Short-cist burials from Fife. Upper Kenly Farm, Belliston Farm and Dalgety Bay

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The short-cist burials discussed in this paper had all been disturbed to some extent when they were first uncovered, but all have features of archaeological interest. They are from widely scattered sites in Fife: at Upper Kenly, Belliston and Dalgety Bay (Illus 1) and were excavated in the period 1985-1995. They are brought together here because of their similarities and because each has provided significant new information within the overall theme of short-cist studies. They are of the same general cultural and chronological horizons, but because they were not part of a planned programme of work they have been reported upon and discussed separately as well as in a brief concluding section.

All the cists were excavated by the author, working with volunteers and students from the Student Archaeology Society, University of St Andrews; Historic Scotland funded the Belliston excavation, but the others, under the auspices of the former Fife Archaeological Index (FAI), were unfunded. The specialist reports have been incorporated into the text, while the complete reports, listed in the archive, have been deposited with the site archives at the National Monuments Record of Scotland.

1 Upper Kenly Farm

On 7 February 1985, a large stone, which proved to be the capstone of a short cist, was dislodged during ploughing for potatoes at Upper Kenly Farm, near Kingsbarns on the east boundary of St Andrews and St Leonards parish (Illus 2). Mr Durie, the farmer, reported the find to the landowner, the late Mr George Brown of the University of St Andrews Works Department, who contacted the author, Director of the former Fife Archaeological Index (FAI), to arrange for an excavation to be carried out.

The site. Upper Kenly lies in an area of considerable Bronze Age activity, where numerous other cists and artefacts have been found, although not on Upper Kenly Farm itself. The cist (NO 5703 1238) had been dug into a low sandy clay knoll at a height of 60m OD close to the E boundary of the parish. Of NE aspect, the land slopes in a NE direction towards the coast at Babbet Ness. This is an area which is generally poorly drained with occasional low mounds or hillocks, such as that at Upper Kenly. The soil is a reddish brown sandy clay till with layers of silts and yellow and red sands, as found at the base of the cist.

The excavation. When the cover stone was discovered it was up-ended and placed precariously beside the cist, partly over its N edge. Ploughsoil had fallen into the cist, virtually filling it and thus nothing of the interior was visible at first. A small excavation area, 1.8m by 1.3m, was set out around the cist, leaving the still upright cover stone in place and the recent soil influx was removed prior to excavation of the cist itself.

The cist (Illus 3)

The cover stone, of dark red sandstone, was 1.5m long by 1.05m wide and 0.12m thick. The form of the cist could be seen clearly as a pale blue-grey clay outline on the under surface of the cover stone. The tops of the side stones of the cist, with its long axis E-W, lay 0.5m below the modern surface, and before it was disturbed the top of the
wedged into position. The S side stone, 0.14m thick, sat in the subsoil without packing stones.

In order to ensure that the capstone was level, a large flat wedge stone had been set on and was covered by a bed of blue-grey clay at the NW corner; several levelling stones were similarly utilised at the SE corner (Illus 3). On the upper edges of the side stones a thin skin of the same clay, much of which had adhered to the cover stone. This clearly showed the cist outline and therefore where it had originally fitted over the cist. Blue-grey stains with a little whitish residual clay could be seen along the upper part of the interior of the cist indicating that some clay had oozed down the sides when the capstone had been set in place. Little clay had been inserted into the corners of the cist, as the stones fitted quite closely, except for the SW corner, where a little clay packing was used.

The cut for the grave pit was extremely close to the N and S side stones, but on the E and W it extended at least 0.2m beyond the end stones; packing stones were identified in the SE corner, where they could be seen from the interior, and a small number could be seen on the S side. However, the grave pit was not examined and details of the pit and packing stones were not recovered. To the E of the cist several boulders were noted, but not examined, and it is not known whether or not they might relate to this or to another cist.

The stones for building the cist had not been quarried, but had been brought from the coast, where suitable blocks of sandstone out-crop on the shore, some 1.5 miles (2.4km) away to the NE. All
showed signs of being water-worn and none appeared to have been shaped. The N side slab was of dark red ripple sandstone, while that on the W also showed ripple marks. The small number of packing stones visible were small boulders, which could have been found in local deposits of sand and gravel.

The cist had been dug down through the sandy clay subsoil to the bedrock, which was of soft sandstone, varying in colour from yellow through pink to almost purple. On the floor of the cist was a layer of sandy clay soil in which a Food Vessel was found, lying on its side with its mouth towards and against the S side stone 0.4m from the W end. When found, the Food Vessel was intact and filled with soil that had recently fallen into the cist. Samples of soil and clay were collected for pollen study from the corners and from the floor. No human remains or other finds were recovered.

The Food Vessel (Illus 4)

Conservation. The Food Vessel was intact so that no treatment was necessary after cleaning. Samples of
the soil adhering to the pot were retained for pollen study and scrapes of the black deposit were taken from the inside by G Whittington.

