

The excavation of a group of long cists at Avonmill Road, Linlithgow, West Lothian

Magnar Dalland*

with a contribution by Daphne Home Lorimer

ABSTRACT

This report describes the excavation of three long cists near Linlithgow. Two skeletons were dated and the results are discussed in relation to radiocarbon dates from other long cist cemeteries. The excavation was arranged and funded by Historic Scotland.

BACKGROUND

In May 1990, as construction work progressed on a new housing estate in the grounds of Avon paper mill, it proved necessary to upgrade the road which led up to the old mill, Avonmill Road. As the contractors were laying a drainage pipe, they unearthed a human skull in their trench, towards the east end of the road (NGR NS 9852 7750), and immediately called the police who sent the skull to the police pathologist, Professor Busutil. He concluded that the skull was ancient. The next morning, when the workmen came across another skeleton in the trench, the police contacted Historic Scotland. A small team was sent out the same day from Historic Scotland (Archaeological Operations and Conservation) to undertake a rescue excavation.

THE SITE

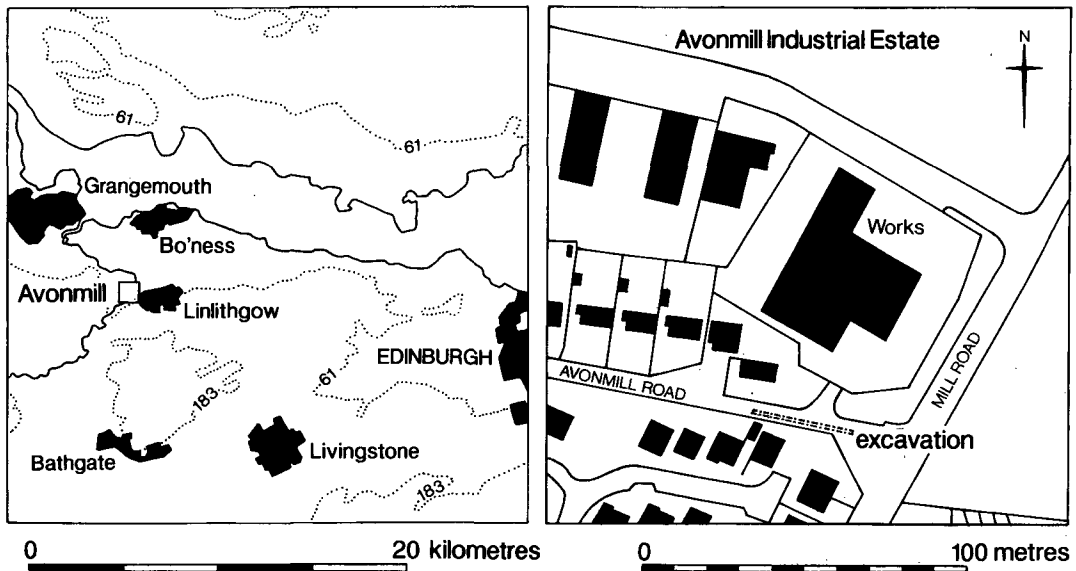
The drainage trench, about 1 m wide and 1.8 m deep, had been cut along the south side of Avonmill Road (illus 1), and along the north side of an old water pipe which is at a depth of about 1 m below the present road surface. The road runs along the crest of a low ridge which gradually rises from the east. Gardens border the road on both sides and slope downwards away from it.

The upper 0.8 m of the trench had cut through the gravel base of the road, comprising medium to large rounded stones in a grey clayey matrix. Below this lay the subsoil which consisted of fluvio-glacial deposits of medium to large rounded gravel in a brown sandy matrix. There was no trace of the original topsoil under the road.

Four stone cists were exposed in section over some 6 m. The trench was excavated a further 24 m eastwards but did not uncover any more burials.

