some of the cremated bone. It is unknown when this truncation occurred, but it is assumed that the agricultural practices of the post-medieval period would have had a significant impact on the survivability of the archaeology. As the pits survived to a depth of 0.1m, and assuming the present ground level is similar to that in the Bronze Age, it is assumed that the bases of the urns were above ground level and therefore potentially covered with a mound of earth. A summary of the urned cremation burials is presented in Table 2. Further details, discussion and illustration of the pottery is presented further in the text (4.1; Illus 18) and a discussion of the associated charcoal is presented in 4.7.

The cremated bone was subjected to osteological analysis. The minimum number of individuals was determined by the absence of repeated skeletal elements and age-related changes to the bone. Each vessel appeared to contain a single individual, mainly represented by skull vertebrae, rib and long bone fragments. Pits 097 and 129 contained probable adults, based on the size and robusticity of rib fragments. Pit 094 contained bones from a child aged between one and six years at the time of death. A fragment of the child's femur was radiocarbon-dated to 1385–1260 cal bc (SUERC-93920; Table 1), placing it in the Middle Bronze Age. The bone fragments from Pit 126 could not be used to determine the age of the individual.



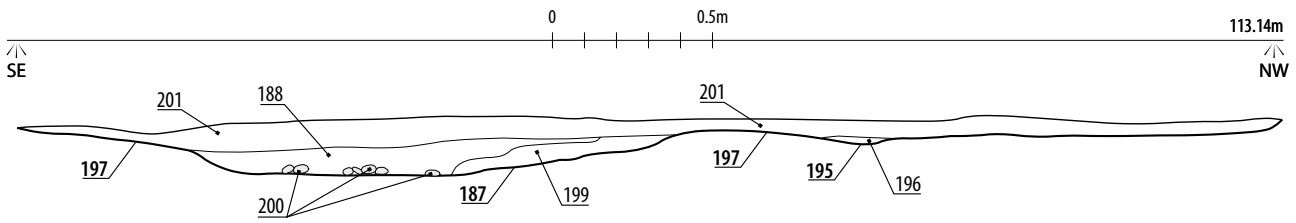
Illus 3 Archaeological features in Area A



Illus 4 Archaeological features in Area B



Illus 5 Structure 1, facing north



Illus 6 East-facing section through Structure 1



Illus 7 Vessel 5 within Cremation Pit 129

All bone was a uniform white colour, indicating that it was fully oxidised and cremated at temperatures over 600°C (McKinley & Bond 2001; McKinley 2004; Mays 2010). Cracking and U-shaped fissures were present on the outer bone surface of many fragments, which indicated dehydration of organic material. This also suggested that soft tissue was present at the time of burning (McKinley & Bond 2001).

3.3 Pit group (Pits 059, 061, 067, 091 and 122)

A cluster of five pits was located in the south-east of Area A. Prior to excavation, these were assumed to be associated with funerary activity based on

the presence of an urn in Pit 091 (Vessel 1, Illus 8). The infill of the pit was comprised of silty and clayey sand with inclusions of burnt bone and charcoal. The vessel was similar to those found in the urned cremation pits to the north-east, but it did not contain cremated human bone, was upright instead of inverted and had a stone lid (see 4.1 and 4.8 below for further discussion of this vessel and associated material).

Pit 067, to the east of Pit 091, also contained fragments of pottery (Vessel 6), which was similar to those present in the urned cremations. Residue was present on the interior surface, indicating domestic use of the vessel (see 4.1).

Table 2 Summary of urned cremation burials 094, 097, 126 and 129

Feature	Minimum Number of Individuals (MNI)	Age	Charcoal species	Vessel	Description	Illus
Cremation Pit 094	1	Sub-adult (1–6 years)	–	Vessel 2	Bone found within Vessel 2 and spilling into the pit fill. Inverted urn (plain, vertical-sided jar). Eleven possible sherds of V2 were found within Ditch 149 (Structure 2), indicating movement of material in the area.	Illus 18a
Cremation Pit 097	1	Probable adult	<i>Betula</i> sp. (birch), <i>Quercus</i> sp. (oak), <i>Alnus glutinosa</i> (alder), <i>Corylus avellana</i> (hazel)	Vessel 3	Bone found within Vessel 3 and spilling into the pit fill. Inverted urn (plain, vertical-sided jar). Burnt residue on the interior of the vessel indicating it may have been used domestically prior to being used as an urn. Charcoal was found within V3.	Illus 18b
Cremation Pit 126	1	Unknown	–	Vessel 4	Bone found within Vessel 4 and spilling into the pit fill. Inverted urn (plain, vertically-sided with slightly inverted profile). One pair of perforations near the rim of the vessel, pecked from the outside. Burnt residues on the interior suggesting domestic use prior to being used as an urn.	Illus 18c
Cremation Pit 129	1	Probable adult	–	Vessel 5	Bone found within Vessel 5 and spilling into the pit fill. Inverted urn (plain, jar-shaped). Fingernail impressions on inside of rim from shaping. Sherd of another pot found in Fill 131.	Illus 7



Illus 8 Vessel 1 with stone lid

Pit 061 immediately to the north-west of Pits 067 and 091 contained a stone grinder which may have been used to grind food or pigments. The surface of the grinder was well-worn, indicating that it may have been a favoured tool (see 4.5).

There were no finds recovered from Pits 059 and 122. The function and dating of all these pits is discussed in 5.1, below.

3.4 Structure 2

Structure 2 was a roundhouse located approximately 30m to the south-east of Structure 1 (Illus 2). It comprised two opposing curvilinear ring ditches, an inner post ring, a south-east-facing entrance porch, a C-shaped post feature and a spread of material in the centre (Illus 3, 9 and 10). Initially, this was thought to be two separate roundhouses (Headland Archaeology 2019a; Structures 2 and 4), however,

re-examination of the features, combined with the finds analysis, has identified that this was likely one structure; alternative layouts are discussed in section 5.2.

The curvilinear ring ditches (Ring Ditches 149 and 151) had uneven sloping sides and concave bases, the implication being that they may have been formed from wear of the internal floor area of the roundhouse rather than being a cut, structural element. Large, poorly sorted stones were recorded in both ring ditches, although these predominated in the southern ditch and may have been for water management or to provide a hard, level surface to minimise further wear. The two ring ditches together had an outer diameter of 8.13m. Fragments of pottery from several vessels were recovered from the fills of both ring ditches and are discussed further below (4.1). A sample of alder charcoal from Ditch 151 was radiocarbon-dated to



Illus 9 Mid-excavation of Structure 2, facing north-east



Illus 10 Entrance porch of Structure 2, facing east

cal ad 415–540 (SUERC-93941; Table 1), placing it in the Early Historic period though it seems likely that this material is intrusive (see 5.2). A possible hide rubber was also recovered from the ditch (see 4.5).

A spread of clayey sand with charcoal inclusions (161) was present in the centre of the structure, enclosed by the curvilinear ring ditches. The natural geology and sediments below the deposit showed signs of discolouration, possibly due to being affected by heat. This deposit may have represented material associated with the collapse of the structure, such as wall panels and roofing material, or the remains of a small hearth. Pottery, including a fragment of 2nd-century ad samian ware, was recovered from the deposit (see 4.2). The deposit masked three post holes (157, 159 and 219), and a fourth (155) was located to the south of the deposit.

Remnants of an internal post ring comprising Post Holes 153, 165, 169 and 185 closely followed the external arc of Ditches 149 and 151. The three post holes in the west were relatively small in diameter (*c.* 0.35m) and survived to a maximum depth of *c.* 0.14m. The shallow depth of the surviving post holes and complete absence of post holes on the north side suggests that the inner post ring was heavily truncated.

The rectangular entrance porch at the south-east of the structure was characterised by four large post holes (108, 120, 114 and 116). Post Hole 108 had a large packing stone at the base, which appeared to have settled in this location once the post had been removed, and Post Hole 120 had two packing stones set into the sides. Holly charcoal from Post Hole 120 returned a Middle Bronze Age radiocarbon date of 1505–1410 cal bc (SUERC-93918; Table 1), though, again, this seems unlikely to date the structure as it was likely residual (see 5.2). Centrally within the porch area, there was a large pit with poorly defined edges and an uneven base 0.29m deep and a fill which included occasional poorly sorted large stones. As with the curvilinear ditches within the structure, this likely represented an area of wear as a heavy traffic area. A fragment of 1st- or 2nd-century ad glass was recovered from this feature (see 4.3).