Description. This is a simple globular bowl Food Vessel (Illus 4) with inturned mouth, the greatest diameter set high; a splay near the base forms a slight foot. It has a burnished external surface with a pinkish slip, while the internal surface is pink-yellow. Black staining survives on the sides and base of the pot. Large black grits as well as smaller quartz grains can be seen in the fabric, but, because the vessel is intact, no constructional or fabric details can be seen. The wall thickness is 13mm near the rim, 10mm over the body of the pot and the base is 19mm thick. The vessel is 144mm high and its maximum diameter is 186mm; the diameter of the mouth is 156mm, and the flat base is 74mm across. The deeply bevelled rim is 16mm wide.

Of high quality, the vessel is extremely well made with carefully executed cord decoration, comprising four horizontal bands, of three, three, two and four rows of cord impression, with double chevrons between the upper two bands and continuous lozenge-shaped cord impressions in the third register. On the upper edge of the pot are slight vertical cord impressions, while on the inturned rim a series of cord impressions forms a V-shape decoration. The design is completed with a row of irregular small triangular impressions made by a sharp pointed tool, perhaps a piece of wood. The decorative scheme is finely executed and in places it can be seen that a short cord of about 50mm was used as well as a longer length of cord.

Discussion. While no exact parallel has been found for the vessel from Upper Kenly, it is of a type now known as a globular bowl. Burgess (1974, 185, fig 30.6) shows examples of the same form, with the deeply bevelled rim and the pronounced foot. This type of Food Vessel is more often decorated with impressed cord than with more elaborate ornament made by other techniques. Cord decoration is prominent on several other Food Vessels from S and SE Scotland, including, for example, one from Balbirnie (Ritchie 1974, fig 3.2), another from Dalgety Bay (Watkins 1982, fig 14) and one from Gairneybank (Cowie and Ritchie 1991, illus 3), but none of these is of the same form as that from Upper Kenly.

Food Vessels in Scotland show traits common to both Yorkshire vase forms and Irish forms and like many others in Scotland the globular bowl combines attributes of both. They are of similar date to Beakers and cremation urns, as discussed by Burgess (1974, 184). A summary of radiocarbon dates for these pot types can be found in Cowie (1993, 140) and this provides a chronological context for the Upper Kenly Food Vessel.

The environment of Upper Kenly

Seven samples of the sandy clay soil from the floor of the cist were examined and revealed a restricted range of pollen taxa. All the pollen grains were badly folded (Whittington 1993, 211), with grasses (Graminae) dominant, but hazel (Corylus), ribwort plantain (Plantago lanceolata), dandelion (Compositae), cress ( Cruciferae), ferns (Filicales), alder (Alnus) and heather (Calluna vulgaris) all present. Only one cereal grain, of barley (Hordeum), was identified.

Only a small number of pollen grains, mainly of grass and hazel, was present in the scrapes from the inside of the Food Vessel.

These pollens may reflect an area of poorly drained land, such as still exists nearby. Although
there was only one single pollen of barley, there were also traces of plantain, a weed of cultivation, so that the cist was probably dug in an area where there was some cultivation and where there was still uncultivated or rough ground, with alder and hazel growing along the banks of the nearby burn.

It is interesting that the range of pollens from the inside of the pot is more restricted than that in the soil on the floor of the cist. Although both contained grasses and hazel pollens, the soil from the floor included many other pollens as well. It is probable, therefore, that the Food Vessel was made for the burial or that it had been in use in the spring, when hazel is in flower, and that the pollens became incorporated in its contents accidentally before deposition in the cist. The soil on the floor of the cist seems, however, to reflect the wider range of local pollens from plants growing in the area.

2 Belliston Farm

The cist at Belliston Farm was discovered on 30 January 1995 by Mr David Roger, the farmer, when he and his father were clearing a field of stones prior to planting potatoes (Illus 5). The machine dislodged a large stone; later, when he pulled the stone out of the ground, Mr Roger noticed the short cist at a considerable depth below the surface. It contained a quantity of soil that had fallen in when the cover stone was removed. No trace of a burial could be seen but a small Food Vessel, knocked over by the fall of soil, lay on the base.

The find was reported to St Andrews Heritage Services, which informed Fife Region and Historic Scotland. Historic Scotland agreed to fund the excavation and the conservation of the Food Vessel, which was removed immediately and taken to Archaeological Operations and Conservation for conservation because it was extremely fragile. Prior to excavation a preliminary resistivity survey of the area around the cist was carried out by Dr R Duck, then of the School of Geography and Geology, University of St Andrews, and the excavation took place in early March, with members of the University Student Archaeology Society. Thereafter the cist was dismantled and the stones laid flat in the ground.

*The site.* The site lies on a slight natural knoll, at approximately 70m OD, in a field known as the
Law Park on Belliston Farm, Carnbee Parish at NO 5002 0492 (Illus 5). N of the cist site is Baldutho Craig, 162m OD, a hill of volcanic origin, which, with Kellie Law and Carnbee Law, forms an E-W ridge of high ground from where the land slopes generally in a SE direction to the Firth of Forth some 2.5 miles (4km) distant. The site now lies in open ground with clear views to E and SE towards the Firth of Forth; to the W is Millers Den, a tree-covered, steep-sided valley through which runs a tributary of the Dree Burn.

