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Excavations in the Dairy Park, Dunrobin, Sutherland, 1977

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The Dairy Park is a low-lying coastal strip some 1,300 m long and a maximum of 160 m wide, which extends ENE from the town of Golspie to Dunrobin Castle. It is named after the Victorian dairy building at its NE end. This area is only some 5–6 m above sea level, though inland the ground rises steeply as a wooded slope to some 25 m OD. Geologically, the coastal strip is a raised beach and the subsoil consists of sand and gravel deposits. Although cultivated in the 18th and 19th centuries, the Dairy Park has in recent times been under grass until tractor ploughed in 1977.

A Pictish symbol stone was found on the 23 February 1977 by Messrs David Low and Graham Park while ploughing the Dairy Park. Realising they had found something unusual, they reported the find to Mr Peter Burd, who informed Mr N R Campbell the factor, and he notified the staff of the National Museum of Antiquities of Scotland who contacted the Department of the Environment. The stone had been found in an area not previously deep ploughed, so it was thought that excavation might throw some light on its context. It was known that two other symbol stones found in the vicinity had been used in the construction of cists.

The writer undertook a trial excavation for four days in March 1977, before the field was planted. Since there appeared to be a structure on the site, excavation was resumed for 2 weeks in the autumn. Unfortunately, due to an unusually late crop, it was not possible to return until the end of October when hours of daylight were restricted.

CUTTING 1: SYMBOL STONE, CAIRN AND LONG CIST

The symbol stone had been found towards the E end of the Dairy Park at NGR NC 847003 (fig 1). It had been dug out before our arrival, but the find spot was marked with a stake. Cutting 1 was therefore laid out directly over the spot where the stone was found. An area of stones and pebbles was found below the plough soil, defined to the N by a very crude kerb. In October Cutting 1 was greatly enlarged in alignment with this kerb; one corner of the original cutting can still be seen in the plan (fig 2).

At the end of the excavation a low rectangular cairn had been defined, which survived to a maximum height of 0·30 m (fig 2). Its original extent is calculated to have been around 9·50 m by 7 m. At about the centre of the cairn was a long cist grave, built in a pit dug into the natural subsoil, which at this point was gravel (level 6) above sand (level 7). The cist contained the extended inhumation of an adult female, head to the W, without grave goods (see Appendices 1 and 2). The cist, aligned ENE–WSW, was some 2·30 m long, 1 m wide and 0·60 m deep. It was

