A Bronze Age burial ground at Longniddry, East Lothian

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ABSTRACT

Rescue excavation of human remains was carried out at Evergreen, Longniddry, prompted by a chance discovery by workmen. Three crouched inhumations were found, one of which was in a cist. The disturbed and disarticulated remains of two further individuals were also identified. The burials were associated with a concentration of stones and pebbles which may have been the remains of a cairn. Radiocarbon dating yielded dates of 1690 to 1310 cal BC at 2-sigma range. Other burials identified during previous excavations indicate these burials are part of a more extensive Bronze Age burial ground.

INTRODUCTION & SITE LOCATION

During landscaping in January 2000 in the garden of Evergreen, Longniddry human remains were encountered. The local police were informed and Historic Scotland and the City of Edinburgh Council Archaeology Service were contacted. Headland Archaeology was then commissioned by Historic Scotland to excavate fully the human remains and to identify and excavate any further archaeological deposits or structures encountered during the remainder of the landscaping work. All fieldwork and post-excavation works were funded by Historic Scotland.

The excavations at Evergreen revealed further human remains which have been radiocarbon-dated to the Bronze Age. A number of other Bronze Age burial sites are known in the Longniddry area. Research into these uncovered archive material which greatly enhances the information available in the National Monuments Record of Scotland and adds to

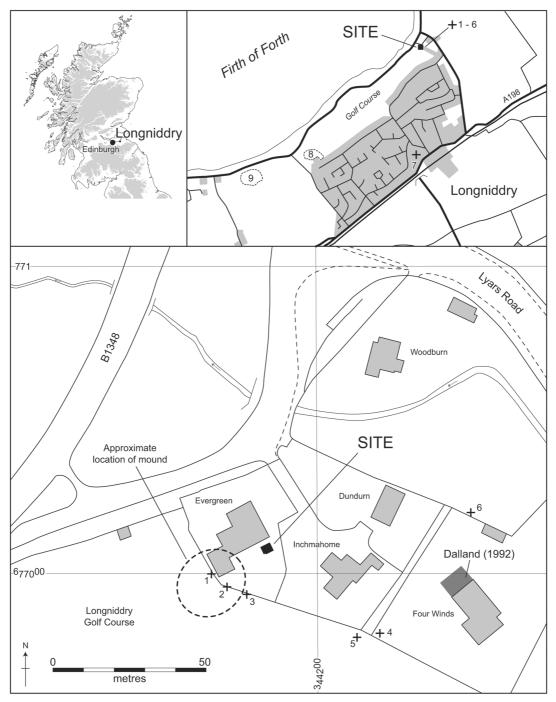
our understanding of the burial traditions in this area.

The site is located adjacent to the coast to the north of Longniddry (centred on NGR: NT 4418 7709; illus 1). The surrounding landscape comprises sand dunes and windblown sand which form an undulating ground surface. The landscape of the coastal area at Longniddry appears to have been significantly influenced by man and the area of the golf course adjacent to the shoreline has also been landscaped. It is clear from antiquarian accounts that the character of the area has changed greatly and the New Statistical Account (Smith 1845) and the Topographical Description (Roy 1792) of the parish of Aberlady both state that in the coastal area from Aberlady to Longniddry human bones were often dug up.

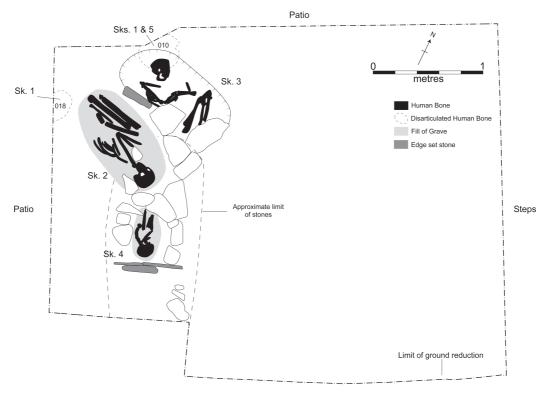
THE EXCAVATION

The site measured approximately 4m east/west by 3m north/south (illus 2). It was an area which had