The soil in the vicinity of the cist is a deep sandy loam, with many large stones, while the rest of the field is a sandy clay loam, now relatively free of sizeable stones. The cist had been set into a knoll which, though now slight, gave a name to the field, the Law Park. The knoll lies on the edge of a terrace, below which the ground slopes steeply to a level field before continuing its drop to the coast. The site is, therefore, unexpectedly prominent when viewed from the surrounding area.

The resistivity survey. This summary is based on the report by Dr R Duck, now of the Geography Department, Dundee University.

Before excavation a resistivity survey was carried out in order to establish the potential for the discovery of other cists in the immediate vicinity. An area 15m by 35m was surveyed around the cist and over the knoll using a BRGM Instruments EDA R-40, DC Electrical Resistivity Meter with readings at 1m spacing. The grid orientation was aligned on 60° E of N, the cist orientation as judged before excavation.

The distribution of resistivity values was consistent with a pattern of deeper soil around the cist. However, no obvious anomalies were recorded other than two small low readings on either side of the cist. Based on this single-method, small-scale survey, no areas of possible archaeological significance were noted but there was potential for remains of other features in the vicinity of the cist. However, on present evidence there is no strong indication on which to base further archaeological work.

The excavation. Because of the unusual depth of the ploughsoil, 0.6m, an area 4m by 3m was excavated around the cist in order to gain safe access to it and prevent soil falling into the cist. Extensions of 1.2m by 1.45m on the E and 1.6m by 1.3m on the W were excavated to follow up the possible features indicated by the anomalies identified by the resistivity survey, but no remains were found in these extensions.

The capstone (Illus 6), which had been moved aside before excavation begun, measured 1.65m long by 0.8m wide and varied from 0.13m to 0.16m
Illus 7. Plan and sections of the cist at Belliston Farm, showing the large oval grave pit and the extremely large packing stones. The heavy dotted lines show the position of the cover stone. The lighter dotted line indicates patches of clay.

thick and light blue-grey clay adhered to its underside, marking the outline of the cist. The cist (Illus 7) measured 0.95m internally on the N side, 0.87m on the S side and was 0.5m wide. It lay approximately NE-SW, its orientation being 60° E of N. It was constructed of substantial sandstone slabs, although the upper edges of the N and S side stones were broken and irregular and had been patched with clay when the cist was built. The S side stone was of an iron-rich soft yellow sandstone, which was flaking badly and had been damaged, possibly during transit to the site. This could be one reason for the substantial amounts of clay required to level the cover stone, which was of the same iron rich sandstone. The N side stone was of yellow sandstone but was harder and proved to be much the heaviest stone used in constructing the cist. The E and W end stones were of a hard
grey sandstone, both of which had been trimmed square.

The cist had been set into a large oval pit, 2.5m long by 1.8m wide, dug to a firm sandstone base 0.5m deep below the top of the subsoil. The space between the cist and the pit had been refilled with sandy clay subsoil and extremely large packing stones of glacial origin. Because of the difficulty of packing soil among the large stones there were several substantial voids in the back-fill. A rim of black soil, traceable around most of the edge of the pit, was closely examined, as it could have indicated the presence of organic remains. However, it proved to be soil that had filtered into the top of the pit and there was no trace of any organic-rich soil lining the pit when this was excavated.

Blue clay, which was still plastic when first uncovered, had been utilised extensively in the construction of the cist. Some had been pushed deep into the corners between the side stones to seal the cist tightly and it had been used to adjust the base of the S side stone, as well as for levelling and sealing the top edges. A small cut had been dug 0.1m into the cist floor to drop the S side stone and level its top edge, which was too high at the centre; it was not high enough at either end, however, and wedges of clay, bound with small stones, had been pushed under its E and W ends to secure it.

Large amounts of clay had been spread over the floor of the cist at the NE and SE corners and along the entire W end. Considerable quantities of clay had been used to level most of the upper edges of the side stones, and a thick deposit had been spread thickly over the packing stones at the E end, some of which resembled edge paving, leaving a substantial lump of clay at the NE beyond the edge of the cover stone. Because of the quantity of clay utilised along the cist edges, some had run down the interior of the side stones, resulting in a pale grey stain. The precise position of the capstone over the cist could be determined from the clay outline adhering to its underside.

The loose soil which had fallen in when the cover was disturbed had been trampled at the W end when Mr Roger retrieved the Food Vessel. The pot had been knocked over when first discovered and the upper part was damaged by the fall of soil. The Food Vessel appeared to have been placed mouth downwards c 0.2m from the S side and 0.45m from the W end of the cist, confirmed when rim fragments were noted in the soft wet sandy clay soil on the floor of the cist, a little W of centre at 0.5m from the E end and 0.2m from the S side stone.

The environment. This summary is based on a report on the soil pollens prepared by Professor Graeme Whittington, Geography Department, University of St Andrews.