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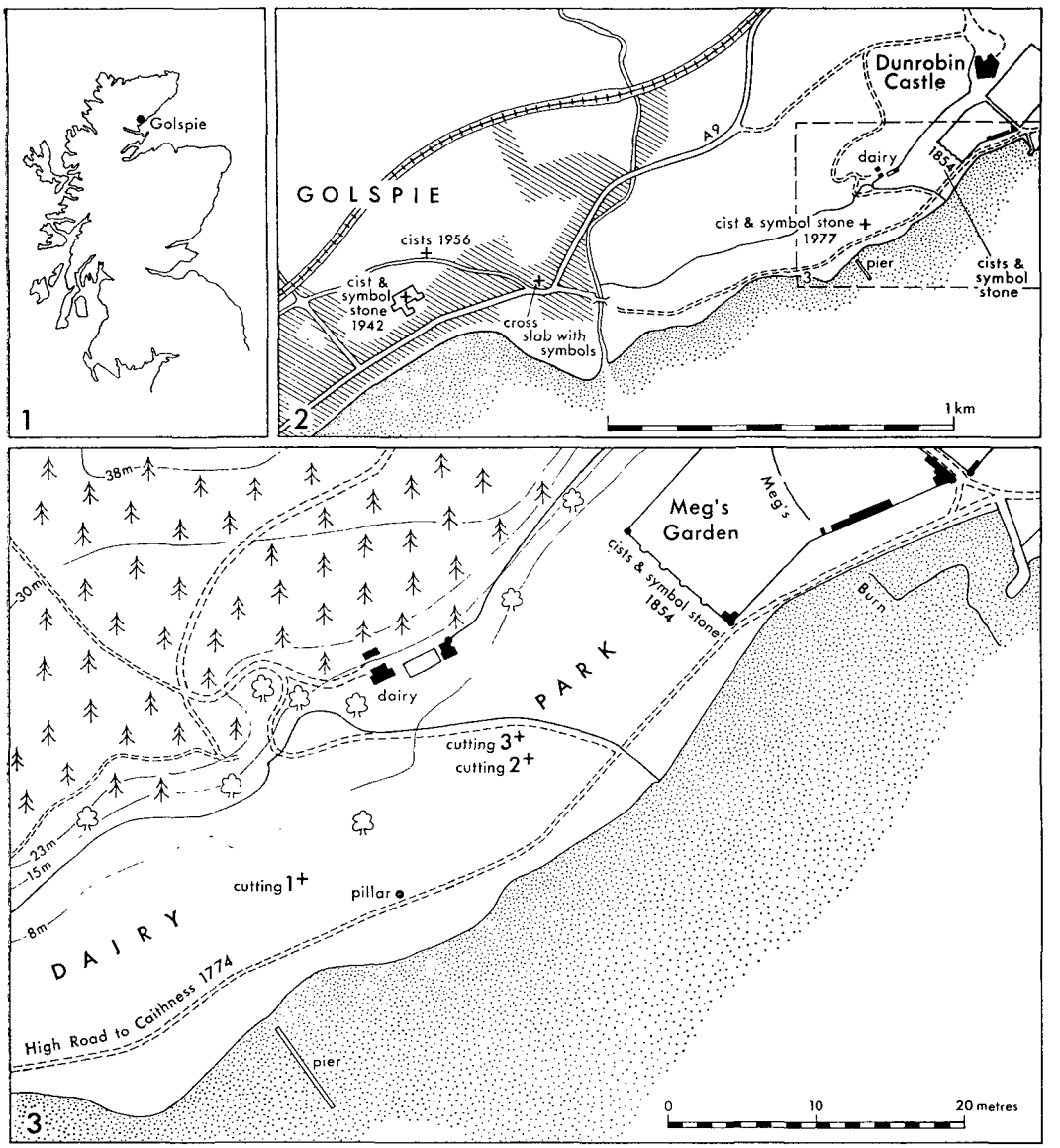


FIG 1 Dunrobin: location map (based on OS map: Crown copyright reserved)

walled and roofed with sandstone slabs while the floor was natural sand. The capstones, none of any great size, must have been laid in overlapping courses to cover the grave unless they were supported on wooden beams. When found, the capstones had partially collapsed into the grave, pushing over two side slabs and damaging the gravel wall on the S side. The collapsed side slabs can be seen on pl 17b. The cist was filled with a mixture of sand and gravel (level 5). The parts of the skeleton shown on the plan were plotted *in situ*, the rest lifted without measurement due to lack of time.

The cist and its capstones had been completely covered by a layer of clean yellow sand (level 2) which was the first element in the construction of the cairn. This sand lay immediately

on the natural gravel with no sign of a buried soil. It seems unlikely that no turf had existed, so perhaps it was stripped off before the cairn was built, and the turves added to the top of the cairn, though no sign of such turf construction survived. Above the sand was a thin level of pebbles (level 3) which had been destroyed over the central area of the cairn, but survived at the edges. The sand and pebble levels were bounded by a kerb of laid boulders to the N and W (pl 17a); it is to be presumed that a similar kerb to the E and S had been robbed away. Despite the missing kerb, the extent of the sand forming the basal level of the cairn appears to define its original extent. The existing kerb was irregular and incorporated both slabs and rounded boulders, mostly of sandstone, all readily obtainable on the adjacent beach. The better preserved stretches of kerb suggested it had been built in three parallel lines of slabs, each line pitched obliquely in the opposite direction to the next.

It is unlikely that the kerb or the whole cairn were ever much higher. The centre of the cairn had been badly damaged by ploughing, but even if the pebble level is projected back over the centre, it seems that the cairn stood only some 0·50–0·60 m high originally. No trace of a ditch around the cairn was found.