* AOC (Scotland) Ltd, The Schoolhouse, 4 Lochend Road, Leith, Edinburgh

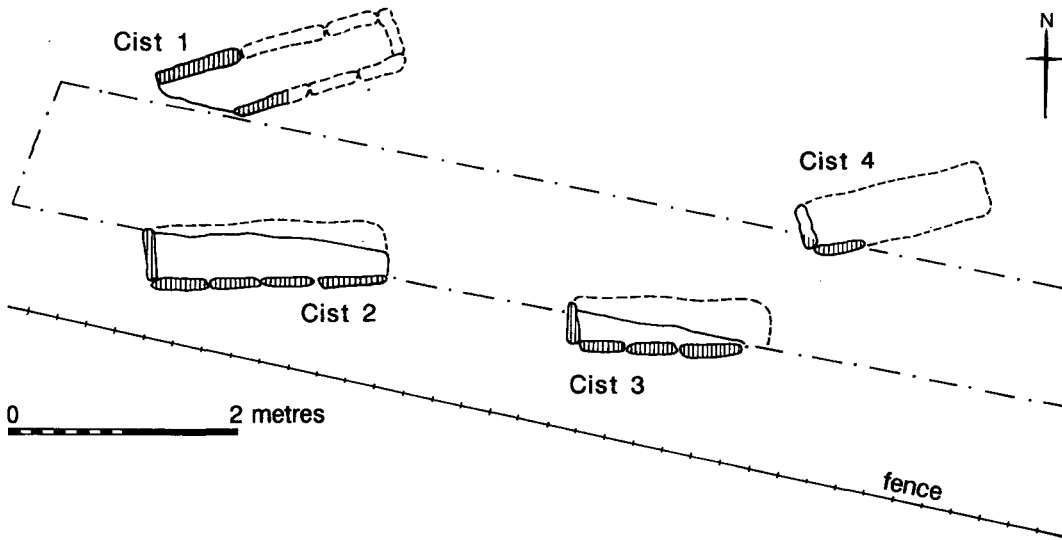
AVONMILL
LINLITHGOW
WEST LoTHIAN



ILLUS.1 Location map. The cists were found at the west end of the trench shown (cf illus 2). Based upon the Ordnance Survey map © Crown copyright

THE CISTS

The bases of the cists (illus 2) lay between 1.4 and 1.6 m below the present road surface, and had been cut some 0.6–0.8 m into the brown fluvioglacial gravel. They were aligned between 75° and 90° E of N. The three cists which were examined all contained skeletal material and, in each case, the skull or skull fragments were found at the west end of the cist.



ILLUS 2 The cist graves

CIST 1

A JCB bucket had previously removed the south-west corner of this cist and the remainder of it lay behind the north section of the trench, under some 1.2 m of gravel. It was therefore not possible to expose the cist fully in order to retrieve the skeleton without digging into and blocking off the road. Towards the east end, the capstone had collapsed inwards on to the legs of the skeleton. However, the rest of the cist was well preserved which made it possible to retrieve most of the bones through the opening made by the JCB. The size of the cist was recorded by measuring the dimensions of the interior of the cist through the opening at the west end.

The cist base, side and lid were constructed of sandstone slabs, 0.05–0.1 m thick. The cist was aligned at roughly 75° E of N. The upper part of the skeleton had been disturbed when the cist was first found, but the remaining bones were articulated and showed that the body had been lying on its back, facing east.

CIST 2

Cist 2 was located on the south side of the trench, 0.8 m south of Cist 1, and was aligned roughly 90° E of N. It was about 1.8 m long, and some 0.3 m wide at its east end. The north side of the cist had been removed by the JCB, but most of the burial was left intact in the south section of the trench. The grave lay below the old water pipe running along the trench, and although this pipe partly supported the trench side, the grave had to be excavated with caution in order not to cause the unstable old trench fill to collapse. It was, therefore, not possible to fully expose this grave.

The upper part of the cist consisted of four flat slabs, probably collapsed capstones, which tilted down towards the middle axis of the cist. Even allowing for the disturbance by

the JCB, it was clear that these probable capstones had not covered the entire cist, indicating that the burial may have been previously disturbed. This suggestion was supported by the fact that some human bones were found in the backfill above the cist.

