Dgc00

An Iron Age child burial at Dunbar Golf Course, East Lothian

By Louise Baker

With contributions by David Henderson and Fraser Hunter
Illustrations are by Laura Speed

Client: Bain, Swan Architects on behalf of Dunbar Golf Club

An Iron Age child burial at Dunbar Golf Course, East Lothian

By Louise Baker*
With contributions by David Henderson and Fraser Hunter. Illustrations are by Laura Speed.

*Headland Archaeology Ltd, Albion Business Centre (Unit B4), 78 Albion Road, Edinburgh, EH7 5QZ

ABSTRACT

A cist, curvilinear and linear features were discovered during a watching brief on groundworks associated with the construction of a new tractor shed at Dunbar Golf Course, East Lothian. The cist contained the remains of a child of approximately three years of age which yielded a radiocarbon date of 75-242 cal AD at a two sigma range. Placed with the burial was a copper alloy penanular brooch likely to be a local Roman Iron Age product, unusual due to its small size. The curvilinear features do not form an identifiable shape and postdate the cist. A sherd of Samian ware which was not associated with any features was recovered from a service trench.

INTRODUCTION

An archaeological investigation was carried out prior to the construction of a new tractor shed and sewer at Dunbar Golf Course, East Lothian. The work was commissioned by Bain Swan Architects and was monitored by the City of Edinburgh Archaeology Service. It comprised a watching brief which resulted in the discovery of a cist and an area of curvilinear and linear features. These features were excavated in January 2000.

THE EXCAVATIONS

The site is located in a coastal area to the east of Dunbar (centred on NGR: NT 6880 7844, Figure 1) within the grounds of Dunbar Golf Course. The area has undergone extensive landscaping to form the present ground surface.

The cist, curvilinear and linear features discussed in this report were located in the area of the footprint of the new tractor shed (Figure 2). This area measured 36 m by 18 m and was stripped to a depth of 7.5 m AOD. The topsoil was 0.1 m deep and overlay a homogenous medium compacted mid brown silty sand which varied in thickness from 0.3m at the east of the trench to 1.3 m at the west. This deposit appeared to represent large-scale spoil movement associated with landscaping for the golf course. At the west end of the trench this overlay a more gravely and compacted layer of red brown silty sand (039). This was up to 0.2 m thick and may represent a previous ground surface. Beneath this were deposits of natural shell sand into which the identified features were cut. The excavation of a service trench to the north-west was also monitored. A sherd of Roman Samian ware pottery was recovered from the service trench. It was not associated with any features.

THE CIST *Figure 2, Plate 1*

The cist was constructed of up to six courses of drystone masonry lining an oval construction cut. Both blocks with rounded edges and slabs with rounded or angular edges were utilised. All of the stone was local sandstone and was probably collected in the immediate vicinity. The basal two courses were pressed into the construction cut while the upper courses were slightly corbelled with construction backfill present between the upper masonry and the cut. At the base of the cist a layer of iron pan had formed. Below this lay the natural sand which had been cut into to construct the cist.

The long axis of the cist was aligned roughly north-east/south-west. Internally the cist measured 0.4 m north/south, 0.25 m east/west and had a depth of 0.4 m. It contained a child's skeleton (052) which lay face down with its head at the south end of the cist. The body was flexed and a copper alloy penannular brooch was located in the rib area. The cist was filled with yellow to light brown silty shell sand. This became slightly lighter in colour towards the base of the cist. The cist was covered by at least two layers of sandstone capstones. These were slabs, which varied from 0.1 m to 0.3 m in diameter, and were placed in a random manner.