Soil samples were taken from below the in situ Food Vessel sherds where it seemed probable that the soil would have remained uncontaminated by the modern influx of soil. These samples were examined with others scraped from the vessel itself before conservation, but only three from the soil below the pot contained measurable amounts of pollen (Whittington 1997). Grasses were dominant, and there were also cereals and weed species, but little tree or shrub pollen, all indicative of an area of contemporary cultivation. However, there were substantial percentages of Brassicaceae pollen, a large plant family whose pollens are virtually indistinguishable (Bennett 1994). The amount of Brassicaceae in these samples is unprecedented from an archaeological context of this date and at first the results of the study were totally discounted because of what appeared to be modern contamination, possibly of oilseed rape or swede, both of which had been grown in the area some years ago. However, four additional samples were collected later from a soil pit in the modern soil near the cist. They contained virtually no pollen of any kind and
so it appears probable that the samples containing the Brassicaceae pollen from the well-sealed cist do indeed derive from the original soil on the base of the cist at the time of the burial.

These pollen results from Belliston are difficult to interpret, in part because the pollens are not numerous and are not well preserved, and because the Brassicaceae family is so extensive. Moreover, no similar deposit has been identified at another site of this date. One possibility is that at the time of the burial the cist was dug into arable ground, seriously contaminated by weeds of cultivation. Charlock, for example, is a member of the Brassicaceae family and is just such a weed. Perhaps this unusual inclusion in the pollens of Belliston reflects a food deposit with the burial, though not, perhaps, in the Food Vessel which did not yield any pollens. It is also possible that plants, including Brassicaceae, had been spread as a mat on the floor of the cist or that plants had been placed over or beside the burial.

The Food Vessel (Illus 8)

Conservation. This is a summary account of the conservation report prepared by G Schofield, of AOC.

The vessel was two-thirds complete with almost half of the upper portion of the vessel detached. All the edges were crumbling and the surfaces were badly crazed with fine cracks. The small amount of soil inside the vessel was removed and retained and the vessel was then cleaned with a scalpel and dental tools, and any remaining patches of soil were removed using acetone on cotton wool swabs. The vessel was consolidated and then reconstructed.

Description. This is a summary based on the report by A MacSween. Illustration is by T O'Sullivan of AOC.

The pot is a tripartite vase Food Vessel, 130mm in height, 150mm in external diameter at the slightly everted rim and 169mm in diameter at the lower carination. The walls vary in thickness from 14mm to 18mm. The rim has an internal bevel. Between the carinations are three unperforated lugs pinched up from the wall of the vessel; two are complete and the third survives in part. The fabric is fine clay tempered with finely crushed rock. A thin slip has been applied to the exterior and interior. The vessel has fired grey with red surfaces and there is no soot on it.

The decoration extends over the exterior and onto the internal bevel of the rim. Between the rim and the upper carination is a row of circular impressions, 3mm in diameter, possibly made with the shaft of a small bone, bordered by parallel lines of twisted cord impressions. On the underside of the upper carination is a row of oblique ‘maggot’ impressions. Between the upper and lower carinations is a second row of circular impressions interrupted by the lugs. A row of incised chevrons borders the lower carination. Over the lower part of the vessel incised cross-hatching forms a ‘basket effect’. The exterior of the base is decorated with a border of vertical twisted cord impressions and the
Illus 10. Plan and sections of Dalgety Bay Cist 1, showing the excessive amounts of clay utilised and with the skeleton in situ, not very well preserved, and many bones missing. The right tibia showed scars of a healed amputation.

lip of the rim is embellished with ‘maggot’ impressions of whipped cord.

Discussion. Food Vessels have been recovered from numerous sites in E and central Scotland (Shepherd 1982) and the vessel form and techniques of decoration of the Belliston Farm Food Vessel, while not having exact parallels, can be matched on other Food Vessels from the area; for example: unperforated lugs on a bipartite food vessel from North Mains Strathallan, Perthshire (Barclay 1983, 214, fig 56a); oval stamps and oblique incisions on a vessel from Hodgeton Farm, Inverkeilor, Angus (Coutts 1964, 159, fig 2); and the rim form and ‘maggot’ impressions on a tri-

partite bowl from Balfarg, Fife (Cowie 1993, 139, illus 53).

Radiocarbon dates from E and central Scotland for sites comparable with Belliston have been summarised by Sheridan and Cowie (Cowie and Ritchie 1991, 107-8) and range from c 1700 bc to 1150 bc (Cowie 1993, 140). The Belliston cist and Food Vessel would probably belong to this date range.

3 Dalgety Bay

Two short cists were discovered on a building site in Dalgety Bay (NT 1545 8341) in October, 1986 and a third was found nearby in June, 1987 (Illus
The developer, Muir Homes Ltd, reported the find to the police who contacted the Fife Archaeological Index (FAI). After consultation with the National Museum of Antiquities of Scotland, arrangements were made for the FAI to carry out the excavations.