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ILLUS 1 Location map of the excavation and the other burial sites mentioned in the text (Based on the Ordnance Survey map @ Crown copyright)



ILLUS 2 Plan of the trench and graves

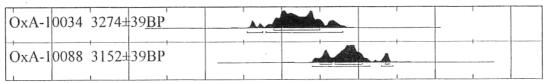
previously formed part of a lawn, bordered by a rockery on the west and north which sloped down towards a patio. The ground level around Evergreen is substantially lower than the level of the golf course to the west and south. It is likely that construction of the house and garden at Evergreen had dramatically altered the ground surface in this area in the past. The ground was reduced by approximately 1.2m to allow extension of the patio and it was apparent that the ground level had previously been altered, as the topsoil was up to 0.5m thick with a layer of windblown sand at 0.25m below the surface.

The human remains were located at the west side of the excavated area. Initially one stone-lined cist and some disturbed human remains were identified. These were excavated and the remainder of the ground reduction work was carried out by archaeologists. During this work a further concentration of disturbed bone and two in situ burials were identified. In the area containing the burials there was a concentration of large stones and rounded cobbles, which appeared to be random but might have formed a cairn structure.

Two deposits of disturbed bone (010 & 018) in a matrix of topsoil were found adjacent to the patio and had probably been disturbed and re-deposited when it was built. Remains from Skeleton 1 appear to be in both deposits with a further individual in context 010 (Sk5, see Henderson below).

The most northerly of the in situ burials (006, Sk3) lay directly below a concentration of disturbed bone (010, Sk1 & Sk5) and was contained within a cist roughly constructed of small slabs. Some large un-worked sandstone slabs partly overlying the burial at the south-east end may have formed capstones for the cist although this is uncertain as these had also been disturbed. The cist was subrectangular on plan, aligned roughly north-east/ south-west and measured 1m by 0.5m externally with a depth of 0.2m. The base was roughly paved with un-worked slabs. The sides were formed of small slabs set on end. Some of the side stones had been removed and voids where they had been

Atmospheric data from Stuiveret al. (1998); OxCal v3.5 Bronk Ramsey (2000); cub r:4 sd;12 prob usp[chron]



Calibrated date

ILLUS 3 Calibrated radiocarbon date ranges

TABLE 1 Radiocarbon dates of skeletons

| Lab number | Skeleton | Context | $\delta^{13}C$ | Years BP (uncal) | 1σ calibrated range | 2σ calibrated range |
|------------|----------|---------|----------------|------------------|--|---|
| OxA-10034 | 4 | 017 | -20.2 | 3724 ± 39 | 1620–1500 вс | 1690–1650 BC (4.7%) 1640–1440 BC (90.7%) |
| OxA-10088 | 2 | 009 | -20.4 | 3152 ± 39 | 1500–1470 BC (9.8%) 1460–1390 BC (55.0%) 1330–1320 BC (3.5%) | 1520–1370 BC (87.2%) 1340–1310 BC (8.2%) |

located were filled with fresh topsoil. The cist contained the crouched skeleton of a female of approximately 60 years of age. The skeleton lay on its left side with the head to the north-west.

The other two in situ crouched skeletons (Sk2 & 4) were overlain and surrounded by stones and cobbles but were not contained within cists. The skeletons were laid on sand and darker sand indicating the extent of the grave was present directly around the skeletons. Skeleton 2 was a male aged 35-45 years old. The skeleton was tightly crouched on its right side with its head to the south-east. Located adjacent to the skull and hands of the skeleton was a sub-rounded stone which measured 0.15m in length, with a small depression on its upward facing surface. This appeared to have been deliberately positioned as no other stones were present in the darker sand which formed the grave fill. Skeleton 4 was an elderly female lying on her right side with her head to the south. Her age could not be accurately determined, owing to a lack of dentition. There were three large flat slabs set on end and aligned east/west to the south of Skeleton 4. They may have served to retain cairn stones to the south allowing the burial to be deposited.