Beneath the capstones, the grave was filled with brown loamy soil containing some unarticulated human bones (Skeleton 2B). Below this soil, another layer of flagstones covered the articulated, partial remains of a skeleton (2A): the lower right arm, the right half of the pelvis, the right leg, and the lower part of the left leg. The bones of the upper part of the body seemed to have been previously disturbed. Skeleton 2A had been lying on its back, on the third layer of flagstones which made up the base of the grave. The intervening space between the two lower levels of flagstones at the east end of the grave was less than 80 mm, which had caused some of the leg bones to become crushed. Once the skeleton had been removed, it proved possible to partly uncover the four upright slabs along the south side of the cist, which were between 0.35–0.6 m long and 0.25–0.3 m high. Their bases were level with the lowest flagstones in the grave.

These observations, particularly in the case of the east end of the cist, seem to suggest that a second burial had been inserted into a primary cist. The logical sequence would be that, having removed the primary capstones, the grave diggers inserted a second flagged base over the top of the primary body, creating an upper cist into which the second body was placed. Most of the secondary burial and the western half of the primary burial seemed to have been disturbed prior to the 1990 investigation. The old water pipe was lying only some 0.2 m above the upper part of the cist; it is therefore possible that the burial was disturbed when the pipe was laid. The bones retrieved from the western half of the cist proved, after analysis, to represent the remains of two individuals (Skeleton 2A & 2B; Lorimer below), supporting the suggestion that this part of the cist had been previously disturbed.

CIST 3

Cist 3 was located 1.2 m east of Cist 2. The south-western part of it survived in the south side of the trench, but the northern side and the east end of this burial had been removed by the JCB. The south side of the cist had survived for 1.4 m from the south-west corner and was made up of three side stones. The stones were between 0.35–0.6 m long and were about 0.25 m high. The cist was over 0.3 m wide at the west end. Fragments and imprints of capstones were visible along the top of the remaining side stones. In contrast to Cists 1 and 2, this cist had no base stones.

Disarticulated bones were recovered from the trench near the cist, but due to the JCB disturbance, it was not possible to determine whether the cist had contained an articulated skeleton. However, fragments of a skull were found near the west end of the cist, indicating the orientation of the body.

CIST 4

Cist 4 was found approximately 1 m east of Cist 3. The south-west corner of the cist was visible in the north side of the trench and the grave had therefore not been damaged by the JCB. Since it remained intact, it was decided not to excavate this cist any further. Judging from the alignment of the south-west side stone, this cist, like Cist 1, was aligned at roughly 75° E of N.

THE HUMAN BONES

Daphne Home Lorimer

Analysis of the human bones for anatomy, age and sex was undertaken with reference to Gray (1977) and Bass (1987). A summary of the results is presented here. The full report has been lodged with the site archive in the National Monuments Record of Scotland.

Partial skeletons only were retrieved from Cists 1, 2 and 3. Four individuals are represented (two from Cist 2). All bones are in a worn and abraded condition.

Cist 1 contained one female, possibly about 50 years of age or more at the time of death. Cist 2 contained two individuals. Skeleton 2A, an individual of unknown age and sex, came from the lower part of the cist; while Skeleton 2B, a female of unknown age, came from the upper portion. Cist 3 contained a female of about 35 years of age at the time of death.

DISCUSSION

It was possible to ascertain only the stature of Skeleton 2A: 1.68 m tall if male and 1.63 m if female. Owing to the condition of the bones very few non-metrical variations (a guide to population affinities) were seen, but it was perhaps unusual to find a partially closed metopic suture in a post-menopausal woman.

Platymeria or antero-posterior flattening of the femur in the skeleton from Cist 1 and squatting facets on the tibia from Skeleton 2B were possibly indicative of locomotion over rough and hilly ground; evidence of disc lesions in Skeletons 1 and 2B indicated activities liable to produce back strain. There were a few osteophytes, possibly age-related, and the presence of marked scars of parturition which indicated that Skeleton 3 had had one or more pregnancies. An osteoma was noted on the right side of the inner table of the frontal bone of Skeleton 1, and slight irregularity of outline of the borders of two rib fragments in Skeleton 2B suggested a healed fracture where remodelling was not complete.

It is perhaps of interest that Skeletons 1, 2B and 3 were all probably female and, although there were no conclusive sex markers, the small size of the bones and the smallness of the external occipital protuberance on the fragment of occiput of Skeleton 2A could suggest that it was female too.