THE CURVILINEAR AND LINEAR FEATURES

The plan of the extent of the linear and curvilinear features observed is shown in Figure 2 and sample sections are shown in Figure 3. The curvilinear features varied in profile along their length with widths from 0.4 to 0.9 m and depths up to 0.3 m. They generally had fairly steeply sloping sides and slightly rounded bases and were filled with mid red brown silty sand with very few stones and bone fragments. The bone was predominantly animal bone but one disarticulated human femur was also recovered from the fill of feature 041. The human bone exhibited signs of weathering which indicated it was likely to have been disturbed from where it was originally deposited and left exposed for a number of years prior to incorporation into the fill of the curvilinear feature. The similarity of the fills of the curvilinear features meant the relationships between them could not be established although it is probable that feature 043 and feature 041 are contemporary due to the way in which they join. It is unlikely that feature 058 is contemporary with 041 and 043 although its relationship with them is unclear. The illustrated limits of the features could be due to varying levels of truncation rather than representing real limits. No meaningful or recognisable shape could be discerned but is it likely that they form a boundary or enclosure which has more than one phase.

The linear feature at the south of the site (056) ran parallel to part of one of the curvilinear features (041). The linear feature had a width of 1 m which was more regular along its length than the widths of the other features. It extended beyond the limit of the trench to the east and had a terminal to the south. In profile it had a gentle break of slope at the top, moderately steeply sloping sides and a flat base at 0.25 m depth and became shallower towards the terminal at the south end. It was filled with mid brown silty sand which contained small stones and some animal bone.

An isolated subrectangular feature (050) was located at the east of the trench. This was aligned north-west to south-east and measured 0.4 m in width and 1.9 m in length. It had steep sides with a slightly rounded base at 0.05 m depth. It was filled

with mid to dark brown sandy silt which contained charcoal and fragments of burnt animal bone.

RADIOCARBON DATES

Three samples of bone were submitted for radiocarbon dating. These were human bone from the cist and animal bone from the linear and curvilinear features. The human bone provides a date for the burial. The animal bone provides a *terminus post quem* for the linear and curvilinear features.

The animal bone from the linear and curvilinear features was dated in preference to the human bone from these features as it was more likely to provide a date closer to the infilling of the features. The dates obtained provide clarification as to the relationship of some of the features. The following table summarises the results.

TABLE 1

Feature	Lab No.	Material dated	Yrs BP	dC13%	1σ	2σ
Skeleton from cist	AA-40363 (GU-9150)	Human rib	1855±35	-21.0‰	cal AD 89-227	cal AD 75-242
043	AA-40362 (GU-9151)	Animal bone	1635±35	-21.4‰	cal AD 394-431	cal AD 265-534
056	AA-40361 (GU-9152)	Animal bone	1500±35	-21.7‰	cal AD 538-617	cal AD 438-642

The dates indicate that the linear and curvilinear features post date the cist burial. They also show that the more regular linear feature (056) is likely to post-date the less regular curvilinear feature (041) adjacent and parallel to it. Linear feature 056 appears to respect curvilinear feature 041 and this suggests they may represent the re-establishment of a boundary or enclosure.

THE HUMAN BONE

by D Henderson

Human remains were recovered from two contexts, the cist and the fill of a curvilinear feature (041). In both contexts the preservation of the bone was fair, although some surface erosion had occurred.

THE CIST

The cist contained the skeleton of an infant of between 30 and 42 months old, probably nearer the lower end of the range. The skeletal elements recovered were the cranium and mandible, the cervical vertebrae and the thoracic vertebrae from 1 to 9, elements of most of the ribs, fragments of the left ilium and ischium, the diaphyses of the left and right humeri, femora, tibiae and fibulae and the left ulna and radius. Most of the bones present had been etched by plant root action and the left side of the facial skeleton was eroded, probably by the action of acidic groundwater.

The age of the infant was determined by reference to the stage of tooth development. The dentition had reached Schour and Massler's Stage 7, equating to an age of three years old (plus or minus six months) (Hillson 1994, illustration 3.3). Skeletal development was also analysed; in the skull the lateral fissures of the occipital were nearly obliterated, as was the metopic suture. The bregmatic fontanelle was still slightly open. In the vertebral column, all the vertebral arches were fused in the midline, but the arches were not fused to the vertebral body above the 8th thoracic vertebra. These findings are consistent with an age of three years old, or slightly younger. No longbone was sufficiently intact to allow the measurement of diaphyseal length, but an estimate of the length of the nearly intact left humerus diaphysis (approximately110 mm) suggests that the age at death was nearer two years old than three (Molleson and Cox 1993 147 -151). In general, dental development is held to be more reliable as an age indicator than skeletal development, as the latter can be delayed by the effects of ill-health.