At the W end of the cairn, the cairn material was left *in situ*. However, E of the line X–Y on the plan (fig 2), the whole area was excavated down to natural gravel. No further burials were found. Outside the cairn to the W, S and E the top soil had been ploughed down to the natural gravel. To the N, the ground fell away, and the gravel was overlain by an area of rather dirty pale sand (level 4).

The approximate position in which the symbol stone was found is indicated on the plan (fig 2). It lay with the symbols downwards. The ploughmen thought it was unlikely that the plough had shifted the stone more than 1 or 2 ft (0·30–0·60 m). Near the S end of the symbol stone was a curious line of five flat slabs, laid with their N edges in a straight line, and with two further slabs laid on top as in a dry-stone wall. Two vertical stones, hatched on the plan, one 0·33 m high, were also incorporated. To the N of these slabs was a thicker patch of pebbling some 4 or 5 pebbles deep. The line seems too definite to be fortuitous. One explanation would be that it was a second line of kerbing of which the rest has been robbed away, and that the cairn was built in a stepped construction with a higher central portion retained by a low wall. Another explanation could be that this was some kind of support against which the symbol stone was propped up. However, absolutely no sign of a depression in the sand such as a heavy standing slab would make if erected was found on excavation. A round pit 0·50 m wide and 0·30 m deep, full of very loose black soil and pebbles, cut through the deep pebble layer, seemed to be a recent disturbance.

The position in which the symbol stone was found suggests it once stood upright on the mound, perhaps on the top of the mound, with the decorated side facing N, and at a later date fell down or was deliberately slighted. The stone is so large and heavy and the mound so slight, it is hard to see any reason for the stone being added to the mound at a later date. Moreover, carbon-14 determination on skeletal material from the cist has given a date for the burial which is in keeping with the generally accepted date for Class I symbol stones.

C14 dating was carried out at Glasgow by Dr Michael J Stenhouse. The dates are as follows: GU-1039. 1335 ± 40 BP, and GU-1039B (the same sample but with different, more reliable pretreatment) 1135 ± 100 BP. A weighted average of the two dates is 1290 ± 50 BP, or 1325 ± 50 using the 5730 half life; that is ad 660 ± 50 or ad 625 ± 50 (560–760, or 525–725 at two standard deviations). Given the fact that the association between the symbol stone and the cist burial cannot be proven, though it seems likely, and given the present uncertainty about the accuracy of C14 dates (Campbell, Baxter & Harkness 1978; Campbell, Baxter & Alcock 1979), it would