Post Holes 219, 159, 157, 155, 148, 103, 145, 110 and 112 formed a C-shaped feature in the interior of the structure and respected the entrance. Post Hole 57 was overlain by the later collapse

material in Spread 161 and Post Hole 155 respected the position of the southern Ring Ditch 151, which suggested that they were contemporary.

No ring groove with stakeholes was identified around the perimeter of the structure, which suggested that the external wall was comprised of turf. As this has not survived, it is not possible to know the diameter of the roundhouse. However, the external wall would have encompassed the north-eastern entrance of the souterrain, which would imply that the internal diameter exceeded 12m.

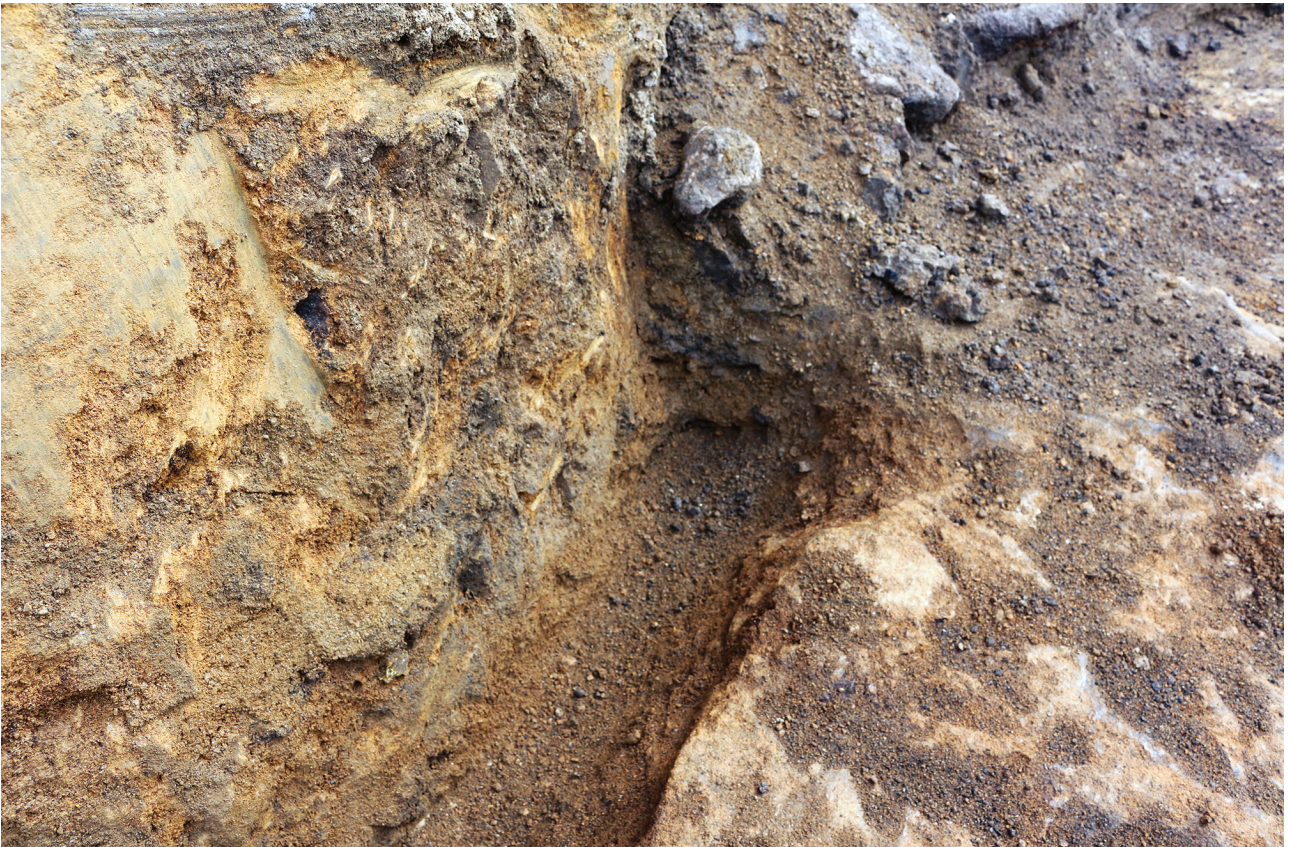
3.5 Souterrain

The souterrain was located immediately to the south of Structure 2, with the north-eastern end hooked under the putative line of the external wall of the roundhouse. It was a deeply cut, flat-bottomed curvilinear feature cutting the geological gravels and, in some areas, the bedrock. It originally comprised a single large chamber, the western end having been divided by a substantial, sloping rubble cross-wall. Overall, the souterrain was approximately 18m long and up to 3.4m wide, becoming narrower at the east end (Illus 11). It included rounded terminals, near-vertical sides 1.6m deep and a base formed of bedrock. A shallow gully 0.1m wide by 0.12m deep was cut into the floor at the base of the walls (Illus 12), which may have been to aid drainage or act as a beam slot for supporting a wall lining.

The souterrain was partially lined with large, sub-rectangular stones, with the best-preserved areas at the north-eastern end, where clear coursing of the stones was present on both sides. The walls of the central area were not as clearly defined, and the stones here possibly represented collapsed wall material. Little of the wall survived across the western half of the souterrain, with the only surviving segment found abutted by the cross-wall (175), which was located to the western end of the structure (Illus 13 and 14). The cross-wall was constructed of large, poorly sorted boulders, larger than those used for the wall lining. The top of the wall was 0.75m wide, formed of two rows of stones, with the base closer to 1.5m wide. The wall abutted the souterrain wall lining at both ends, indicating that it formed a secondary phase of construction or use. This wall cordoned off the west end of the souterrain from the main chamber, creating a small, 1.4m-wide space



Illus 11 Souterrain, looking east



Illus 12 Souterrain floor showing the side gullies, facing north



Illus 13 Detail of souterrain showing the cross-wall abutting the original side wall, facing west

behind it. This may have been purposely backfilled to support the cross-wall as it seemed to be undercut on this side, although the three distinct fills recorded in this area suggested a slower gradual infilling of the area.

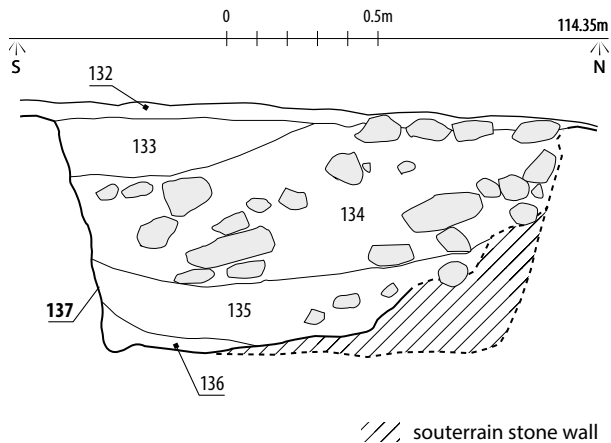
Access to the souterrain was not immediately apparent. A series of three intercutting and gradually deeper pits (213, 215 and 217) to the north-west end of the souterrain provided a potential access point. These pits were possibly rudimentary steps leading into the structure, although this would still have left a drop of approximately 1.3m to the base, suggesting that wooden steps or ladders may have been used. Pit 217, the lowermost of these, was located at the edge of the souterrain and aligned roughly with the cross-wall, which suggests they may have been contemporary. Two abraded saddle quern fragments and a rubber (see 4.5) and small quantities of undiagnostic pottery were recovered from the fill of Pit 217. This material may have been deliberately placed as a solid base for this step.

The primary deposits within the souterrain were present as a thin layer at the very base of the structure and contained small quantities of pottery,



Illus 14 East-facing elevation of cross-wall of souterrain, facing north-west

flecks of charcoal and small stones within a clayey sand. A stone sharpener or work surface was also recovered from this layer (see 4.5). These deposits may have been a debris layer accumulated during use or the initial stage of the abandonment of the structure. A sample of hazel charcoal from this primary deposit returned a Middle Iron Age radiocarbon date of cal ad 25–210 (SUERC-93914;



Illus 15 West-facing section through the centre of the souterrain

Table 1). Subsequent fills within the souterrain were likely formed by wind and water carrying gravels and sands, mixed with periods of collapse from the roof and internal features such as wall linings or partitions (Illus 15 and 16). No empirical evidence for roof supports, such as post holes, was identified within the souterrain. This implies that the roof would have been supported by the surround walls, either laid horizontally over the top of the structure or forming a gable. This timber frame may have been removed prior to abandonment, as no evidence for larger timbers was identified. A fragment of a cannell coal bangle (see 4.4) was recovered from the topsoil overlying the souterrain and may have been waste from the occupation of the roundhouse and spread over the area post-abandonment.