RADIOCARBON DATING

Samples from the three in situ burials were submitted to the Oxford Radiocarbon Accelerator, Research Laboratory for Archaeology for dating.

Only two of the samples contained sufficient collagen to yield results. The dates were calibrated using Oxcal v3.5, using atmospheric data from INTCAL98. These are presented in Table 1 with the calibrated age ranges also shown in illus 3. The results suggest that Skeleton 4 was buried earlier than Skeleton 2.

THE HUMAN BONE

David Henderson

The human remains recovered were derived from five contexts. Three contexts (006/Sk3, 009/Sk2, 017/Sk4) were in situ inhumations, the two remaining contexts (010/Sk1 & Sk5 and 018/Sk1) were of disturbed and unarticulated bone. On analysis, it was determined that context 018 contained the bones of a single individual (Sk1) and that some vertebrae and cranial elements of this individual fitted with other elements present in context 010. When sorted, the skeletal elements present in context 010 fell into two categories; larger, more robust bones with similar colouration (including the bones which matched context 018) and more gracile bones with similar coloration. As there was no duplication of any skeletal element from within these categories, the bones have been analysed as two single individuals; Skeleton 1, from contexts 010 and 018, and Skeleton 5 from context 010.

Table 2 Summary of demographic information

| Sk Number | Sex | Age | Estimated Height (bone used) |
|-----------|--------|--------|---------------------------------------|
| 1 | Male | 20-25 | Approximately 1.75m (larger than Sk2) |
| 2 | Male | 35-45 | 1.70m (Femur and Tibia) |
| 3 | Female | ? > 55 | 1.62m (Tibia) |
| 4 | Female | > 55 | _ ` ` ` |
| 5 | Female | > 55 | 1.56m (Ulna) |

PRESERVATION, TAPHONOMY & METHODOLOGY

Bone preservation on the site was generally poor. All the skeletons had undergone varying degrees of post-mortem damage, erosion from both acidic groundwater and etching by plant roots. The erosion was particularly pronounced at the articular ends of longbones, in the pelvis and among the small bones of the hands and feet. However, all the skeletons, except for the disturbed individual Skeleton 5, were substantially complete.

Age at death of the individuals was determined by examination of dental development and abrasion, and where appropriate by examination of the surface of the pubic symphyses and the auricular surface of the ilium and sacrum. Gender was assessed by examining the form of the skull and the pelvis, with more weight given to pelvic morphology. Stature was reconstructed using the formulae of Trotter and Gleser (in Bass 1987). Skeletal measurements were taken as per Cross and Bruce (1989) and indices were calculated using the formulae in Bass (1987). Non-metric traits were recorded from those in Brothwell (1981, 93-100). All bones were examined for pathological lesions.

RESULTS

Information regarding demography, age at death, sex distribution and stature is summarized in Table 2.

Lower limb shape

Flattening of the femur and tibia (platymeria and platycnemia) are both suggested (Brothwell 1981, 89) to be a biomechanical response to the stress produced on the leg by a more robust lifestyle. In all measurable cases (Sks 1, 2, 3 and 5) the femurs were platymeric, with indices ranging from 63.93 to 78.50. In the lower leg, the two males were platycnemic (Sk1 = 56.78, Sk2 = 57.78).

Metrical data, non-metric variation and pathology

Too few cranial or post-cranial measurements were available to make any analysis worthwhile. A full list of measurements is available in the archive. Small variations in the form of the skeleton, traits which are either present or absent, come under the designation non-metric variation. There were a number of traits which appeared on every skeleton where the appropriate skeletal element was recordable and are shown in Table 3. This constellation of traits suggests that the individuals may have derived from a small population base, and may indeed be derived from a single family line.