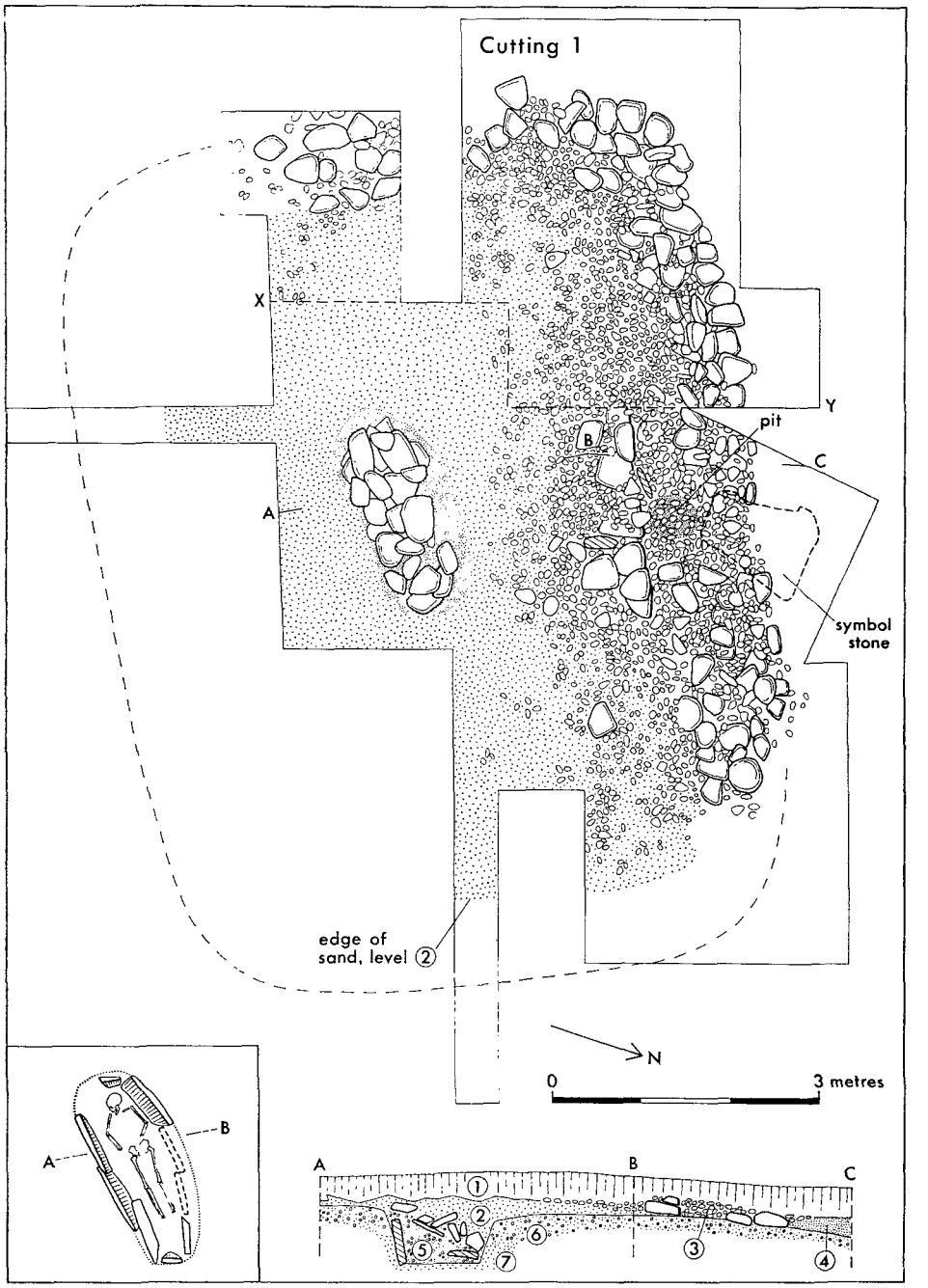


FIG 2 Dunrobin, cutting 1: cairn and long cist. The detail shows the cist after removal of capstones and fill

be foolhardy to claim that the C14 determination gives a date for the symbol stone. The importance of the C14 dates is that they show the date of the cist burial is fully compatable with the date range generally accepted for Class I symbol stones. The writer follows the dates suggested by Stevenson (1955, 111–2; 1958) in the late 7th or the 8th centuries AD; Henderson (1967, 127) argues for earlier in the 7th century. The very early dates proposed by Thomas (1961, 45–7) have not been accepted by either authority.

No artefacts were found stratified in the cairn, but a tiny sherd of medieval pottery was found on top of the pebbles (layer 3). A whetstone (fig 5, 5) broken at both ends, was found in the plough soil over the cairn; no date can be assigned to it. One of the sandstone slabs forming the S side of the cist grave has curious grooves on it (fig 5, 7). These are rounded in section, and cross each other more or less at right angles. Two parallel sets of grooves are 70 mm apart. A possible explanation is that these grooves are plough marks, and that the slab once lay just below the topsoil of a plough field and acquired these marks from several years of scratching by a metal ploughshare. It is certain that the marks got on the slab before it was incorporated in the grave.