Cists 1 and 2 were discovered, 2m apart, when the developer was digging foundations for houses in Carrick Drive. Cist 3, which was 5m to the W of the first two cists, was not found until much later, when the adjacent house plot was being levelled for the foundations of the last house on the site. Cist 1 was removed after excavation and the stones were numbered and kept for possible rebuilding of the cist on a suitable site nearby. The other cists were dismantled later and all the stones were stored by the Community Council, which later organised for one cist to be reconstructed in the grounds of a nearby supermarket, where it is displayed with an explanatory board.

The site. The cists were situated at 25m OD on ground sloping gently towards the coast at Dalgety Bay, which lies some 600m to the E. The soil is a light sand and gravel in the vicinity of the cists and there are occasional sandy knolls in the wider area, but the early topography of the cist site cannot now be ascertained because of much recent disturbance. However, based on limited surviving evidence, the site could have been a natural knoll.

Cist 1

The cover stone of Cist 1 had been broken when it was discovered, but the greater part of it remained in situ. It measured approximately 1.56m by 0.92m wide and 0.18m thick. It was of dark red-brown sandstone, covered on the underside by many small water-worn holes, indicative that it had come from the shore.

Internally, Cist 1 (illus 10) measured 0.9m long, 0.55m wide by 0.65m deep below the top of the subsoil. It lay NE to SW, 50° E of N and was well made. The corners fitted neatly and only the N side stone was too long, extending into the grave pit. All the corners were packed with soft plastic grey-blue clay and similar clay had also been spread over the top edges of all the side stones to provide a secure foundation for the cover stone. Extra clay had been spread over the upper edges of the SE corner, extending for some 250mm beyond the side stones. This was to level the corner, which was too low for the cover stone to sit properly. This clay had successfully sealed the cist and the only soil inside had fallen in when the capstone was disturbed by the machine driver.

The skeleton

The reports of the skeletal material have been summarised from the detailed reports by Dr M Bruce (anatomy) and Dr N Kerr (dentitions).

Cist 1 contained a crouched, well-preserved skeleton of a young adult male, lying on its left side with the head at the NE end (illus 11). The individual was probably in his early- to mid-twenties at death, about 1.78m tall and well built.

He had suffered an amputation of his right lower leg, which he survived for some weeks at least. It is not known why this was necessary. Major trauma on the right tibia can be seen, where a callus had formed across the medullary cavity and there are no bones of the right foot; regrettably, the right fibula is missing. The evidence points to amputation midway along the tibia where the healed end tapers to a rounded stump. This individual had lived for some time after the amputation, since healing had taken place, but he did not live long enough for his disability and consequent inactivity to seriously affect his bone density.

This appears to be the earliest recorded amputation in Europe.

Several other injuries were identified, such as Schmorl’s nodes, caused by heavy compression of vertebrae and a possible healed fracture of a lumbar vertebra.

Thirty teeth were present, all showing considerable wear, in part because of a severe over-bite. Wear on the lower right central incisor had resulted in an apical abscess, but there were no caries. The individual had signs of gingivitis and some periodontitis. It also appeared that attempts had been made to remove calculus from the lower teeth during life. Crushing and grinding of bones of poultry and smaller animals could be one possible explanation for the degree of observed wear (Kerr 1989).

No artefacts were recovered from the cist and no other remains were identified. Samples were collected and submitted for pollen analysis.

Cist 2

Cist 2 was discovered two metres NE of Cist 1 and 0.5m higher in the soil (illus 12). There appeared at first to be two capstones, one, a large white stone and the other smaller, of water-worn orange sandstone. The smaller, 0.9m long by 0.47m and 0.15m thick, was lifted, but when the soil underneath it was excavated no trace of disturbed soil or another cist was revealed. Cist 2 lay entirely below the large cover stone, which, broken by the digger, proved extremely fragile and broke up when it was being lifted. It measured 1.58m by 0.88m and was 0.2m thick. This cist was oriented NE-SW, 50° E of N, as was Cist 1 (illus 13); it measured 1.25m by 0.71m and was 0.6m deep below the surface of the subsoil.
The NE end stone measured 0.7m by 0.48m high by 0.1m thick, the SE side stone was 1.4m long by 0.48m high and 0.12m thick and was badly broken at the W end. The SW end stone was 0.75m long by 0.48m high and 0.1m thick, while the NW side stone measured 1.15m by a maximum 0.6m high and 0.1m thick. The cist measured 0.5m in depth and, apart from the NW end stone, which was bedded to a depth of 0.18m into the subsoil, both side slabs and the SE end stone required packing stones to level them.

The floor of the cist was paved with selected quartz pebbles (Illus 12) packed tightly to form a complete cover on a base of soil spread over the sand and gravel subsoil into which the cist had been dug.

A grave-cut was identified extending 0.2m around the cist (Illus 13) with a number of small packing stones visible. This grave pit was not examined further.

Cup-and-ring carving

A single example of a cup-and-ring carving (Illus 14) was identified on the N end of a large flat slab of reddish brown sandstone, part of the edge paving set over the NE side stone of the cist. The cover stone had overlain this slab and some of the clay seal adhered to its upper face (Illus 14). The cup was 10mm deep and its diameter 25mm; the lightly
pecked ring was approximately 150mm across. No other similar carving was found on the stone, which was covered in slight water-worn hollows.