Establishing the gender of sub-adult skeletons is notoriously unreliable, however, the form of the mandible may indicate the infant was male.

Non-metrical data: The skull presented several normal variations, including ossicles in the lambdoid suture, an absent parietal foramen on the right side, a patent posterior condylar canal on the right side only and a supraorbital foramen on the right (left no data). These variations are generally inherited, but are also susceptible to environmental effects; lambdoid ossicles have been linked to nutritional stress (Mays 1998, 114).

Nutritional Stress Indicators: Besides the possible significance of the non-metrical variations described above, the skeleton also showed two other signs of poor nutrition. Pitting and porosity was noted in the roof of the right orbit (left, no data). Although it is possible that this was an artefact of the erosive soil environment, it appears to be *cribra orbitalia* a condition caused by certain iron-deficiency anaemias. The developing permament teeth, especially the upper canines and central incisors, displayed a hypoplastic line in the enamel. These lines are formed as the development of the tooth slows or stops briefly in response to some bodily stress. The positions of the lines indicate that this stress occurred when the individual was around 18 months old and may represent the nutritional change associated with weaning. All developing teeth showed a constriction on the surface at the developing edge, representing the physiological stress of the child's final illness.

CURVILINEAR FEATURE 041

The fill of this curvilinear feature produced a single human bone, the proximal end and shaft of a right femur. Loss of surface on the head prevented accurate measurement of the vertical head diameter,but this was estimated at between 40 mm and 42 mm, suggesting that it derived from a female. The *linea aspera* was weakly defined and the whole bone was quite gracile, supporting this theory. The meric index was calculated at 70.30, indicating platymeria or front-to-back flattening of the femur shaft. This form of femur is much more common in ancient populations than it is today, and is thought to represent a response to increased levels of biomechanical stress deriving from a more robust lifestyle and poorer nutrition.

Taphonomic factors: In contrast to the infant skeleton from the cist, the femur shows signs of sub-aerial weathering. Longitudinal cracks with rounded edges and loss of some cortex through exfoliation agree with Behrensmeyer's weathering stage 2 (Lyman 1994, 354ff) and may indicate a few years of exposure to the elements in a defleshed state. It is therefore likely that the bone was disturbed from its initial burial place and subsequently reburied.

THE PENANNULAR BROOCH *(Figure 3)*

by Fraser Hunter

The penannular brooch (SF1) was recovered from the rib area of the burial within the cist. It is a small penannular brooch of Fowler (1960) type A3, lacking the pin. The circular-sectioned hoop (2 mm diameter) is broken into two joining pieces. The knob terminals are quite angular; the characteristic additional mouldings of the A3 are rather weakly defined, with a shallow waist and a slight thickening of the hoop. Surface X-ray fluorescence analysis (by Dr Katherine Eremin) indicated the alloy was a bronze with minor antimony. Overall dimensions 22.5 x 21 mm; knob diameter 3.5 – 4.5 mm.

Fowler's (1960) dating of this type to the 1st-3rd century AD has never been seriously questioned, but was based largely on artefact associations. The availability of a direct radiocarbon-dated association is of considerable value: the 2-sigma calibration of AD 75-242 is entirely consistent with the conventional dating. Fowler refers to the type as Romano-British but culturally it should probably not be seen as a Roman import given its development from locally-available pre-Roman models, and this example is likely to be a local Roman Iron Age product. The alloy is a typical Iron Age bronze with minor antimony: the few comparable brooches analysed by Dungworth (1995, 113) were leaded bronze (with some zinc) or brass. Indeed this perhaps suggests a relatively early date for this example within the radiocarbon span, as it seems Iron Age casting alloys were rapidly contaminated by Roman metal in southern Scotland (eg Dungworth 1998, 351).