Arthritic lesions Very few lesions were observed on the skeletal material, no limb joints had the polished or pitted appearance of osteoarthritis, or marginal osteophytosis. In the spinal vertebrae, Skeleton 2 showed some arthritic changes at the articular facets for the 11th and 12th ribs. This skeleton also displayed Schmorl's nodes, from the 7th thoracic to the 2nd lumbar vertebrae.

Deficiency Diseases Cribra orbitalia was observed in Skeletons 1,2 and 4 (not Sk3, Sk5 no data). This

TABLE 3 Non-metric variation

| Skeleton number | 1 | 2 | 3 | 4 | 5 |
|---|---|---------|---------|---------|---------|
| Septal apertures of the humerus | Y | Y | Y | no data | no data |
| Patent posterior condylar canals | Y | no data | Y | Y | no data |
| Frontal notches | Y | Y | Y | no data | no data |
| Lumbarisation of first sacral vertebrae | Y | Y | no data | no data | no data |
| Bifid hypoglossal canals | Y | N | Y | no data | no data |

condition is a consequence of certain anaemias, caused for example by a heavy load of gut parasites.

Childhood Morbidity Some evidence of childhood ill-health may be preserved in the form of furrows in the tooth enamel (Hypoplastic lines) whose position reflects the state of development of the permanent tooth when an episode of illness or nutritional stress occurred. Skeleton 1 showed a line corresponding to illness at 6 years of age and Skeleton 3 showed a line corresponding to 18 months of age, often interpreted as being a result of weaning.

Trauma Skeleton 3 displayed an un-united fractured left ulna, at a point about a quarter of the way down the shaft. The opposed surfaces of the ununited parts were porous in texture, so no 'pseudojoint' had formed. The radius is not fractured, suggesting that the injury was a 'parry fracture' where the back of the forearm receives a blow when raised to protect the head (illus 4). The fact that the ulna had not knitted together correctly shows that the forearm was not immobilized during healing, although the intact radius will have acted as a splint to some extent. The position of the fracture suggests that the flexor digitorum profundis muscle may well have been compromised, leading to a much weakened grip in the hand. When the fracture is reassembled in the 'resting' position, the distal end of the ulna is displaced anteriorly, probably because the forearm muscles would pull the free end of the bone in this direction. It appears that some function would have remained in the hand and forearm, but weakened and possibly causing pain.

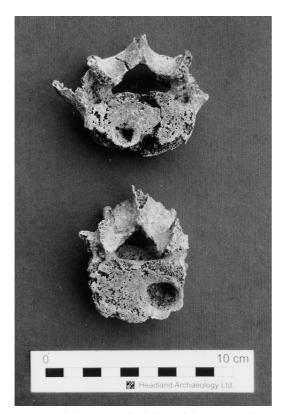
Infectious Disease Two puzzling lesions were observed in Skeleton 3. Both were erosive lesions of the upper surface of adjacent lumbar vertebrae (illus 5). On the 5th lumbar, the lesion is 9mm by 6mm and 9mm deep; on the 4th the lesion is circular, 16.5mm in diameter and 11mm deep. Both lesions lie near the centre of the upper surface of the vertebral body, show no reactive bone formation, and appear to be healed. Large, non-proliferative lesions of lumbar vertebrae are usually a sign of tuberculosis (TB), but the normal course of spinal involvement in TB is for the infection to track



ILLUS 4 Skeleton 3: the un-united fractured left ulna (left) with its radius

forward and eventually to destroy the entire vertebral body. An alternative diagnosis of these spinal lesions is infection with brucellosis, which is also apt to infect the spine and often resolves spontaneously without destruction of the whole vertebral body (Aufderheide & Rodriguez-Martin 1998, 192–3).