The skeleton
The cist contained a crouched skeleton (Illus 13), lying on its right side with the head to the SW. Fragments of stone which had spalled off the cover stone had crushed the skull into small pieces, which were difficult to recover. The vertebrae were fragmentary and no long bones were intact.

These remains were of an adult male, probably in his thirties. Many bones were missing, but preservation of the surviving bones was fair. Because of the condition of the bone, any calculation of the original height of the individual could only be approximate, but the individual was probably somewhat taller than the burial in Cist 1, over 1.78m tall. The skeleton exhibited several examples of trauma, one resulting in an outgrowth on the right tibia; in addition, there are squatting facets on both tibiae, and degenerative cysts were identified on the bones of both feet, but their cause is not known.

Animal bone
The shaft of a limb bone from an unidentifiable immature animal was found in the S corner of the cist, near the left foot (Illus 13).

The bronze dagger
Conservation. This report summarises the reports provided by Tom Bryce, Conservation and Analytical Research Department, National Museums of Scotland.

The dagger blade, although intact, was suffering severely from corrosion when found (Illus 15a); it was covered in a brown deposit of organic origin, the remains of the sheath and there were traces of the hilt beside the rivets (Illus 15b). The dagger was taken immediately to the National Museums of Scotland, where remedial work was undertaken.

When the upper face was examined under the scanning electron microscope traces of skin were found; these were the remains of the sheath. Prior to cleaning, this material was particularly noticeable on the upper face, as were several threads,
indicating the presence of textile as well, while in the corrosion products of the lower face textile impressions and threads were clearly visible.

The dagger was extremely fragile, as the bronze had totally mineralised. It was X-rayed, cleaned manually, stabilised and lacquered to preserve it. The X-ray fluorescence of the blade showed it was of bronze, while one of the loose rivets was found to contain arsenic as well as copper and tin. The severely corroded rivets are somewhat distorted, laminating badly and show cracks and, probably because of corrosion products, they vary slightly in size. Traces of the hilt were found to have a high calcium content and were, therefore, of bone or horn, probably the latter. The brown material adhering to the blade near the rivets was found to be epidermal, that is, skin from the sheath. The textile impressions and threads could be of woollen fabric.

Following consideration by the Treasure Trove
committee, the dagger has been deposited with Dunfermline Museum.

Description. An intact bronze dagger blade (Illus 16), pointing slightly towards the skeleton was found partly under the end of the right humerus, that is at the right elbow. Its three hilt-plate rivets were still in situ and two hilt rivets were found among the decayed remains of the hilt, which survived as dark brown organic material near the end of the blade. Other organic fragments include parts of the sheath, adhering to the blade and small fragments in the soil. On the upper side, the remains of the sheath appeared to be of skin and when the underside was examined traces of textile could be seen, perhaps from a cloth wrapper, while around the rivets and on the upper part of the heel of the blade a white deposit was clearly the remains of the hilt (Illus 15a).

The original surface of the blade had mineralised almost totally and only survives in small patches near the rivets. The blade is very thin with a slight midrib on only one side (Illus 16). It is 153mm long, 60mm maximum width at the heel and survives to only 5mm thick. The rivets measure approximately 15mm long, 8mm at the narrow central section and 11mm where burred over at the ends.

Where it overlapped the blade, the hilt-plate can be identified by a clear W-shape below the rivets (Illus 16) and because of added thickness there. The remains of the hilt survive among the rivets on both surfaces of the hilt-plate.

On the upper face of the dagger, two or three faint traces of possible dots are visible on the inner part of the left W-edge, possibly from pointillé edging, that is, a row of punched dots on the blade below the hilt, such as on one from Cleigh, Argyll (Henshall 1968, fig 42.4). However, the evidence is slight and the dots in this example could be an effect of the cleaning process.

Although the majority of hilt-plates have an omega-shaped end the W-edge hilt-plate end is a form known in Scotland, as for example Waspister, Orkney, where the hilt itself is well preserved (Henshall 1968, fig 44). In addition, the horn hilt and the combination of skin and textile of the sheath set the blade firmly in the cultural context of similar dagger blades from other short cists in Scotland, as well as similar blades from elsewhere in Britain, as discussed by Henshall (1968, 173–5).

Cist 3

Cist 3 (Illus 17) was discovered nine months after the first two in the garden of the adjacent property (Illus 9) and therefore the three cists were not all
seen in relation to one another. However, it was estimated that this cist was about five metres W of the first two. When discovered, the cover had been broken by the digger and the loose fragment of stone had been moved aside; otherwise it remained undisturbed.

The cist had been covered by a small cairn of small boulders set in pink clay, much of which survived around the cist and on the remains of the cover stone. The clay extended well beyond the edges of the cover stone. The digger driver who uncovered the cist commented on the quantities of boulders in this part of the site, when there were none elsewhere. The capstone measured approximately 1.3m long by 0.9m wide and was between 0.13m and 0.35m thick.