There are some questions over its role in the grave. It lay in the lower rib area, which is an unusual position for a brooch, although the excavator's view is that it could have moved as the skeleton decayed. More worrying is the lack of a pin, and it must be considered whether the brooch had been reused after loss of the pin, perhaps as a finger ring or clothes fitting. However, as the hoop had clearly been damaged after deposition, it is possible that the loss of the pin too could be post-depositional. The use of replacement pins is also attested, and an organic replacement may not have survived. However the possibility of secondary reuse should be borne in mind.

Perhaps the most interesting feature of the brooch is its small size: type A penannulars are typically 30-35 mm in diameter. While brooch size has a functional aspect, especially the weight of cloth being held, it is tempting to see this as a specifically child-sized brooch. Similarly small examples from Scotland can be quoted from Langbank crannog, Renfrewshire (type A3; NMS HC 106; Bruce 1908, 46, figs 2 & 10), Eldbottle, E Lothian (type C; NMS FC 243; *PSAS* 68 (1933-4), 12), Orkney (type A1; NMS FC 156; Anon 1892, 207), and an unprovenanced one (type D; NMS FC 245). This provision of specific children's objects is unusual – apart from these

brooches, the only Scottish example known to the writer is a small torc probably from Lanarkshire (MacGregor 1976, no 223).

Putting the burial into its wider Iron Age context is bedevilled by poor data. Whimster's (1981) synthesis, while useful, relied largely on artefact dating and was not thorough in its treatment of antiquarian sources (Welfare 1983). An ongoing review of this material by the writer has identified some 100 certain or likely Iron Age burials; 28 have grave goods, but this overestimates their frequency as furnished graves were preferentially recognised by antiquarians. A more realistic picture comes from East Lothian, where large-scale excavation along with radiocarbon dating of unaccompanied burials over the last 25 years have revolutionised our understanding of the local burial tradition. Here only five of the 39 or so Iron Age burials (13%) have grave goods.

Ornaments are the most common grave good in the Scottish Iron Age, mainly brooches; 17 of the 28 furnished burials have ornaments, of which nine are brooches (Lochend and Luffness, E Lothian; Moredun, Midlothian; Craigie, Angus; Waulkmill, Aberdeenshire [Whimster 1981]; a penannular brooch from Galson, Lewis [Neighbour et al forthcoming]; this example; and native burials with Roman brooches from Merlsford and Hallow Hill, Fife [Hunter 1996, 120-22; Proudfoot 1996, 418]). Penannular brooches are the most common form (70%), so the Dunbar Golf Course burial fits the wider pattern. What is more unusual is its burial with a child: on available evidence the only other children buried with grave goods are Hallow Hill, Fife, graves 51B and 54 (Proudfoot 1996, 413-14).

DISCUSSION

Iron Age cists of similar drystone coursed masonry construction to that at Dunbar Golf Course are known in the Dunbar area and throughout Scotland. These are summarised by Crone (1992) and Halliday & Ritchie (1982). In the past there has been difficulty in assigning dates to such cists where there were no associated grave goods (Whimster 1981). The presence of the penannular brooch in the Dunbar Golf Course cist allows a date to be assigned using Fowler's typology (Hunter, this report) and the radiocarbon results confirm this date. The radiocarbon date of 75 - 245 cal AD at 2-sigma range is in keeping with the typological date assigned to the brooch and is not unusual for such a cist. Hunter suggests the brooch could be from the earlier part of this date range as it is made of a typical Iron Age bronze alloy and such alloys became contaminated by the influx of Roman metal in southern Scotland (Hunter, this report).