Dentition The complete dentitions of Skeletons 1, 2 and 3 were recovered, as well as parts of the mandibles of Skeleton 4 and Skeleton 5. All four third molars of Skeletons 1 and 3 were congenitally missing, as was the upper right of Skeleton 2. The lower right central incisor of Skeleton 3 had been lost ante-mortem, as had all the teeth of Skeleton 4 on the left side of the mandible, and at least one molar on the right lower jaw of Skeleton 5. Only Skeleton 3 had caries cavities, in the upper left and



Skeleton 3: erosive lesions of the upper surface of adjacent lumbar vertebrae: 4th (lower) and 5th (upper)

the lower right first molars. In general, the teeth had low to moderate deposits of calculus and periodontal bone retreat was moderate.

CONCLUSIONS

Although a small sample, and further depleted by poor preservation, the Longniddry skeletons provide some information about the population. In general, dental health was good and the population may have been less prone to osteoarthritis than many archaeological populations. The three old women showed little spinal degeneration, which is found almost universally in other populations in old age. These findings may be due to lifestyle or protection conferred by the genetic heritage of the group. The skeletons displayed many similar traits; some, such as squatting facets on the tibia and the shape of the femur were probably determined by a common lifestyle, while other traits may reflect a familial relationship. The sample is too small to lend itself to statistical analysis.

The lesions in the spine of Sk3 may be either atypical TB or brucellosis infection. Either disease may indicate close contact with cattle. The fractured ulna (and possibly the lost front tooth) of the same skeleton are perhaps an indication of interpersonal violence, although it is impossible to rule out an accident involving a falling object.

ARCHAEOLOGICAL SETTING

The area directly around the site has been developed for house construction and Longniddry Golf Course over the last century and various excavations have been carried out in the vicinity of the site. The majority of these excavations occurred prior to the advent of the use of radiocarbon dating and while some produced remains which are broadly contemporary with these from the site at Evergreen it is impossible to create a precise chronology with the available information. In order to place the site in a local context all known Bronze Age burial sites in the Longniddry area have been included in a distribution map (illus 1) and gazetteer (Table 4). A distribution map showing greater detail of the land surrounding Evergreen is also included as there is a concentration of sites in this area.

A number of excavations were carried out when Longniddry Golf course and the house at Inchmahome were under construction. In 1925 a trench was dug for a sunken fence between the north-east side of the golf course and Inchmahome. Part of the trench was excavated through a mound and in this area a number of burials were encountered by the workmen (illus 1). From this time until 1927, construction of the golf course resulted in the discovery of further burials. Callander and Ritchie (of the Royal Scottish Museum) visited the work and notes taken by Callander provide some information about the burials. A paper based on these notes was written by RBK Stevenson and is held by the National Museums of Scotland. The various burials mentioned in this draft report are summarized