THE SYMBOL STONE

The symbol stone (fig 3, 1 & pl 18a) is now in Dunrobin Castle Museum. It is a sea-smoothed slab of pink sandstone, probably collected off the beach, and used without further shaping. It is irregularly shaped, 1·20 m long, 1·05 m wide and 0·15 m thick; part of one side is missing. The symbols are carefully laid out on one face, but set slightly off-centre to the right, avoiding

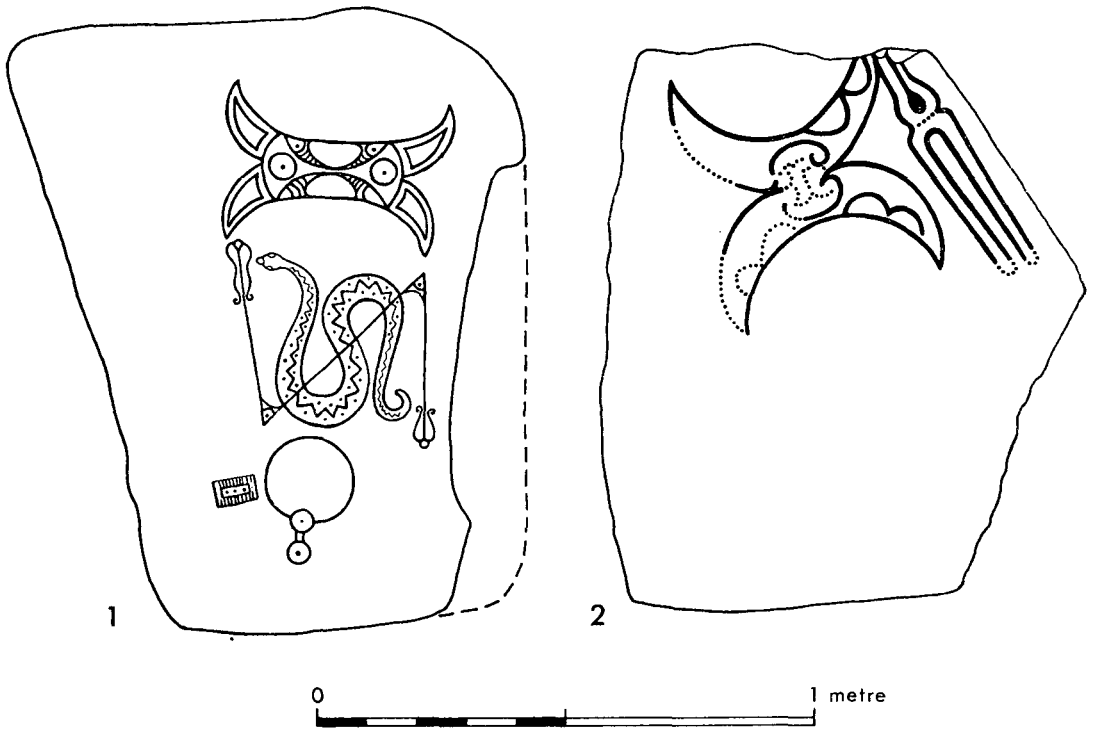


FIG 3 1 Symbol stone from Dunrobin, 1977 2 Symbol stone from Castle Hill, Kintore

an uneven area on the left side. The lines have been pecked into the stone, and the individual punch marks are still clear. Much of the design is in pristine condition, the only part that is substantially worn being the head of the snake. Natural solution hollows have pitted the face of the slab, and these small pits must not be confused with dots in the design.

At the top of the stone is a double crescent, its centre filled with a curvilinear design based on compass construction. Some of the smaller spaces are infilled with curved lines. Below this is an elegantly curved snake and Z-rod, the snake's body filled with a zig-zag line and dots. Both ends of the Z-rod have curvilinear terminals. At the bottom of the slab is a mirror and a double-sided comb, the teeth carefully drawn and the three dots on the central bar probably indicating rivets. The mirror and comb symbols are unusually near the bottom of the stone, the end of the mirror handle being only 18 cm from the lower edge of the slab.

The double crescent is a rare symbol. There are two examples on Class I stones, one from Castle Hill, Kintore, Aberdeenshire (Allen 1903, III, 174, fig 187) and the other from Newton of Lewesk, Aberdeenshire (Ritchie 1916, 283, fig 4); and one on a Class II cross-slab with both incised and relief decoration from Ulbster, Caithness (Allen 1903, III, 33–5, fig 30A). All these double crescents have a central motif. The double crescent on the Kintore stone is illustrated by Allen as lopsided. This stone is of coarse granite and the left side is very worn. Close examination has shown that the double crescent is symmetrical, though details of the internal pattern cannot be made out clearly (fig 3, 2). The second symbol, listed by Allen as a 'tuning fork', is a pair of tongs.