3.6 Feature Group 1

Two features (005 and 017) were located in the south-west of Area B. During the excavation, it was assumed that these were cremation pits, based on the presence of burnt human bone within 017



Illus 16 View of the deposits recorded within the souterrain during the preliminary stage of excavation, facing east

(Headland Archaeology 2019a). Subsequently, these features have been reinterpreted as possible tree root hollows, based on their irregular shape in plan and uneven sides, with the cremated remains being possibly incidental, introduced either as rakings from funeral pyres, or as material from disturbed cremation burials nearby. Both features contained a similar sandy fill with inclusions of large stones and fragments of pottery from several vessels (see 4.1). Feature 005 contained heat-affected stones, while 017 contained cremated bone from two individuals and associated charcoal.

Feature 017 (Illus 17) contained a primary fill that contained cremated bone, overlain by a raft of stones with an average size of 0.3m³. A further two deposits overlaid the stones and contained cremated bone. The skeletal material was analysed and represented at least two individuals: a probable adult and a child aged between two and six years old. The adult skeleton comprised fragments of skull, pelvis, vertebrae, leg, arm and a finger bone. The child skeleton comprised skull fragments, teeth, a rib shaft, a portion of the pelvis and an upper leg bone. An indeterminate long bone, probably from

the adult skeleton, was subjected to radiocarbon dating and returned a Late Bronze Age date of 1055–900 cal bc (SUERC-93921; Table 1). As with the skeletal material in the urned cremation pits, the bone had been cremated at over 600°C and was fleshed at the time of cremation. The skeletal material was spread throughout three contexts, with no clear distinction made for individuals within fills.

Feature 005 contained a single deposit with inclusions of burnt stone, pottery fragments and ashes, although no in situ burning was noted. Although no cremated bone was found within this feature, the presence of the burnt stone and ashes may be related to funerary pyres.

3.7 Feature Group 2

A curvilinear ditch (030), two post holes (043 and 045) and eight pits (021, 022, 025, 027, 028, 034, 036 and 039) were located at the eastern side of Area B. The curvilinear ditch was approximately 4m in length and was uneven in plan. As with the curvilinear ditches associated with Structures 1 and 2, the base had frequent, poorly sorted large stones



Illus 17 View of Treebole 017, facing west

overlain with a dark brown sand. The similarities between the ditch and those of the roundhouses in Area A imply that this may also have been a roundhouse ring ditch, though more poorly preserved and smaller in size. Two shallow post holes were located immediately to the east which may have been associated structural elements.

There were eight sub-oval pits close to the ditch but they did not provide any insight into their function, nor could they be established as being part of a structure. Several fragments of pottery from the ditch and two of the pits could only be broadly dated as 'late prehistoric', but did not shed any light on the function of the features.

4. FINDS AND ENVIRONMENTAL EVIDENCE

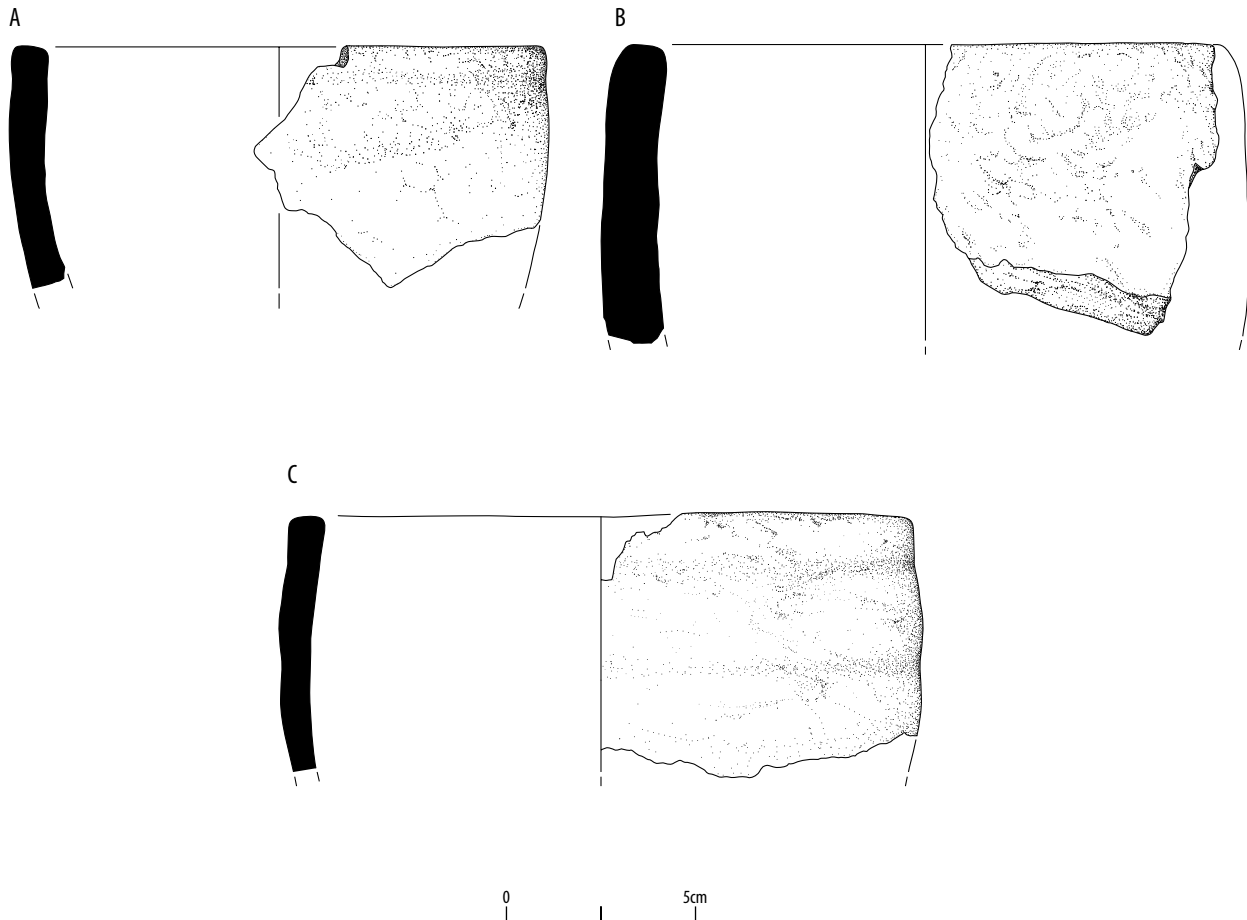
The finds assemblage from Thainstone predominantly comprised pottery from the urned cremation burials, the pit group, Feature Group 1 and Structure 2, and stone tools from the pit group and souterrain. Isolated finds such as samian ware and glass were also identified from Structure 2. Vitrified material was identified, which indicated that metalworking had occurred within the area or in the proximity. Additionally, charcoal and plant remains were also recovered from samples. All artefactual and environmental materials were analysed by specialists, with the results adding to the overall understanding of the site, including potential contemporaneity of features and structures.

4.1 Pottery

At least 19 vessels were represented in the pottery assemblage, with the most intact from the cremation

burials and Pit 091. In comparison, the pottery from Structure 2 and the souterrain were more fragmentary. Unstratified pottery has been omitted and will not be discussed further.