| TAI | FABLE 4 | | | |
|------|--------------------|-------------------------------------|--|--|
| Site | Source of location | Date of discovery/ excavation | Details | References |
| - | Stevenson | 1925 | Short cist found by Callander during excavations for a sunken fence between the golf course and Inchmahome. Constructed of yellow sandstone and schist slabs; internally 0.86m long, 0.45m wide and 0.38m deep; aligned NE/SW; contained remains of single inhumation with head at E end of cist and 'an urn of the beaker type'. Located at highest part of mound. Beaker indicates Bronze Age date. | Callander's notebook; Stevenson (unpublished); PSAS 80 (1945–6), 151; NMRS no NT47NW 7 |
| 7 | Stevenson | 1925 | Discovery & context, as (1). Constructed of yellow sandstone slabs; about 0.45m square; contained burnt and unburnt human bone and rim and wall sherds of cinerary urn (NMS X.EQ 501). Trn indicates Branze Age date | Callander's notebook; Stevenson (unpublished); PSAS 80 (1945–6), 151 · NMRS no NT47NW 7 |
| 8 | Stevenson | 1925 | Discovery & context as (1). Cremation comprising 'some small pieces of white bone' found under large stone, probably around SE edge of natural mound. Possibly of Bronze Age date. | Callander's notebook; Stevenson (unpublished); PSAS 80 (1945–6), 151; NMRS no NT47NW 7 |
| 4 | NMRS | 1952–3 | Cist found at NGR: NT 4424 7698; thought to have been excavated by R B K Stevenson. Contained skeleton of woman about 28 years old. Photographs belonging to Mrs Douglas (of Inchmahome) showed this cist to be very similar to long cists excavated by Dalland at Four Winds in 1989: probably not of Bronze Age date. | NMRS no; NT47NW 7; Dalland pers comm |
| S | NMRS | 1944? | Cist was found on golf course at NGR: NT 4420 7697; excavated by RBK Stevenson; possibly of Bronze Age date. | NMRS no NT47NW 7 |
| 9 | NMRS | 1944 | Cist found while digging foundations for a hut in garden of Woodburn; lay about 0.6m below eround level: left undisturbed: nossibly of Bronze Age date. | NMRS no NT47NW 7 |
| ٢ | PSAS report 1989 | 1989 | Cist discovered during installation of swimming pool inside outbuilding at Grainfoot. Cist comprised sandstone slabs forming rectangular box orientated ENE/WSW. At base lay collection of disarticulated bones which had been previously disturbed and represented the remains of 2 individuals. Bone radiocarbon dated and produced calibrated date with 95% probability of lying between 1305 and 940 BC. No artefacts were found in cist but among the human bones were a humerus, radius and ulna, and all of the left forelimb of a pig likely to have been joint of pork | PSAS 121 (1991), 111–5; NMRS no NT47NW 39 |
| ∞ | NMRS | 1915 | Short cist found when clearing Boglehill Wood to form Longniddry Golf Course. Cist contained fragments of a Beaker (Clarke's S3E) type) donated to the NMAS (Acc No: EG50) and small microse of humt wood Reaker indicates Bronze Are date | PSAS 50 (1915–16), 150–1; NMRS no NT47NW 10 |
| 6 | NMRS | 1916 | A short cist was found when laying out Longniddry Golf Course. The long axis of the cist was aligned N/S and it contained a well preserved flexed inhumation unaccompanied by any artefacts. It is likely to be of Bronze Age date | PSAS 52 (1917–18), 32; NMRS no NT47NW 13 |
| 10 | No location | 24 April 1926 | A short city which was found during the construction of the golf course. It measured from 26 to 28 in (0.66–0.71 m) E/W and from 16 to 17 in (0.4–0.43 m) N/S and was 15 in (0.38 m) deep. It was covered by a single slab which measured 30.5 by 24 by 3.5 in (0.77 m × 0.61 m × 89 mm) and had a base formed from pebbles. A skull and vertebrae were recovered from the E end and a few partly burn bones were present at the SW corner. There were some green stains on the bones which may inply the presence of a degraded copper alloy object. Above the cist was a rough block of conglomerate. A heavy crust of stones Ift thick was present above this block. Worked flint flake (NMS X.EQ507) was also recovered from this cist. The cist is likely to be of Bronze Age date. | Stevenson (unpublished); NMRS no NT47NW 7 |