Although the Dunbar Golf Course cist adds to the number of coursed masonry cists from this period the entire number of known burials remains low. The proportion of child burials within the known burials, especially those with grave goods, is also low. The cemetery at Hallow Hill in Fife provides the only other known examples (Proudfoot, 1996). No other burials were identified in the excavation area although burials could be located out with the area effected by the development. The presence of other burials in the surrounding area is attested by the redeposited human femur recovered from the later linear and curvilinear features. A date for this bone was not obtained. Sherds of a Bronze Age beaker of Clarke's N1/D type recovered from the

excavation of the cemetery at Kirkhill Braes (Figure 1) possibly indicates Bronze Age burials in the area (Calder and Feachem 1951). An Early Christian date was assigned to this cemetery due to the form of one of the more intact burials. It is unclear whether the fragments of beaker were associated directly with a burial and the possibility of the presence of burials dating to other periods at Kirkhill Braes should be considered. Other possible Bronze Age activity in the area is represented by an enclosure to the south of the 2000 excavation site (Figure 1). This recently scheduled site is visible as a cropmark and is believed to be the remains of a defended settlement. The site has been assigned function and date due to the form noted from aerial photographs. In the absence of other dating evidence the security of assigning a Bronze Age date could be questioned.

The penannular brooch from the cist burial excavated in 2000 is likely to be a local Roman Iron Age product (Hunter, this report). Although the brooch is likely to be from the earlier part of the radiocarbon date range Fowler suggests brooches of this type are commonly Romano-British products. While this brooch is probably a local Roman Iron Age product a Roman influence is likely. The continuing Roman influence and/or interaction with the local Iron Age people is indicated by finds such as this brooch and the presence of Samian ware pottery recovered from these excavations and excavations at Castle Park, Dunbar (Perry 2000, 28). These finds indicate Roman influence despite the lack of Roman occupation in the immediate area. The influence is manifest as direct circulation of Roman goods as well as influence on the production of local goods.

While the linear and curvilinear features form no recognisable shape they do indicate the use of ditches to delineate certain areas. They could function as boundaries and/ or form enclosures and more than one phase of use appears to be represented. It is uncertain whether they are associated with later burial activity in the area or indicate a change in land use. At least one of the curvilinear features appears not to respect the cist which may favour the idea of a change in land use. The extent of the area cleared during the excavation does not allow for any further interpretation of these features.

CONCLUSIONS

The cist discovered through the work carried out in January 2000 represents the use of the Dunbar Golf Course area for burial in the Iron Age. The cist is in keeping with other known examples which date from this time although it is unusual in that the burial it contained is a child and was accompanied by a penannular brooch. The linear and curvilinear boundaries or enclosures are of uncertain function although they do indicate later use of the area.

REFERENCES

Anon 1892 *Catalogue of the National Museum of Antiquities of Scotland*. Edinburgh: Society of Antiquaries of Scotland.

Bruce, J 1908 'Report and investigations upon the Langbank pile dwelling', *Trans Glasgow Archaeol Soc* 5 (1902-6), 43-53.

Calder, CST and Feachem, RW 1951 'Cemetery, Dunbar, East Lothian', *Proc Soc Antiq Scot,* 85 (1950-1), 179.

Crone, BA 1992 'An Iron Age cist at North Belton Farm, Dunbar', *Proc Soc Antiq Scot,* 122 (1992) 161-170.

Dungworth, D B 1995 *Iron Age and Roman copper alloys from northern Britain*. Unpublished PhD dissertation, University of Durham.

Dungworth, D B 1998 'EDXRF analysis of copper-alloy artefacts' in L Main 'Excavation of a timber round-house and broch at the Fairy Knowe, Buchlyvie, Stirlingshire, 1975-8', *Proc Soc Antiq Scot* 128, 293-417

Fowler, E 1960 'The origins and development of the penannular brooch in Europe', *Proc Prehist Soc* 26, 149-177.

Halliday, S P & Ritchie, J N G 1982 'A cist from Kelloe Mains, Berwickshire', *Proc Soc Antiq Scot*, 112 (1982) 354-356.

Hillson S 1994 *Teeth.* Cambridge Manuals in Archaeology C.U.P.