RADIOCARBON DATES

Skeletal material from Cists 1 and 2 was submitted for radiocarbon dating. The samples contained the following radiocarbon levels:

Cist 1 (GU-3098): 1560±50 BP

Cist 2 (GU-3099): 1600±50 BP

Using the Belfast calibration curve (Pearson *et al* 1986) these radiocarbon levels are found to represent the following calendar dates (Dalland forthcoming):

	One sigma range	Two sigma range
Cist 1 (GU-3098):	AD 415–555	AD 400–615
Cist 2 (GU-3099):	AD 395–505	AD 345–600

The probability that the date of the sample falls within the one and two ranges is about 69% and 96% respectively. The calibration indicates that both skeletons are most likely to date from the fifth or sixth century AD. The probability that the dates of the skeletons are older than AD 400 is only 13% and 3%, while the chance of the skeletons to be later than AD 600 is less than 1% and 6%.

DISCUSSION

The close proximity of the four cists to each other indicates that the drainage trench cut through a long cist cemetery. The absence of further graves beyond Cist 4, towards the east end of the trench, seems to imply that Cist 4 may represent the eastern limit of the cemetery. Unfortunately, the trench to the west of Cist 1 had already been backfilled and may well have contained further burials which were not noticed by the workmen. However, given their vigilance in spotting the first skull, and in notifying the proper authorities, it seems most unlikely that the west end of the drainage trench had cut, unobserved, through a long cist cemetery containing a large number of graves.

Several long cist cemeteries have been discovered previously, located on low mounds or knolls (Stuart 1866; Cowie 1978). If that topographical aspect determined the location of this cemetery, it is possible that it is limited to the top of the low ridge along which Avonmill Road lies. There are no known records of graves found in connection with the building of houses on either side of Avonmill Road. This could indicate that the cemetery measures less than 20 m from north to south and, if it is limited to the crest of the ridge, not more than 10 m. This would leave a relatively small cemetery, measuring about 10 × 10 m.

It is possible that all four skeletons are female (D Lorimer above). It is difficult to ascertain whether this is significant, as the sample is very small, and the total number of graves is unknown.

There are at least five other sites in the vicinity of Linlithgow where long cists, or possible long cists, have been found, all of them lying within a radius of less than 3 km from Avonmill Road. A long cist cemetery at Avonglen Quarry, first reported in 1838 (NMRS NS 97 NE 1), is situated about 2.9 km WNW of the Avonmill Road site. Cists have also been found at Manuelhaugh (NMRS NS 97 NE 26), and Peace Hill (NMRS NS 97 NE 29) roughly 700 m south-west of Avonmill Road, and at Swordie Hill (NMRS NS 97 NE 29) and Airngarth (NMRS NT 07 NW 2), 1.8 and 2.7 km respectively, north-east of the Avonmill Road cemetery. There are two records of further long cists found in the Linlithgow Bridge area (NMRS NS 97 NE 27–28), but their precise location is not known. As Avonmill Road itself lies on the northern outskirts of the area known as Linlithgow Bridge, it is possible that one or both of these records refers to cists which were part of the Avonmill Road cemetery and were found, perhaps, when the old water pipe was laid along the road.

Henshall has published a distribution map of long cists unaccompanied by grave goods in south-east Scotland (1956, fig 6). The addition of the cemetery at Avonmill Road to this map reinforces the distribution pattern from 1956 which shows a concentration of long cist cemeteries on the south side of the Firth of Forth.

Over the last few decades long cists have been found almost on an annual basis, some belonging to known cemeteries and others, such as Avonmill Road, indicating hitherto unknown sites. Owing to the lack of grave goods, this type of grave was very difficult to date before the advent of radiocarbon dating. Nevertheless, Henshall (1956) suggested that the

long cists date to the Early Christian period: from the fifth to the eighth or ninth century AD. Radiocarbon dates from sites excavated since then have confirmed these dates.