| Site Source of Date of Details No location discovery/ No location 1926? Sandstone slabs and was 12 in (0.50–0.74 m) wide. The coverstone measured 39 in (0.59 m) in length and was from 20 to 29 in (0.50–0.74 m) wide. The cist was aligned NNE/ SSW and contained burnt bone, charcoal and fragments of an urn. Against the north side of the cist was another concentration of burnt bone which was stained green. Above the cist was an 'unusual crust of stones and earth. A flint knife (NMS X.EQ56) was recovered from the cist. It is unclear if the urn mentioned in association with this cist was deposited with the NMS. It seems unlikely it is one of the urns mentioned later in Stevenson's text. The finds indicate a Bronze Age date. No location 1927 A small urn (NMS X.EQ502) with the rim crushed out of shape was discovered during work on the golf course. There was no mention of bones associated with it. The urn indicates a Bronze Age date. No location Sept 1927 A large inverted urn (NMS X.EQ503) discovered during work on the golf course. The urn indicates a Bronze Age date. No location 1927 A large inverted urn (NMS X.EQ509). The urn indicates a Bronze Age date. No location 1927 A large inverted urn (NMS X.EQ509) with an overhanging rim found during work on the golf course. The urn indicates a Bronze Age date. Solf course. The urn indicates a Bronze Age date. No location 1927 Further deposits of cremated bone and small deposits of bone are noted in Stevenson's text but are noted as 'not retained'. It is unclear how many further burials were present and when these | References | Stevenson (unpublished); NMRS no NT47NW 7 | Stevenson (unpublished); NMRS no NT47NW 7 | Stevenson (unpublished); NMRS no NT47NW 7 | Stevenson (unpublished); NMRS no NT47NW 7 | Stevenson (unpublished); NMRS no NT47NW 7 | Stevenson (unpublished) |
|--|-------------------------------|--|---|---|--|--|--|
| Source of location No location No location No location No location No location No location | | A short cist found by Dr Callander during work on the golf course. It was constructed of sandstone slabs and was 12 in (0.30 m) deep. The coverstone measured 39 in (0.99 m) in length and was from 20 to 29 in (0.50–0.74 m) wide. The cist was aligned NNE/SSW and contained burnt bone, charcoal and fragments of an urn. Against the north side of the cist was another concentration of burnt bone which was stained green. Above the cist was an 'unusual crust of stones and earth'. A flint knife (NMS X.EQ506) was recovered from the cist. It is unclear if the urn mentioned in association with this cist was deposited with the NMS. It seems unlikely it is one of the urns mentioned later in Stevenson's text. The finds indicate a Bronze Age date. | A small urn (NMS X.EQ502) with the rim crushed out of shape was discovered during work on the golf course. There was no mention of bones associated with it. The urn indicates a Bronze Age date. | A large inverted urn (NMS X.EQ503) discovered during work on the golf course. It contained bones and two blue beads (NMS X.EQ509). The urn indicates a Bronze Age date. | An urn (NMS X.EQ504) containing bones found during work on the golf course. The urn indicates a Bronze Age date. | Fragments of a broken urn (NMS X.EQ505) with an overhanging rim found during work on the golf course. The urn indicates a Bronze Age date. | Further deposits of cremated bone and small deposits of bone are noted in Stevenson's text but are noted as 'not retained'. It is unclear how many further burials were present and when these deposits date from. |
| Site Source of no location 11 No location 12 No location 13 No location 14 No location 15 No location 16 No location | Date of discovery/ excavation | 1926? | 1927 | Sept 1927 | May 1927 | 1927 | 1927 |
| Site no no 111 111 112 112 114 114 115 116 | Source of location | No location | No location | No location | No location | No location | Nolocation |
| | Site | Ξ | 12 | 13 | 14 | 15 | 16 |

in Table 4. All of these burials are noted under the same number in the National Monuments Record of Scotland and very little information for them is available from this source. The information in the following paragraph was taken from Stevenson's draft report.

In Callander's notes it is stated that the mound appeared to be of natural origin and no evidence was present to indicate a cairn structure. The location of the mound is described by RBK Stevenson in his text:

The crest is about 7 feet above and 100 feet south-east of the Cockenzie–Aberlady coast road, which is joined by the main road from Longniddry (A198) 120 yards to the north-east across a burn.