Hunter, F 1996 'Recent Roman Iron Age metalwork finds from Fife and Tayside', *Tayside & Fife Archaeol J* 2, 113-25.

Longworth, IH 1966 'A massive cist with multiple burials of Iron Age date at Lochend, Dunbar', Proc Soc Antiq Scot, 98 (1964-6), 173-98.

Lyman RL 1994 *Vertebrate Taphonomy* Cambridge Manuals in Archaeology C.U.P.

MacGregor, M 1976 *Early Celtic Art in North Britain*. Leicester: Leicester University Press.

Mays S 1998 *The Archaeology of Human Bone* Routledge, London.

Molleson T, Cox M et al 1993 *Spitalfields* Volume 2, CBA Research Report 86. London.

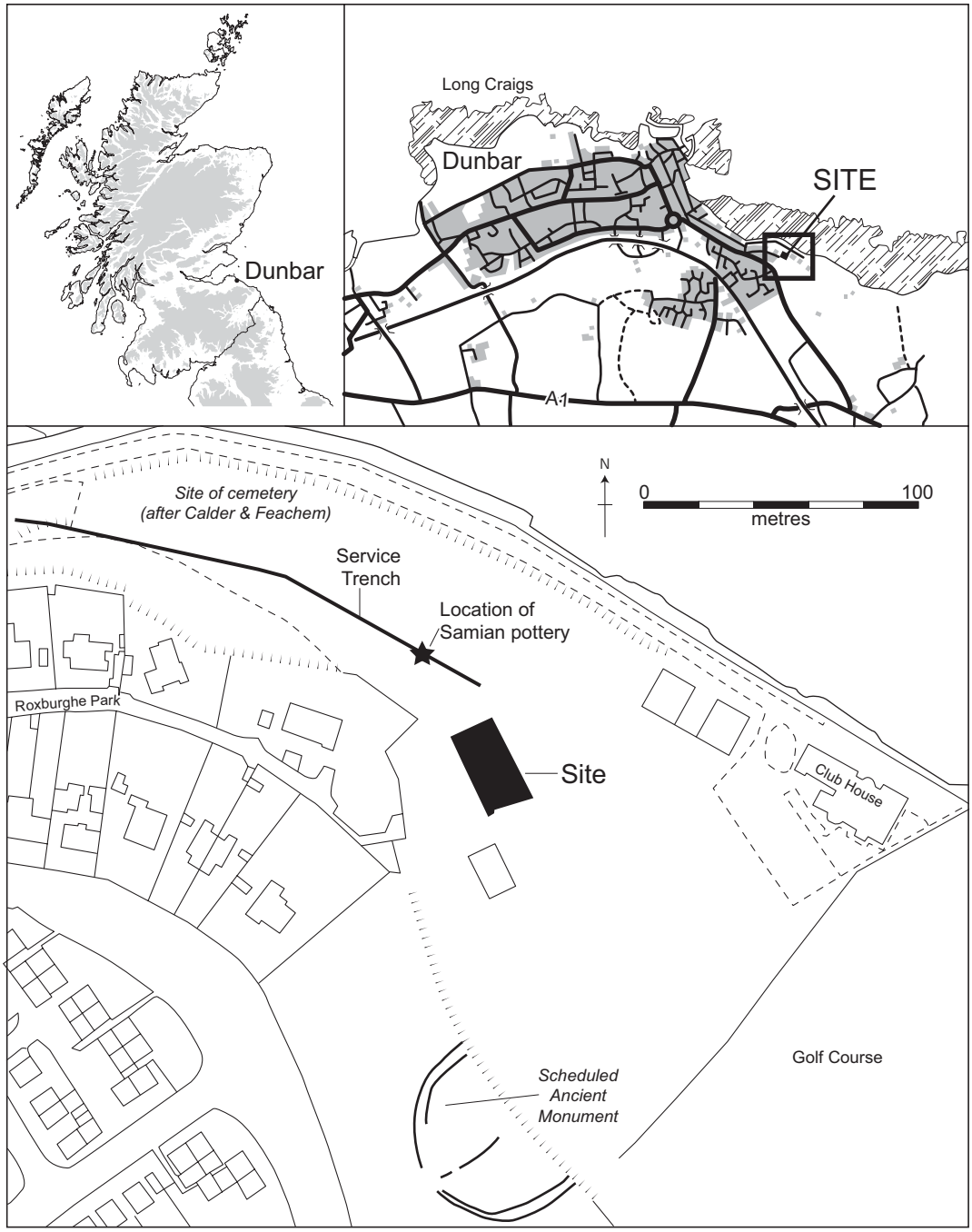
Neighbour, T, Knott, C, Bruce, M F and Kerr, N W forthcoming 'Excavation of two burials at Galson, Isle of Lewis, 1993 and 1996', *Proc Soc Antiq Scot.*