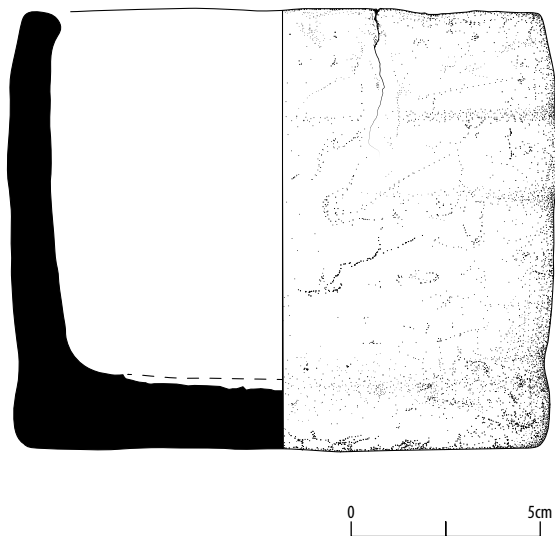
The inverted cremation urns (Vessels 2–5; Table 2) were all undecorated bucket-shaped urns commonly associated with the Middle to Late Bronze Age (Illus 18a–c). Vessels 3–5 were made of a fine clay with frequent, large, angular grits measuring up to 5mm, and had a micaceous surface. Vessel 2 was made of a similar fabric but had occasional, rounded grey grits of up to 2mm. Rim diameters varied from 130mm to 160mm and had a wall thickness between 10mm and 15mm. The rims were flat, some with rounded corners, and Vessel 5 was internally bevelled. Vessel 4 had two perforations close to the rim on one side, possibly from an attempt to repair it. A similar vessel was found at Kintore, Aberdeenshire (MacSween 2008: 188). Vessels 3 and 4 had burnt residue on their interior surface, indicating they had been



Illus 18 Vessels associated with cremation burials: **A** Vessel 2, Cremation Pit 094; **B** Vessel 3, Cremation Pit 097; **C** Vessel 4, Cremation Pit 126

used domestically prior to being used as funerary urns. All the vessels were constructed using angled straps, with Vessel 4's straps being narrower and more prominent. The surfaces were smoothed with a wet hand or cloth prior to firing. The uniformity in colour across the pots indicated close control of the temperature within the kiln, resulting in an even firing.

Two vessels were also present in the pit group in the south-east of Area A: Vessel 1 from Pit 091 (Illus 19) and Vessel 6 from Pit 067. Vessel 1 was a plain, jar-shaped urn with a flat base and vertical sides which tapered slightly to a relatively flat rim and had a wall thickness between 11mm and 13mm. It was similar to Vessels 2–5 in form and fabric and had also been constructed using angled straps. Unlike the urns in Pits 094, 097, 126 and 129, Vessel 1 was upright and had a stone lid. Vessel 6 from Pit 067 contained fragments of a robust, large jar-shaped vessel, constructed of a similar clay to the cremation urns in Area A. Residue was present on the interior surface, indicating that the vessel was used domestically, like Vessels 3 and 4. Additionally, fragments of three vessels (17–19) were also located within Feature Group 1. Feature 017 contained a rim sherd from a slightly inverted, fine clay vessel (Vessel 17) and a body sherd from a robust vessel with a raised, rounded ridge, possibly from a cordon or a crude strap joint (Vessel 18). Vessel 19 was characterised by a featureless wall sherd and was



Illus 19 Vessel 1, Pit 091

recovered from Feature 005. Vessel 17 was probably a bucket urn and was similar to the cremation vessels in Area A.

Undecorated jar- or bucket-shaped urns are a widely known form, falling within the 'bucket urn' category or its domestic equivalent, 'flat-rimmed ware'. It is now generally accepted these terms do not describe a coherent group and are likely to mask subtle chronological and local variations which are yet to be fully explored (Bradley & Sheridan 2005: 275; Halliday 1988: 108; Sheridan 2003: 211). However, while earlier studies placed bucket urns anywhere between the 3rd and 1st millennia bc (Coles & Taylor 1970: 97–8), the re-dating of urns from stone circles has reduced this range and a date between the mid-2nd millennium bc and around 800 bc is now most likely (Bradley & Sheridan 2005: 227–8; Sheridan 2015: 146). Parallels for these urns are therefore widespread, for example in Middle Bronze Age contexts at Meadowend Farm, Clackmannanshire (Sheridan 2018: 287–8), Late Bronze Age and Iron Age deposits in Sculptor's Cave, Covesea (Cruikshanks & Sheridan forthcoming) and at Iron Age Meare Lake Village in Somerset (Bulleid & Gray 1948: 48). More locally, two very similar urns were found in Middle to Late Bronze Age cremation pits at Kintore, Aberdeenshire, one of which has a double perforation near the rim (MacSween 2008: 188). Similar pots were also found in Bronze Age roundhouses at Drumyocher, Aberdeenshire (Johnson 2017: illus 18), showing the difficulties in assigning function from form alone.

The pottery assemblage from Structure 2, the souterrain and the Feature Group was less coherent than that from the cremation features, as most vessels were represented by a single rim or undiagnostic body sherds. Vessels 7 (Illus 20a), 8, 9, 10, 12, 13, 14 and 15 were recovered from the curvilinear ditches and Vessel 16 (Illus 20b) was within a post hole in Structure 2. The most notable was Vessel 7: a vessel with gently everted rim, fine wall and decorative line of fingernail impressions along the rim and a diameter of 180–200mm. Vessel 8 had an unusual internally lipped rim and Vessels 9–10 and 13–15 were variations on the flat-rimmed ware group. Vessels 12 and 16 were plain, rounded forms. Many of the sherds were notably abraded and some features or spreads, especially within Structure 2, produced single sherds from several different

vessels, all suggesting midden-like material which had been moved around over time. The majority of the pottery from Structure 2 could only be broadly dated as 'late prehistoric', with only Vessel 7 being confidently dated to the Iron Age.

The souterrain and other isolated features are summarised together as no distinctive vessels were noted. All sherds from these features could conceivably belong to other vessels discussed above. A total of 34 sherds were recovered from these features, with small clusters of eight sherds from Pit 217 (part of the souterrain) and six each from Pit 027 and Ditch 030 and five from Pit 028 (all part of the pit group). The sherds display a range of wall-thicknesses, fabrics, surface abrasion and colour, illustrating a very mixed, dispersed assemblage, as with that from Structure 2, and are therefore potentially broadly contemporary.

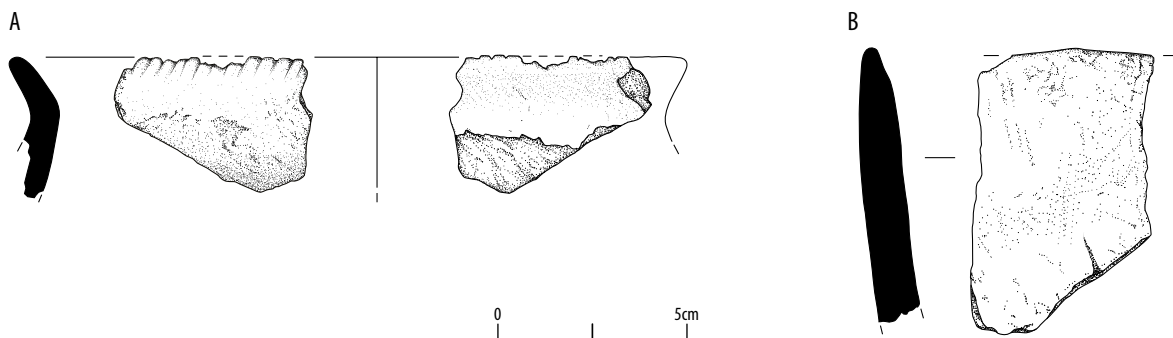
The Iron Age pottery sequence in north-east Scotland is still poorly understood. Assemblages tend to be small and it seems ceramic vessels were not commonly used in this area during the Iron Age compared to preceding periods or in some other areas, for example the Western Isles. Even on sites which have seen large-scale excavation, such as at Birnie, Culduthel and Kintore (MacSween in prep; 2008; 2020), a significant proportion of the pottery assemblages tend to derive from early prehistoric activity at the same site. The only vessel from Thainstone to have firm Iron Age parallels was Vessel 7, with everted rim, relatively thin walls and fingernail decoration. For example, two pots of similar everted-rim form and fabric to Vessel 7 were

discovered at Birnie, Moray, which contained hoards of late 2nd-century ad Roman denarii (Holmes 2006: 3). Examples have also been recovered from Redcastle souterrain, Angus, dating to the first few centuries ad (McGill 2005: 79) and from Dunnicaer promontory fort, dating to between the 2nd and 4th centuries ad (Cruickshanks forthcoming). However, none of those vessels were decorated and the fingernail-impressed rim is difficult to parallel in this area. Fingernail-impressed decoration was widely employed on pottery in the Western Isles during the Iron Age, for example at the Iron Age wheelhouse at Cnip on Lewis (MacSween 2006: 98). Dating the pottery assemblage from Structure B is therefore problematic, as Iron Age assemblages are poorly understood in the area and with the ubiquity of 'flat-rimmed ware', it is not unreasonable to suspect this type of vessel would have continued into the Iron Age.