The snake and Z-rod is a more common symbol, there being five other Class I examples and six Class II, all listed by Allen (1903, II, 78) except for an unpublished Class I stone found at Tillytarmont in 1974; while the snake symbol also occurs without the Z-rod. No other snake symbol on a Class I stone has a zig-zag infill, though that from Newton in the Garioch has scales (Allen 1903, III, fig 193); but one of the pair of intertwined snakes on the 'Golspie' cross-slab also bears zig-zag decoration (Henderson 1967, 128, fig 26; see also Close-Brooks 1975, 210 for the provenance of this stone).

Thomas (1963, 51–2) has shown there are two primary forms of the Z-rod. The Z-rod with two curvilinear terminals as on the Dairy Park stone is associated typically with the snake and the notched rectangle symbols. The Z-rod which occurs with the double disc symbol has one different terminal. This end has a spearhead point, and a series of hooks or streamers on the shaft. Henderson (1958, 50) calls this a flame terminal. The correct form of the opposite end is less certain. Henderson (1958, 50, note 2, fig 1) suggests the correct version is that with a second spear point terminal backed by tight spirals as incised on the terminal ring of a silver chain from Whitecleugh, Lanarkshire. An almost identical Z-rod occurs on the two silver plaques and on a handpin from Norrie's Law, Fife (Henderson 1967, pls 16, 18). However, on the stones the proper form of the second terminal appears to be curvilinear. Despite the frequency of the double disc and Z-rod symbol, early or correct versions are curiously difficult to identify. In some cases the stones are broken at the edges and the terminals missing, but in all the instances where there is no other evidence of late or devolved form, the second terminal has a disc end backed by drooping spirals. Among the examples are those at Kintore, Aberdeenshire, and Dingwall, Ross-shire (Allen 1903, III, figs 186, 55). This disc-ended terminal may be nearer the correct form than the spear point terminal found on metalwork. In either case, there is a clear distinction between a Z-rod with one flame terminal and a Z-rod with two curivlinear terminals as on the Dairy Park stone. On later stones the distinction between the two forms of Z-rod and their association with different symbols is lost.

Stevenson (1955, 104; 1970, 66–7), and Henderson (1958, 50–3) have argued that it is

possible to recognise correct or prototype versions of Pictish symbols, which are chronologically the earliest. Deviation from the correct form of symbol can be equated with lateness in time; and this is certainly borne out by the highly devolved symbols on the later Pictish cross slabs. The Dairy Park stone should be early in the series of symbol stones, for the forms of both double crescent, and snake and Z-rod have the appearance of being more accurate than any others yet known to us. The stone also has the most accurate rendering of a double-sided comb. It is intriguing to find another early stone in an area Henderson has described as the origin centre of the Pictish symbol stones.

DISCUSSION

The new symbol stone from the Dairy Park is assumed, in the following discussion, to have been associated with the burial of the woman in the long cist and to have originally stood erect over her cairn. It has already been said that no socket for the slab was identified so this assumption is based on circumstantial evidence only.

Two Class I symbol stones have been found near the Dairy Park (fig 1) and several others some 5 km W on Little Ferry Links. The Dunrobin slab (see Appendix 3) was found in 1854 and formed the capstone to a cist containing (apparently) two skeletons of adult men and a corroded iron object. The latter is illustrated in fig 5, 6 (NMAS cat no IL 209). It is either a ferrule, or the socket for some tool or weapon, such as a spear or sickle, of which the blade has decayed. Since the skeletons and the iron object were collected by the workmen, too much stress should not be laid on their association. The fragmentary and badly decayed second skeleton may really have come from another grave. It is unlikely that the grave is Viking, though it has been listed as such (Greig 1940, 17), for Viking graves normally contain distinctive objects. The presence of a second long cist and the report that the workmen had discovered others in the area suggests this was part of a Christian long cist cemetery, similar to those more familiar in southern Scotland (Henshall 1956). The symbol stone used as a capstone was probably found on the spot; with many suitable slabs on the beach it is unlikely to have been brought from far afield, for instance from the vicinity of the new Dairy Park stone.