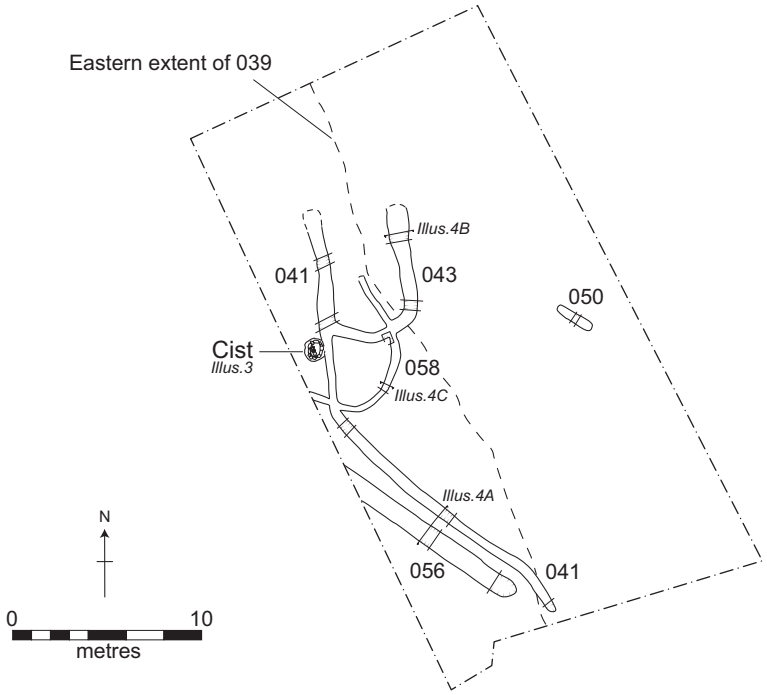
Perry, DR 2000 *Castle Park, Dunbar: Two thousand years on a fortified headland*. Society of Antiquaries Monograph Series No 16.

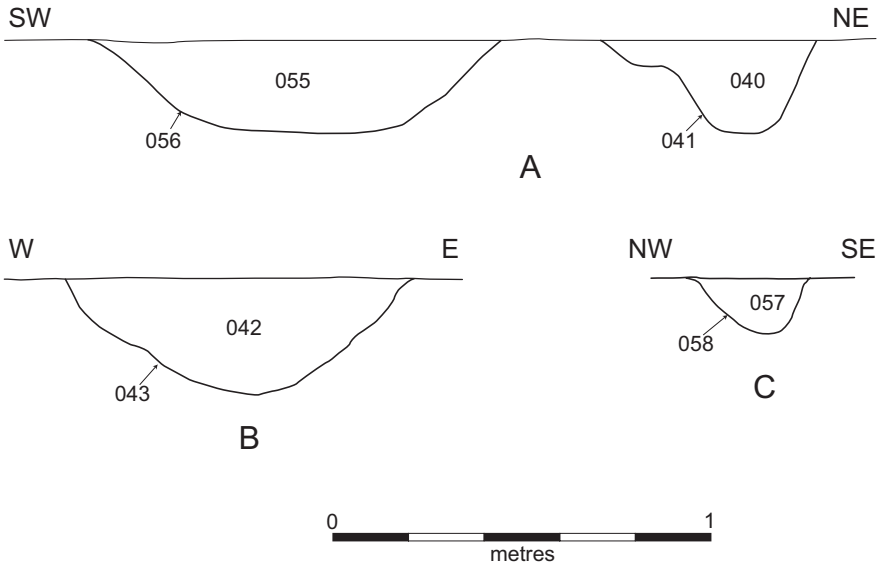
Proudfoot, E 1996 ‘Excavations at the long cist cemetery on the Hallow Hill, St Andrews, Fife, 1975-7’, *Proc Soc Antiq Scot* 126, 387-454.