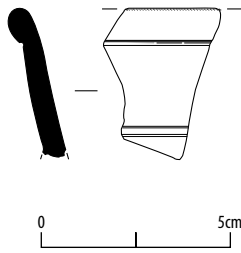
4.2 Samian ware

A single sherd of Roman pottery was recovered from the central spread, 161, of Structure 2 (Illus 21). It was the rim sherd from a central Gaulish samian-ware vessel (form 37) of a 2nd century ad date. Heavy post-depositional wear impeded the assessment of its condition, but there was no certain evidence that it had been reused (as samian ware often was), as wear around the edges was similar to that on the later prehistoric sherds from the same spread.

Sherds of samian ware are the commonest form of Roman pottery in north-east Scotland, although



Illus 20 Vessels from Structure 2: **A** Vessel 7, Ring Ditch 149; **B** Vessel 16, Post Hole 157 and Deposit 161



Illus 21 Samian-ware fragment from Deposit 161, Structure 2

still rare. Generally, only a single sherd of a vessel is represented. The dominant types are the form 37 deep bowl (as here) and form 31, a shallow bowl. These forms have seen extended recent discussion in the context of finds from Sculptor's Cave, Moray (five sherds, showing clear signs of abrasion for possible pigment; Wallace forthcoming), Deskford, Moray, and Dunnicaer, Aberdeenshire (both single sherds showing no reuse; Wallace 2019 and 2020). In the cases of Sculptor's Cave and Deskford, the contexts suggested these sherds were purposely deposited at ritually significant sites, but at Thainstone it came from a deposit which contained sherds of indigenous pottery in a similar condition, each vessel similarly represented only by a single sherd. The treatment of the exotic samian ware thus mirrors that of the indigenous material.

The date of the samian ware corresponds to the fragment of glass in Pit 100 from the entrance porch of Structure 2, which supports the probability of the structure being of a Middle Iron Age date. Additionally, the similarities in condition of the indigenous pottery from Structure 2 with that of the samian ware could support the fact that the pottery dated as 'late prehistoric' could be Iron Age.

4.3 Glass

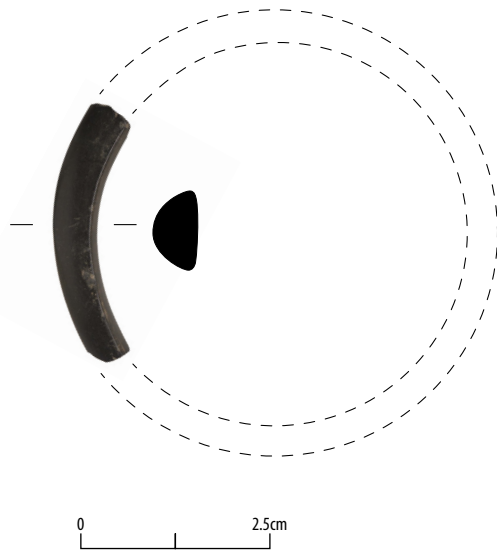
A small fragment of glass was recovered from Pit 100 in the entrance porch of Structure 2. The colour and quality of the glass were appropriate for a date in the 1st or 2nd centuries ad, but the preserved profile could not easily be accommodated within the range of forms commonly made in that colour and which could be expected at that date. The profile had a tight curve, but it was clearly not from an open pushed-in base ring, of the form found on

jugs and jars of Isings forms 52, 55 and 67c, and was too large to be the loop from the top of the rim of a collared jar (Isings form 67c) or a tubular-rimmed bowl (Isings form 44). The profile would be appropriate for the outer edge of an unguent bottle with a wide discoid reservoir (Isings form 82A2/B2; Price & Cottam 1998: 175–7) but unfortunately the fragment was too small for a reliable body diameter to be established which would aid in the identification. Such vessels were in use in the 2nd century, however in comparison to the types of jugs, jars and bowls mentioned above, unguent bottles of any form appear to be very rare amongst the glass types that are occasionally found on native sites in Scotland during the Roman period (Ingemark 2014: 121–2).

4.4 Cannel coal bangle

A fragment of a cannel coal bangle (Illus 22) was recovered from a spread of topsoil overlying the infilled souterrain. This is a long-lived style of jewellery, but locally unusual owing to the absence of suitable raw materials in the area. Cannel coal is typically associated with the Coal Measures deposits of central Scotland (Fife being the most northerly), and with a more northern series of workable deposits in Jurassic rocks in eastern Sutherland, around Brora (Gibson 1922: 10–25, 31–6, 43–6; it is not clear if a potential source at Shandwick in Easter Ross is workable). It is thus an exotic raw material for Aberdeenshire, and this is reflected in its rarity in the regional record.

Such finds are all but unknown from later prehistoric and early medieval settlement sites in Aberdeenshire. The only known example is an unfinished bead or ring from the Pictish enclosed site of Maiden Castle, near Bennachie (Cook 2011: 28). It is striking that two other examples were associated with much older ritual or burial monuments, and were likely to relate to later prehistoric veneration or ritual acts at these sites: a bangle fragment from the recumbent stone circle at Old Keig, and a ring-pendant in a cache of Roman Iron Age charms inserted into an older burial cairn at Cairnhill, Monquhitter (Childe 1934: 389–90; Stevenson 1967). A related cache may be the hoard from Bruce's Camp, close to Thainstone, which included a series of shale or cannel coal globular gaming



Illus 22 Cannel coal bangle from Deposit 088 overlying the souterrain

pieces of 3rd–6th-century ad date (Callander 1927: 243–6; Ralston & Inglis 1984: 57; Caldwell et al 2006: 78–9).

Two stray finds add a little to the picture. An intact ring (a stray find from Huntly Castle; NMS X.FN 10) was likely an unusually small ring-pendant, which was an Iron Age type, while an undatable unfinished bead came from West Wrangham, Culsalmond (Aberdeen University Museum, 17493). The southern shore of the Moray Firth shows rather more finds in the later Bronze Age and Iron Age, probably because access to the sources at Brora and Dunrobin was easier. Numbers are small, however, with only a very few finds from any one site (Hunter 2012: 46).

Such black-stone bangles were a long-lived type, and only certain forms have so far proved chronologically diagnostic. Typologically, this example cannot be more tightly dated, and the unsecure context suggested it was not well stratified. We can thus only assume that it ties in to one of the phases of later prehistoric activity on the site. The rarity of such finds in the area would have made it an item of some value, which explains attempts made to repair it after breakage, although their crudity suggests a lack of expertise with the material.

4.5 Stone tools

An assemblage of six coarse stone artefacts was recovered, including a stone grinder from the pit group, a hide rubber from Structure 2 and a further four tools associated with the souterrain.

The quartzite grinder in Pit 061 of the pit group (Illus 23) was very heavily used, evident in the wear across almost all its surface, indicating it was a favoured tool, or perhaps a shortage of suitable cobbles nearby. Grinders were a basic form of cobble tool in use throughout prehistory and could have been utilised for a wide range of tasks, such as grinding foods or pigments.

The glossy staining on the schist cobble tool from Ditch 151 in Structure 2 suggested it was used as a hide-rubber, to rub preservatives and/or pigments into hides during the tanning process. Hide-working was likely to have been a common activity on most sites in prehistory but the, often subtle, traces left on hide-working tools mean the craft is probably underrepresented.

Two saddle quern fragments and a rubber were located within Pit 217, immediately to the north of the souterrain, and appeared to form the basis of an external step into the structure. Additionally, a sharpener or work surface was recovered from within the basal fill of the souterrain. The granite saddle querns and quern rubber, from Pit 217, were essential everyday food preparation tools and would have been vital to every prehistoric household (Illus 24). Despite, or perhaps because of, their everyday nature, querns are likely to have been highly valued and their role in structured deposits has seen a great deal of research (eg Brück 2001; Peacock 2013; Watts 2014). The three fragments at Thainstone were all recovered from the lowest of three steps into the souterrain, suggesting they had been reused as paving. Such reuse of querns in structural elements such as paving, walls or post-hole packing has been noted throughout the history of their use (Peacock 2013: 173) and may have been a form of foundation deposit in hope of an auspicious beginning to a new structure.

The quern forms are not chronologically distinct, but their deposition seems likely to correspond with the souterrain's construction. Querns have been recovered from similar structured deposits on other later prehistoric sites in north-east Scotland, such as



Illus 23 Stone grinder, Pit 061



Illus 24 Quern stones and rubber, Pit 217, step into the souterrain

saddle quern fragments in paving of a souterrain-like feature at Stracathro, Angus (Cruickshanks 2018), rotary querns placed in the paving of Ardestie

and Carlungie souterrains in Angus (Wainwright 1963: 132–4, 144–5) and saddle querns in various structural elements of the roundhouses at Kintore, Aberdeenshire (Engl 2008: 221–5), illustrating how long-lived and widespread this tradition was.