Since the excavation of the long cist cemetery at Parkburn (Henshall 1956), two major long cist cemeteries have been excavated: Hallowhill, St Andrews (Proudfoot 1976, 1977 & 1985) and the Catstane, Midlothian (Cowie 1978). Skeletal material from both sites has been dated. The 20 dates from Hallowhill range from the sixth to the 10th century AD, while the five dates from the Catstane fall within the fifth to the eighth century AD. Three dates from a long cist cemetery at Four Winds, Longniddry, East Lothian (Dalland 1992), cover the same range as the Catstane dates. The dates from Avonmill Road fall mainly within the fifth and first half of the sixth century AD and are close to the oldest date from Four Winds and to the two oldest dates from the Catstane:

			One sigma range
Cist 2, Avonmill Road	GU-3099:	1600±50 BP	AD 395–505
F7, the Catstane	GU-1156:	1585±85 BP	AD 390–585
Burial 2, Four Winds	GU-2733:	1570±50 BP	AD 410–540
Cist 1, Avonmill Road	GU-3098:	1560±50 BP	AD 415–555
F12, the Catstane	GU-1158:	1550±70 BP	AD 415–590

Although these dates fall within the Early Christian period, it is difficult to determine whether these burials are Christian or pagan. At the Catstane, the inscribed stone indicates a Christian cemetery; however, such indicators are rare and standing stones like the Catstane would be more vulnerable than their buried long cists. It is therefore likely that such stones would be under-represented in the archaeological record. Some long cist cemeteries, such as Hallowhill, contain what have been interpreted as pagan graves, on the basis of their accompanying grave goods. It is not yet clear whether the absence of grave goods from the Avonmill Road cists, and others elsewhere, is adequate confirmation that these are early Christian graves.

CONCLUSION

As more long cist cemeteries are dated by radiocarbon, a pattern is emerging, especially for the sites located in Lothian. So far no dated sites are likely to be earlier than about AD 400, or later than the eighth century AD. It will be interesting to see if dates retrieved from future excavations of long cist sites confirm this trend.

Although it cannot be confirmed that the Avonmill Road long cists are Christian burials, the manner of their construction, their orientation and the absence of grave goods indicate a Christian influence; the radiocarbon dates place them in a historical context where such influence is certainly likely.

ACKNOWLEDGEMENTS

The author would like to thank Persimmon Homes for their co-operation, Alan Duffy for his help with the excavation, Christina Unwin who drew the illustrations, and Olwyn Owen, Finbar McCormick and Gill Walsh for their comments and help with editing this report. The excavation and publication was funded by Historic Scotland.

REFERENCES

- Bass, W M 1987 *Human Osteology* (3rd edn). Oxford.
- Cowie, T 1978 'Excavations at the Catstane, Midlothian 1977', *Proc Soc Antiq Scot*, 109 (1977-8), 166-201.
- Dalland, M 1992 'Long cist burials at Four Winds, Longniddry, East Lothian', *Proc Soc Antiq Scot*, 122 (1992), 197-206.
- Dalland, M 'A program for calibration of radiocarbon dates with procedures for the analysis of age differences and adjusting for stratigraphical data', forthcoming.
- Gray, H 1977 *Anatomy Descriptive and Applied*. Pick, T P & Howden, R (eds). 15th edn. New York.
- Henshall, A S 1956 'A Long Cist cemetery at Parkburn Sand Pit, Lasswade, Midlothian', *Proc Soc Antiq Scot*, 89 (1955-6), 252-83.
- NMRS = National Monuments Record of Scotland.
- Pearson, G W, Pilcher, J R, Baille, M G L B, Corbett, D M & Qua, F 1986 'High-precision 14C measurement of Irish oak to show the natural 14C variation from AD 1840-5210 BC', *Radiocarbon*, 28, no 2B (1986), 911-34.
- Proudfoot, E V W 1976 'Hallowhill', *Discovery Excav Scot*, 1976, 33.
- Proudfoot, E V W 1977 'Hallowhill', *Discovery Excav Scot*, 1977, 16.
- Proudfoot, E V W 1985 'Hallowhill', *Discovery Excav Scot*, 1985, 15.
- Stuart, J 1866 'Account of graves recently discovered at Hartlaw, on the farm of Westruther Mains', *Proc Soc Antiq Scot*, 6 (1864-6), 55-61.

This paper is published with the aid of a grant from Historic Scotland