The size of the mound is not mentioned. The burials revealed in 1925 comprised two cists containing cremations and an inhumation and a further cremation below a large slab. These were located within a distance of approximately 11m of each other. The approximate location of the mound and burials have been plotted using information from Stevenson's report (illus 1, Sites 1 to 3). Over the following year further work on this area of the golf course resulted in the discovery of more burials, some of which also appeared to be of Bronze Age date. A note associated with one of these cists states it contained both burnt and unburnt bone and describes the presence of 'sand and heavy crust of rough stones 1ft thick in all'. This could indicate the remains of a cairn structure associated with some of the burials. All of the burials detailed in the draft report by Stevenson are summarized in Table 4. Where grave goods were present and were acquired by what is now the National Museums of Scotland the NMS registration number is quoted. The cremated remains from one of these burials have been included in the National Museums of Scotland 'Dating Cremated Bones Project' (Sheridan 2001) and yielded a date of 1690–1490 cal BC. This is only slightly earlier than one of the burials at

Evergreen and is likely to indicate the burials at Evergreen are part of a larger burial ground. It also indicates continuity in landuse in this area.

In addition to the burials discovered in 1925 further Bronze Age burials have been uncovered in this area (illus 1; Table 4). The house at Evergreen was built at some time after 1964 and it is very likely that burials were uncovered while it was under construction. However none of the discoveries is associated with the construction of this house. Other isolated Bronze Age cist burials have been discovered in the area around Longniddry. These include three further cists in the area of the golf course (Curle 1915; Callander 1916) and one further inland (Dalland 1991). At least one of the apparent known Bronze Age cists (Site 4) is a long cist very similar in form to those excavated at Four Winds (Dalland 1992) and more likely to be of Early Christian date.

CONCLUSION

The concentration of cobbles and stones surrounding the burials at Evergreen suggests the burials were associated with a cairn. The positions of the burials in relation to the concentration of stones and cobbles implies they were set into the cairn rather than dug into the ground surface. It is also possible that the stones were localized over the graves rather than forming a large cairn structure. Examples of Bronze Age graves with a covering of stones are known from Barns Farm, Dalgety, Fife (Grave 2, Watkins 1982) and Knappers, Kilbowie, Dunbartonshire (Davidson 1935). The burials at Evergreen were, however, in very close proximity and the stones covered a continuous area rather than delineating the areas of single burials. The cist which contained Skeleton 3 was quite roughly constructed in comparison to other examples of cists in this area (see Table 4).

The sequence in which the excavations took place did not allow the stratigraphic

relationship between Skeletons 3 and 2 to be established. The randomly-positioned nature of the cobbles and stones gave no indication as to the relative dates of Skeletons 2 and 4. The radiocarbon dates indicate that Skeleton 4 was probably buried after Skeleton 2. It seems likely that the burials represent the continual use of the cairn for burial rather than the contemporary burial of five individuals. The possibility that the skeletons may exhibit familial links or are part of a small gene pool could indicate the burial ground was used by either a family or small community. A variety of ages and both sexes are represented within this group of burials which shows the burial ground was not gender or age specific. The significantly altered ground surface combined with the limited area available for study at Evergreen make it impossible to reconstruct the original size and appearance of the cairn.

Bronze Age burials in graves, like those represented at Evergreen, are less common than cists (Barclay 1983). This bias is likely to be due to the discovery of many Bronze Age burials through ploughing, and the poor preservation of bone in many areas: the slabs of cists are noticeable when disturbed by ploughing and if the inhumation or cremated remains are in a very poor state of preservation they can still often be identified within a cist, whereas similar remains present in a grave or pit could be easily destroyed without trace by ploughing.

The evidence from the documentary sources and from 20th-century excavations suggests that the land around Evergreen could represent an area used for burial for a considerable time. It is possible that there was a mixture of natural mounds of sand and man-made cairns in the area prior to the recent developments in the landscape.

In conclusion, the burial tradition at Evergreen adds to the range of Bronze Age burial practices previously observed in the Longniddry area. This highlights the wide variation in burial practices used in the Bronze Age and

also the difficulty of assigning a date to burials using typology alone.

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