The schist fragment of sharpener or work surface from the basal fill of the souterrain had linear grooves, suggesting that it had been used for sharpening or shaping bone or metal points/pins. The function of the object was difficult to confirm based on the small size of the fragment.

4.6 Ironworking

A total of 514g vitrified material was recovered during excavation and sample processing. Most of the material recovered was diagnostic of ironworking, including both smelting and blacksmithing. Smelting slag was recovered from an isolated pit, while very small quantities of residual hammerscale from blacksmithing were dispersed in contexts across the site. It is therefore unclear when the blacksmithing activity dates from.

The isolated pit (Pit 205, Illus 2) was *c* 35m north-east of Structure 2. The unabraded nature of

the smelting slag recovered from this feature strongly suggested this was an in situ deposit or primary dump with little disturbance since deposition. The pit's dimensions (approximately 0.4m in diameter) were consistent in size with local Iron Age furnaces (Cruikshanks 2017), suggesting it may have been the plough-truncated base of an iron smelting furnace. However, no fired clay lining was present. A primary dump was therefore more likely, which suggests a smelting furnace was in operation nearby. The pit was undated, and iron slag is rarely chronologically distinct, since the process changed little from the Early Iron Age to the post-medieval period in many rural areas. However, the proximity of this feature to an Iron Age roundhouse and souterrain adds weight to the ironworking activity also being Iron Age, as ironworking evidence in north-east Scotland is almost exclusively found on open roundhouse settlements (Cruikshanks 2017).

Very small quantities of hammerscale and slag spheres were recovered from various features across the site, including from Post Hole 120 in Structure 2. These micro-debris form when hot flakes and droplets of slag fly from iron as it is hammered, and in larger quantities can reveal the position of a blacksmith's hearth and anvil. The quantities here were too small and were more likely to have become dispersed across the site over time, making it difficult to now know exactly when or where the blacksmithing was taking place.

Based on current evidence, the Moray Firth saw the most intensive ironworking activity in Scotland during the Iron Age, with several sites, such as Culduthel, Birnie and Clarkly Hill (Hatherley & Murray 2020; Hunter in prep a; b), producing multiple furnaces and huge dumps of slag. Not all sites in the area were producing on a large scale though, with several, like Thainstone, providing evidence of small-scale or even single-event ironworking. Iron Age ironworking sites are currently scarcer in Aberdeenshire than around Moray and Inverness, therefore this site is potentially an important addition to our understanding of ironworking on the fringes of the main production region.

4.7 Charcoal

Charcoal fragments of birch, oak and hazel were recovered from within Vessel 3 of Cremation Pit 097. These fragments were possibly from the pyre and the fuel used in the cremation, and would have been collected with the cremated skeleton. Charcoal analysis on material from a variety of Bronze Age cremation burials have indicated that certain tree taxa, primarily oak, were preferentially selected for inclusion in cremation contexts across Britain and Ireland, but that these patterns in fuel selection did vary across regions (O'Donnell 2016). Oak has been identified as the abundant taxon in cremation samples at many sites in Scotland, including Ness Gap, Fortrose (Woodley et al 2020) and Skilmafilly, near Maud, Aberdeenshire (Cressey 2012). The Skilmafilly charcoal assemblage bears some similarity to that of Thainstone, consisting of oak, birch, hazel and alder, though at Skilmafilly alder was present in only trace amounts. A further assemblage from Nether Beanshill to the north-east of Milltimber, Aberdeenshire (Dingwall et al 2019) also comprised alder and hazel branches and twigs, but with only occasional oak fragments present.

Oak and birch were also recovered from Feature 017. The oak charcoal was from heavily fragmented 'blocks', which suggested that it derived from a mature tree. This was further supported by the lack of curvature in the rings of the transverse surfaces, indicating that it was from the trunk or a major branch. The birch charcoal was heavily fragmented, and it was often not possible to determine the diameter of the wood. Nor was it possible to ascertain whether the birch was structural pyre material or fuel. While it is possible this material derives from a domestic hearth, the types present mirror the findings of the urned cremations and thus may derive from funeral pyre rakings.

Oak, alder, birch and hazel are all species that are native to north-east Scotland (Cressey 2012) and were commonly available in Bronze Age Scotland (Tipping 2003). The reason for the association of oak with Bronze Age cremations is unclear. One hypothesis is that due to the strength of oak wood it was used for spars to support a body (Cressey 2012). The tree species in the Thainstone cremations, and in other nearby contemporary cremation deposits, would all have been locally available and therefore

provided a ready supply of fuel and timber for domestic and funerary activities.

Charcoal from the souterrain was recovered from two fills from within the structure. Samples from the basal fill comprised birch (*Betula* sp.), roundwood fragments, with smaller amounts of heavily fragmented oak (*Quercus* sp.), willow (*Salix* sp.) and hazel (*Corylus avellana*). Charcoal from a later deposit was very similar in nature, with an abundance of birch and small numbers of heavily fragmented hazel and smaller numbers of oak. Most of the non-oak charcoal was of fragmented roundwood and the birch charcoal appeared to derive from small (10–20mm) diameter branches. It was not possible to establish the diameter of the hazel and willow due to its naturally fragmented nature. Birch, hazel and willow roundwood would have been ideal for wickerwork panels and stakes due to their pliable nature. The oak fragments appeared to derive from trunk wood. Willow, birch and hazel roundwood fragments were also present in a charcoal-rich spread (182) located on the northern side of the souterrain. This deposit was not radiocarbon-dated but was assumed to be contemporary with the occupation and use of Structure 2 and the souterrain. The birch and willow derived from small-diameter (10–20mm) roundwood branches, and the hazel from slightly smaller branches (10–15mm). With the addition of willow, the taxonomy of the charcoal identified in the souterrain and Spread 182 was similar to that of the cremation pits, suggesting these species were still locally available in the Iron Age. The small-diameter birch, hazel and willow roundwood would have been ideal for wickerwork panels and stakes, which may have been used in addition to the stone lining of the souterrain at Thainstone. The function of the carbonised wood from the souterrain is difficult to determine, and whilst it is possible that the wood comprised internal structural elements (walling, roofing or flooring), the versatility of these wood taxa means they could have served as many other artefacts such as baskets, poles or fuel.

4.8 Other plant remains

A moderate number of cereal grains were recovered from features across the site. The grains exhibited mixed levels of preservation ranging from moderate to poor. Sixteen abraded cereal grains were present in the upper fill of Feature 017 but were likely to have been intrusive rather than deliberately deposited. Hulled barley (*Hordeum vulgare*) was the most-encountered cereal and most abundant in Ditches 151 and 149 in Structure 2, and in the fill of the souterrain. The small assemblage offers some information on site economy. Hulled barley appeared to be the dominant grain throughout, suggesting that it must have been the main cultivar in the area and that some crop-processing was being carried out on-site. One of the many hypotheses regarding the use of souterrains is for the storage of agricultural produce (Dunwell & Ralston 2008). However, given the relatively small number of grains recovered from the souterrain, and their poor condition, it is likely that they had undergone some movement prior to burial. Therefore, it is more likely that the barley was incidentally incorporated into the souterrain rather than stored there.

Hazel nutshell (*Corylus avellana*) was present in small amounts (generally <0.1g) in eight features. The largest amount of nutshell (1g) was present in Ditch 187 from Structure 1. Hazelnuts were a common resource which were exploited during the Bronze Age and Iron Age (Bishop 2019).

A small number of weed seeds, such as common nettle (*Urtica dioica*) were recovered from Feature 017 and Pit 091 of the pit group. Charred weed seeds were also recovered from a small number of settlement-related features and comprised seeds of grasses (*Poaceae*), peas/vetches (*Lathyrus/Vicia*), seeds of the knotweed family (Polygonaceae), chickweed (*Stellaria media*) and brambles (*Rubus fruticosus*). The presence of these seeds further suggests the exploitation of local wild resources.

5. DISCUSSION

The archaeology at Thainstone represented two main phases of occupation across a relatively small area, with the earliest evidence dating from the Middle Bronze Age followed by a period of Middle Iron Age settlement activity. Similar patterns of activity have also been identified at Boynes Farm, Inverurie (Dalland & Cox 2014), 2km north of Thainstone. The cremation burials, standing stones and stone circles enhance the notion of a largely ritual landscape with evidence of settlement, although not necessarily contemporary. All of the sites are close to the River Don and its tributary, the River Urie, and it is likely that this, along with the favourable landscape, is the reason for so much prehistoric activity in the area.