The cist was oriented E-W, 82°, was 0.6m deep from the underside of the capstone and measured internally 1.1m E-W by 0.6m N-S at the base, reduced to 0.45m at the top where the N side stone had collapsed inwards (Illus 17). After several cairn and packing stones, including edge paving, had been removed, a batten was inserted as a support for the sides to ensure they could not collapse further. A thick layer of clay had been used to level the tops of the side stones; it was particularly thick on the S side and it was clear that much of the clay used to seal the top of the cist had fallen into the interior, which was in unusually poor condition. In part this was a result of the recent earth moving, but also because the stones used were not of the high quality normal in most short cists. The N side stone had split vertically as had the W end stone. The E end stone was of soft white sandstone, now crumbling, while the S side was composite, made up of an inner stone 0.9m long and an outer stone 1.25m long.

The cist sat unevenly in its pit, surrounded by the many large packing stones. The edge of the grave-cut was oval, 1.17m E-W and 1.6m N-S, and was traced at approximately 0.2m from the side stones. Some of the fill of the grave pit was removed in order to examine the large packing.
stones, but substantial voids were encountered and thus, in order to avoid the collapse of the sides of the cists, the pit was not fully excavated.

The skeleton
The poorly preserved skeleton lay crouched on its left side with its head at the E end of the cist (Illus 17). Only small fragments of skull, six teeth, the incomplete long bones and fragmentary other bones survived. From the available evidence this was probably an adult male, but the general conditions did not allow a full study of the remains.

Artefacts
(SF1) A burnt flint scraper, 45mm by 31mm by 7mm, was found 0.5m SW of the cist, in the buried soil or beside the grave-cut (Illus 18).
(SF 2) No artefacts accompanied this skeleton, but behind the skull were the unidentifiable remains of a piece of decayed wood or perhaps bracken root, some 700mm by 30mm wide by 20mm (Illus 17).

The environment
Samples of soil were collected from all the cists. Those from Cists 1 and 2 at Dalgety Bay were found to be generally similar in range and state of preservation to the material from Upper Kenly (Whittington 1993). The pollens comprised mainly grasses, suggesting largely open countryside, with cultivation in the area, as well as waste or rough ground and alder and hazel in damper conditions. Unlike Upper Kenly, however, there were substantial quantities of meadowsweet (Filipendula) pollen grains in Dalgety Bay Cists 1 and 2, another indication of open grassland or meadow. The clay seal from Cists 1 and 2 proved sterile, but the soil samples from the floor of both contained a range of pollens of open land and rough ground (Whittington 1993, 212).

Four samples, two each from Cists 1 and 2, likewise included high concentrations of meadowsweet (Filipendula), large percentages of which are of immature pollen grains, which suggests they came from plants in the early stages of flowering (Whittington 1993, 213). As there was no pot in either cist, the explanation of the presence of the meadowsweet is that a bunch of meadowsweet flowers had been placed in each cist as a floral tribute. Meadowsweet flowers from May to August and it therefore appears probable that the burial took place in those months (Whittington 1993, 213).

Four samples from Cist 3 produced markedly different results. Although the range of pollens was similar to that in the other two cists, largely grasses (Poaceae) and meadowsweet (Filipendula), the percentages differed. In Cist 3 the meadowsweet or dropwort (Filipendula) represented 78% of the total pollens in Sample 2, 58% in Sample 3, 34% in Sample 4 and 78% in Sample 5, while grasses (Poaceae) formed 19%, 33%, 43%, and 10%, respec-
tively. A single unidentifiable cereal grain was identified in Sample 2.

Another difference between Dalgety Bay Cist 3 and the other two is the quantity of spores of bracken (*Pteridium aquilinum*) present, in Sample 2, 25%, Sample 3, 29%, Sample 5, 27%, but in Sample 4 the bracken spores amount to 80% of the total. Whittington points out that such high percentages imply substantial amounts of bracken spread in the grave, with some special arrangement in the Sample 4 area. In fact, Sample 4 was from the soil among the remains of the skull and so there might have been a 'pillow' of bracken in that area.

**Discussion**

The three Dalgety Bay cists conform to the recognised pattern of cist building, each cist of
Dalgety Bay it appeared to have served another function, namely to ensure that the cover stone was horizontal. At Belliston there was edge paving on the N side of the cist, and similar paving had been used all round Dalgety Bay, Cist 3, a feature noted at North Mains, for example, Burial C (Barclay 1983, 137).

The discovery of meadowsweet (Filipendula) pollen grains in substantial quantities in a number of cists in Scotland, as well as in the three at Dalgety Bay, has added another dimension to our understanding of short cist burials. Pollen has been used, for example, to suggest the presence of mead at Ashgrove, Fife (Dickson 1978, 108–13), a coarse bread at Beech Hill House, Perthshire (Tipping 1994, 138) or a food such as frumenty at North Mains, Perthshire (Bohnke 1983, 180), but there is increasing evidence that these pollens derive from meadowsweet (Filipendula) flowers placed in some cists (Tipping 1994, 138) as appears to be the case also at Dalgety Bay Cists 1 and 2 (Whittington 1993, 213), while the amount in Cist 3 was so great it can only mean that flowers were present (Whittington 1997 unpublished), probably a bunch of Filipendula flowers, placed as a tribute over the burial which seems to have been placed on a bed of bracken.