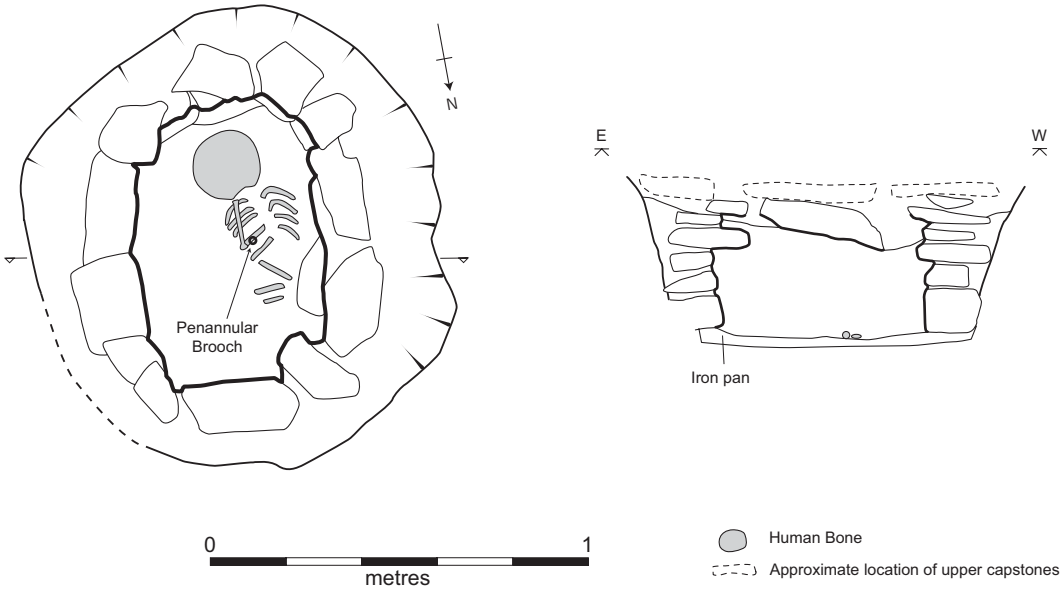
Welfare, H 1983 Review of Whimster 1981, *Scottish Archaeol Rev* 2/1, 75-79.

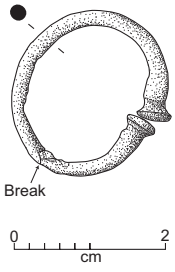
Whimster, R 1981 *Burial practices in Iron Age Britain*. Oxford: British Archaeological Reports (British Series 90).


Dunbar
Long Craigs
Dunbar
SITE
A1
N
0
100
metres
Site of cemetery
(after Calder & Feachem)
Service
Trench
Location of
Samian pottery
Roxburghe Park
Site
Club House
Golf Course
Scheduled
Ancient
Monument


Eastern extent of 039
Illus.4B
041
043
050
Cist
Illus.3
058
Illus.4C
Illus.4A
N
056
041
0
10
metres


SW
NE
055
040
056
041
A
W
E
042
043
B
NW
SE
057
058
C
0
1
metres


N
Penannular
Brooch
E
W
Iron pan
0
1
metres
Human Bone
Approximate location of upper capstones



LRS 23.10.01

Plate 1 - Dunbar Golf Course : Cist.