5.1 Middle to Late Bronze Age

Structure 1, located on a platform dug into a slight slope in the north of Area A, was probably the earliest building, based on the radiocarbon date of charcoal (1415–1260 cal bc; SUERC-93919; Table 1), which was recovered from the internal ring ditch. As there was flat land in the area, it is interesting that the inhabitants chose to cut the structure into a slope by creating a purpose-built ledge, as this would have required substantial effort. The location may have been viewed as a strategic location that would provide some shelter to the building, prolonging its usability. Additionally, there are questions regarding the construction and function of Structure 1, as only a small arc of an inner post ring was visible. It is possible that an outer turf wall may have extended beyond the platform and was later truncated by ploughing. Internally, it appears that the ring ditches were eroded hollows which had been filled with stone to level the floor area and prevent further wear. Alternatively, Structure 1 may have been a small single post-ring structure, possibly not used as a dwelling but as a store or to house animals, and the wear pattern in the interior was caused by the movement and settling of animals. The stone fill of these depressions possibly represented upgrading of the floor area, bringing it back to the original level and preventing further wear. This maintenance may also have signalled a new use for the structure which would have required a level floor. Structure 1

was similar to Roundhouse 24 at Kintore (Cook & Dunbar 2008: 90, Fig 49) in that it was set into a slope and that the ring-ditches were filled with stone. In the Kintore example, the stone was interpreted as a possible work surface and the same may be seen in Structure 1. Platform settlements are a known phenomenon of the Bronze Age (Terry 1995; Pope 2015) and usually located in upland areas with limited flat land, such as at Clyde Windfarm, South Lanarkshire, where multiple structures were built on purpose-built platforms within the Clyde Valley (Cox & Woodley forthcoming). These structures were dated to the 2nd millennium bc and therefore broadly contemporary with Structure 1 at Thainstone. As the dating of Structure 1 was somewhat challenging due to a paucity of datable material, it is possible that Structure 1 was also from the Middle Iron Age and potentially contemporary with Structure 2. If they were broadly contemporary, they would have been visible to each other, or at least the remains of the structures would have been visible in the landscape.

The urned cremation burials also date to the Middle Bronze Age and are quite possibly contemporary with the occupation of Structure 1, based on the radiocarbon-dating of the charcoal from Pit 094 (1400–1220 cal bc; SUERC-93920; Table 1). The four cremation burials may have existed in isolation or may be related to the cairn which was removed from the site prior to 1964. Unfortunately, the precise location of the cairn is unknown, with records suggesting it was adjacent to Camie's Stone. The association between Middle Bronze Age cremations and contemporary and earlier monuments has been explored in the region (Phillips et al 2006). Groups of similar shallow cremation pits seemingly not associated with monuments but close to a roundhouse were seen at Nether Beanshill, Aberdeenshire (Dingwall et al 2019: 149). The urned cremations at Thainstone were approximately 40m to the south-east and further downslope of Structure 1. The association between the cremations and associated settlement and monument features is uncertain, reflecting the complexity of Bronze Age burial practices.

The pit group containing a stone lidded vessel and a grinder at the south of Area A is assumed to be from the Middle Bronze Age, based on the similarity of the vessels with those in the urned

cremation burials. The purpose of the deposition of materials within these pits is not fully understood. It is possible they were domestic waste pits, broadly contemporary with Structure 1 and the urned cremation burials. However, it is also possible that they were symbolically deposited, as suggested by the seemingly deliberate deposition of Vessel 1 and the grinder. It seems reasonably clear that the stone lidded vessel had been deliberately deposited within the pit and that it contained something at the time, protected by the stone lid. A similar pot from Late Bronze Age deposits in Sculptor's Cave, Covesea, held a mutton bone when found, suggesting it had been left with an offering of food (Cruickshanks & Sheridan forthcoming). There were no such finds within the Thainstone pot, but a small quantity of nettle seeds within the pit fill may have derived from brewing the plant for tea or grinding it for pigments. The reason for the apparent selective deposition of the grinder and vessel is unclear, but adds to the ongoing study of the reasons behind such deposits. Becker (2013) has suggested that certain artefact types, which represented certain social identities, were deposited to literally and symbolically transform artefacts and the concepts that they embodied. It is possible that this was the aim here, possibly to claim a legitimacy to a social standing or position in society.

Cremation activities were also identified into the Late Bronze Age as evident in the cremated human bone from Feature 017. It seems unlikely that this material represents *in situ* cremation burials. It is possible that it represents either pyre rakings containing fragments of uncollected bone, or disturbed and redeposited cremation burials. The burnt stones in Feature 005 could have derived from an area used for funeral pyres; the pottery suggests redeposited cremations and the ashes and charcoal could have been related to either scenario. While the dating of these remains clearly indicates cremation burials in the general area into the Late Bronze Age, it is not clear where these burials were located.

The archaeological record of the north-east of Scotland signifies that a broad range of burial types were occurring during the Bronze Age, such as inhumation, cremations and cist burials (see Greig et al 1989; Hanley & Sheridan 1994; Ralston 1996; Cook 2008; Johnson & Cameron 2012; Suddaby forthcoming). The excavation and

research of the Early Bronze Age cremation site at Skilmafilly, Aberdeenshire (Johnson & Cameron 2012) had evidence of urned and unurned cremations and contained an assortment of grave goods. In comparison, at Silvercrest, Elgin, a cluster of five burials were excavated beside an enclosed cemetery, with both burial types contemporary with each other. Unfortunately, less is known about the development of burial types in the Middle Bronze Age and into the Late Bronze Age, with suggestions that the practice may have been less common in Aberdeenshire (Ashmore 2001: 1–2; Cook 2016: 64). As infrastructure continues to develop in the north-east, particularly around Aberdeenshire, it is hoped that more Middle to Late Bronze Age burial sites will be excavated, further elucidating our understanding of burial sites from these periods.

The unenclosed flat cremation cemetery at Skilmafilly (Johnson & Cameron 2012) is one of a number of known sites across eastern Scotland in the Bronze Age, although few have been recently excavated. Although earlier, Skilmafilly provided evidence of both urned and unurned cremations spread over a wide area, and was comprehensively dated to the period 2040–1500 bc. A variety of grave goods were also found with the cremations at Skilmafilly, which was not the case at Thainstone. A further earlier example is an unenclosed cremation cluster of just five burials excavated beside an enclosed cemetery at Silvercrest, Elgin (Suddaby forthcoming). In this case, the unenclosed cremations appeared to be contemporary with those in the enclosed cemetery, indicating that the two forms were not mutually exclusive. It seems Bronze Age cremations were a complex mixture of funerary rites, which hints at a complex social structure or set of beliefs and societal norms. The wide range of known sites in the Inverurie area seems to reflect this wide-ranging mixture of beliefs and practices.

Following these periods of activity in the Middle and Late Bronze Age at Thainstone, there seems to have been a long hiatus of about a thousand years. This is not necessarily indicative of abandonment. The evidence from Meadowend Farm, Clackmannanshire (Jones et al 2018), where a far wider area was stripped and excavated, shows how a sequence of Bronze Age to Iron Age roundhouses could move around the landscape; it is possible that a similar process was underway at

Thainstone and that other roundhouses may have been present outside the excavation area.

5.2 Middle Iron Age

The Middle Iron Age was characterised by the presence of a large roundhouse (Structure 2) and a souterrain, which appeared to be contemporary. Various possibilities regarding the layout of the structure have been explored, with the most probable being a turf-walled roundhouse with a south-east-facing entrance which was offset from the axis of the internal chamber. Unfortunately, a lack of stratigraphy has resulted in inference of the layout, but it is possible that there may have been two phases to the structure and the features are not all contemporary. Phase 1 may have comprised an outer turf wall with an entrance at the east, which would have been in line with the position of the ring ditches. Internal partitions, or low walls, may have separated the centre of the structure from the area between the internal post ring and the turf wall, with the interior being the hub of domestic living and accounting for the wear patterns in the floor. A second phase may have seen restoration of the structure by re-levelling the floor area, and a repositioning of the entrance at the south-east with the addition of a porch and substantial load-bearing posts. Internally, the C-shaped post-feature may have been a segregated area or furniture, resulting in a reorganisation of the space and forcing anyone entering the structure to immediately turn right.