The suggestion has been made of a food deposit in certain cists, especially in cases such as Beech Hill House or at Sandfjord, Orkney (Bohnke 1983), where Spargula (spurrey) was found in quantity. Although the Brassicaceae pollens found at Belliston cannot be identified as to species (Whittington 1997), they have been accepted as contemporary with the deposit, although difficult to interpret in isolation. It is possible that the pollen represented a weed of cultivation, such as charlock and that even this could have been used for a 'ritual' bread. Otherwise it could have been included among plants spread on the cist floor or over the burial. Like Filipendula (meadowsweet), the Brassicaceae, including charlock, flower in early summer and so the Belliston burial would have been deposited at that time of year. There were no pollens in the samples from the Belliston Food Vessel, while the samples with pollens came from the soil below it.

Margaret Bruce reported that the amputation observed on the right tibia of the individual in Dalgety Bay, Cist 1 (Illus 11) appears to be the first case from Europe of amputation at this early date. There must be uncertainty about the interpretation of such an operation, since there is no way to tell whether it could have been for medical, religious or some other reason, such as following an accident or a fight. However, it highlights the technical skill used to physically carry out such an operation and presumably also knowledge of the medicinal properties of some plants both for medical and personal care. This would be essential
to enable the individual even for a short time to live without infection developing. Now that this case has been highlighted other examples may be found and in time it should be possible to establish whether this was an unusual event or not.

All the cists described in this paper belong to the same broad cultural traditions in which individual burial in a short cist or grave was common, sometimes singly and at others in a group or cemetery. Without radiocarbon dates there can be no precision about dating any of these burials, but dates between 1700 BC and 1450 BC can be postulated by comparison with Food Vessels (Simpson 1968, 197-211) on the one hand and with Scottish dagger graves on the other (Henshall 1968, 173-95). Among the daggers discussed by Henshall none is precisely like the one from Dalgety Bay. However, its size, form and composition as well as its horn hilt and organic sheath show that the dagger fits into this group.

From the pollen studies of samples from the cists discussed in this paper and from others researched in recent years (Whittington 1993, 1997; Tipping 1994) it appears that deposits of plants, as at Ashgrove (Henshall 1964; Dickson 1978), including bunches of flowers, as at North Mains (Bohnke 1983) and at Dalgety Bay, may be the norm rather than an unusual feature. Presence or absence of flower pollen could be a cultural trait, but it could also reflect burial at different times of the year, and different availability of flowers or bracken, as in summer or in winter.

Short cists are frequently discovered and excavated under rescue conditions, as in all the cases described in this paper, but these have, nevertheless, proved to be of importance, extending our understanding of short cists. Whether or not pollen-rich deposits in cists could ever be investigated in sufficient numbers to identify the presence of flowers as a cultural trait or as an indication of the time of year of the burial is doubtful, but it does seem now to be important to devise an improved sampling strategy, to identify the disposition of pollens within a cist as a method of establishing the presence and locations of the plants they represent, whether they had formed a bed for the burial or been a bunch of flowers placed over the burial as a tribute.

If samples were taken systematically from within a template, around and among the skeleton and near the edges of the cist, it might be possible to reach a better understanding of complete burial deposits, rather than highlighting small parts. Perhaps we are reaching a point where an unaccompanied crouched burial in a short cist can be understood in context, instead of being regarded as a poor relation.

References


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One of the Dalgety Bay cists has been reconstructed at the nearby shopping centre, with the assistance of Muir Homes Ltd, the Fife Council and Dalgety Bay Community Council.

Archive

Copies of field notes, photographs, drawings and of the report have been deposited with the National Monuments Record of Scotland.

All the specialist reports have been utilised to produce a summary incorporated into the relevant parts of the text. The complete reports, as listed below, have been deposited with a copy of the final report and the site archive at the N MRS.

1 Report on the skeletons from Dalgety Bay, by Margaret Bruce (anatomy) and N Kerr (dentitions) 1989.
2 The Pollens from Belliston Farm Cist, G Whittington 1997a and The pollens from Cist 3 Dalgety Bay 1997b (unpublished).

Abstract

The short cists burials reported here all reveal different aspects of the Early Bronze Age and each is important within the range of similar sites in Fife and elsewhere. At Upper Kentsy the cist contained a finely made, cord decorated bowl Food Vessel, the Belliston cist contained a small lugged, tripartite Food Vessel; at Dalgety Bay three cists were found to contain human remains. A young male in Cist 1 had survived an amputation; the burial in Cist 2, with a quartz pebble base, was accompanied by a bronze dagger, while in Cist 3, covered by a small cairn the burial had been placed on a bed of bracken and covered with meadowsweet flowers; a flint flake was found on the edge of the grave pit.

Key words: Bronze Age, cists, Food Vessel, dagger, meadowsweet, amputation