Post holes near the entrance of Structure 2, which contained packing stones, have provided some insight into the understanding of construction from the builders. Post Hole 108 had a large, angular packing stone in the base and appeared to have fallen in once the post was removed, whereas Post Hole 120 had two packing stones set within the sides and opposing each other. These examples suggest that the timber within Post Hole 108 was deliberately removed, either for reuse elsewhere or for fuel. It may also have been replaced as a repair, with the stone being repurposed as a post-pad to prevent the new timber sinking into the subsoil. The packing in Post Hole 120 may have been to counteract structural forces and twisting of the post under stress (Romankiewicz & Mann 2017: 4). The setting of the packing stones in Post Hole 120

suggests that this was one of the main load-bearing posts for the frame of the roundhouse.

The most coherent dating evidence for the structures in this period comes from the radiocarbon-dated charcoal from the base of the souterrain (cal ad 25–210; SUERC-93914), the fragment of glass from the entrance porch of Structure 2 and the sherd of samian ware from the deposit in the centre of the building. All point towards occupation and abandonment in the 2nd century ad. This is further supported by the presence of Vessel 7, located in the ring ditch of Structure 2, which is diagnostically Iron Age. Two radiocarbon dates from Structure 2 have been disregarded as intrusive or residual. One Middle Bronze Age date from a piece of charcoal from a post hole in the porch seems likely to relate to Bronze Age cremation activity in the immediate vicinity. A piece of charcoal from the ring ditch was dated to the Early Historic period, later than the accepted dating of roundhouse construction in the area, and thus seems likely to be intrusive. The ring ditch was shallow and appeared to be largely naturally infilled; the charcoal was potentially blown into the feature long after occupation and abandonment. The projected footprint of the external post ring of Structure 2 overlies the north-east terminal of the souterrain, suggesting that there was an entrance into the souterrain from the interior of the roundhouse, which further supports contemporaneity.

Structure 2 was similar to the roundhouse excavated at Thainstone Business Park, *c* 300m to the east (Murray & Murray 2006), which may have been part of the same settlement. This roundhouse was dated to between the 1st and 3rd century ad (based on radiocarbon dating samples, Murray & Murray 2006: 11) and is thus broadly contemporary with Structure 2 and the adjacent souterrain. However, it should be noted that roundhouses had a lifespan of approximately 30 to 40 years from construction to abandonment, with their function as a dwelling probably less than this time (Crone et al 2019). As a result, the roundhouse at Thainstone Business Park may have been sequential rather than contemporary. Post-built Iron Age structures were common in the north-east of Scotland, with examples at Douglasmuir (Kendrick 1995), Ironshill (Pollock 1997) and Dubton Farm (Ginnever 2017) all in Angus, as well as Dalladies, Kincardineshire (Watkins 1980a). Further similarities between the

two structures at Dubton and that of Structure 2 at Thainstone includes a pit within the entrance porch. At Dubton the digging of the pits was perceived as a deliberate act at the abandonment of the structure, however this does not appear to have been the case at Thainstone, where it was more likely a hollow caused by heavy footfall and repeated sweeping out, similar to a hollowed channel within the porch of Structure 3 at Deer's Den, near Kintore, Aberdeenshire, which is approximately 2km to the south-east of Thainstone (Alexander 2000: 20, 22). The entrance porch of Structure 2 faced south-east, which was the most common orientation as this allowed the optimum amount of light and warmth to reach into the structure (Pope 2003). Other differences were noted in the formation of the curvilinear ring ditches, which were formed from wear in Structure 2 (and Structure 1) rather than being a design feature, as seen at Douglasmuir and Dubton Farm, which suggests that the function of the structures was potentially different or had changed over time.

Souterrains are a common Iron Age structure and have been found across Scotland, with concentrations in the north-east. Most known sites in the Aberdeenshire and Angus areas have only been located through aerial photography (Dunwell & Ralston 2008: 113), although the number of excavated sites is steadily growing. These souterrains generally comprise stone-lined subterranean chambers capped either with stone slabs or timber, such as those from Hurley Hawkin, Angus (Taylor 1983), Ardestie and Carnlugie, Angus (Wainwright 1963) and Newmill, Perthshire (Watkins 1980b). More recent stone-lined examples have been excavated at Shanzie, Perthshire (Coleman & Hunter 2002), Ardownie, Angus (Anderson & Rees 2006) and Hawkhill, Angus (Rees 2009). These features were not exclusively stone-lined, with a recently excavated example of a timber-lined souterrain recorded at Dubton Farm, Angus (Ginnever 2017).

It is likely that the souterrain at Thainstone was originally stone-lined, based on the surviving areas of stone wall. There were also no timber post holes in the base, a feature seen at the timber-lined Dubton Farm souterrain. At Thainstone the souterrain included a shallow gully running around the base of the walls, below the wall lining. This was not wide enough to provide a foundation for the

wall and was, therefore, more likely to represent a drainage feature. No roofing material was observed within the fill of the souterrain. Many stone-lined souterrains have been found to incorporate large stone-slab roofs, but no evidence of this was found at Thainstone. Here, as with the souterrain at Newmill (Watkins 1980b), it is suggested that the structure had a gabled timber-frame roof which would have been covered in thatch. It is possible that flat timbers were placed across the top of the walls and covered in turf, although this would not have been practical; therefore, a gabled roof is the more likely option.

The insertion of a cross-wall close to the west end of the feature is unusual, and no further examples have been found in the literature. It is possible this acted as a partition, potentially to segregate food types such as meat or dairy. The building of the wall was a secondary phase of construction, possibly at the same time as the steps were cut to improve access at the west end, and both may have been to improve the functionality of the souterrain. One of the steps contained fragments of saddle querns, which would probably have been obsolete by the 1st century ad after the introduction of rotary querns. It is likely that these fragments were conveniently available in the vicinity and proved useful for creating a solid footing in the step, though there may also have been a symbolic aspect to their inclusion.

The purpose of souterrains has never been conclusively agreed, and it has been suggested they were cow byres or used for refuge in times of conflict, or even for ritual purposes. The most accepted theory is that they were used for storage (Watkins 1980b; Armit 1999). Watkins (1980b: 198) identified that the main requirements for bulk storage of food stuffs were space, protection from the elements, ventilation and insulation from extremes of temperature. Souterrains certainly provided a great volume of roofed ventilated space where temperatures would remain relatively even throughout the year. The souterrain at Thainstone would have provided good storage space for the occupants of the roundhouse. Souterrains are rarely found in isolation and are usually associated with settlement activity in the form of roundhouses, as evident at Dubton Farm, Angus (Ginnever 2017), Newmill, Perthshire (Watkins 1980b), Cyderhall, Sutherland (Pollock et al 1992) and at Dalladies, Kincardineshire (Watkins 1980a).

No distinct roof material, in the form of timber, turf lines or charcoal, was noted within the fills of the souterrain. Therefore, it seems likely that the roof had been removed prior to abandonment along with the removal of much of the stone walling and then left to naturally infill, similar to the souterrain at Dubton Farm. The fill did contain evidence of wall collapse, but this likely occurred during the removal of the roof, which would have destabilised interior fittings or partitions.

The cannel coal bangle, glass and sherd of samian ware from Structure 2 and the souterrain imply that luxury items were in use there. These items have not been commonly recorded in the area, therefore

it is possible that their presence here indicates a high-status individual or structure.

The presence of a clearly defined charcoal-rich layer in the centre of Structure 2 may be indicative of destruction by fire, whether deliberate or accidental. Evidence of partial or total destruction of roundhouses from various periods has been seen at Garnhill and Wester Hatton (Dingwall et al 2019), Kintore, Aberdeenshire (Cook & Dunbar 2008) and at Birnie, Moray, which had evidence of occupation in the Roman period (Hunter in prep a). Although not common in the archaeological record, destruction of these highly combustible structures must have occurred in the later prehistoric period.

6. CONCLUSION

A Middle Bronze Age roundhouse and urned cremation cemetery were the earliest form of activity at Thainstone. This was followed by evidence of continued cremation practices into the Late Bronze Age. No further activity was identified within the excavation area until the Middle Iron Age, however, it is possible occupation continued

beyond the excavation area. A large roundhouse and associated souterrain were occupied in the 1st or 2nd century ad, and possibly formed part of a community, with evidence of a nearby, broadly contemporary, roundhouse *c* 300m to the east. The site was likely abandoned in the 2nd century ad when the roundhouse was burnt down and the souterrain was deliberately re-roofed.

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