The symbol stone found at Golspie in 1942 lay across an irregularly shaped short cist. Davidson (1943) argued that it was not the original capstone. All three slabs, Golspie, Dunrobin 1854 and Dunrobin 1977, bear mirror and comb symbols and all are early in the series. The relationship of these three stones, all perhaps originally erected over graves, to any contemporary settlement can only only be guessed at. The fragments of clay moulds occurring in another cist at Golspie (Woodham 1956) suggest a Dark Age settlement close by, but the moulds cannot be dated closely. The name, Dunrobin, suggests the presence of a fortified settlement on the prominent knoll now crowned by Dunrobin Castle, and the graves found in 1854 might be connected with this settlement. However, the Dairy Park stone need not necessarily indicate a further settlement. It is possible that some Pictish stones (and thus the graves, if any, that they belonged to) were set beside highways.

A position on or near the main road N which linked Golspie and Dunrobin suits the alignment of the Dairy Park cairn very well. The coastal road is now only a grassy track, for in the 19th century the Duke of Sutherland diverted the main road to run N of Dunrobin Castle. Yet up till then this track was the most important and indeed the only land route to the far N of Scotland. All travellers north must have passed along it, though it was not a convenient route, involving several ferry crossings over the mouths of deep firths. On Kirk's map of the Sutherland estates in 1774 this route is labelled 'High road to Caithness'. The coastal plain here

is narrow, so the road can never have deviated far from its present course. Air photographs, taken when the Dairy Park was under grass, show two or three linear features running more or less in alignment with the present track, which can most plausibly be explained as earlier roads. If it is ever possible to obtain air photographs of this area under a favourable crop perhaps it will be possible to see further cairns along part of the route.

The Dairy Park excavations have demonstrated the association of a long cist grave with a long rectangular cairn and with a symbol stone. Further examples, many of them recent discoveries, both of the possible association of symbol stones with burials, and of long cist burials with cairns round or rectangular are discussed in the following paper (Ashmore 1980) and need not be listed here. The closest parallel for the Golspie cairn and long cist is the largest of the group of cairns at Ackergill, Caithness excavated in 1926 and 1927 (Edwards 1927; 1928). This cairn was some 20 ft long by 13 ft 6 in wide (6·10 m by 4·10 m). Many details of the construction on the two sites differ; thus at Ackergill the kerbs of the cairns were more carefully constructed, either with slabs placed on their sides or with dry-stone walls, while the corners were marked with pillar stones, and the cists in many cases were constructed within the body of the cairn, not below it. Nevertheless the general similarity is striking.

The slab with symbols and three warriors from Birsay, Orkney has often been quoted as an example of a symbol stone found with a grave; in this case a triple grave. However, it now seems that this slab was not found near the triple grave but in a different part of the graveyard (I am grateful to Mrs C Curle for this information based on the foreman's notebooks).

Ashmore (1980) lists three or four instances of symbol stones possibly or probably associated with burial cairns. Together with the evidence from the Dairy Park, this suggests that at least some symbol stones were erected as grave markers. Moreover, the clustering of symbol stones that might be expected if the stones marked burials can now be seen at Tillytarmont and, to a lesser extent, at Rhynie. For the moment, then, this explanation must carry more weight than the current alternative interpretations as territorial boundary markers (Henderson 1971, 66) or as stones erected to record political alliances between lineages in a matrilineal, polygynous society (Jackson 1971). Not all symbol stones were necessarily erected for the same purpose. In particular, it has yet to be shown that Class II monuments, that is cross-slabs with symbols, have any direct connection with burials.

Unfortunately little new light is cast on the interpretation of the symbols themselves. It is of course most satisfactory to find a stone with mirror and comb symbols associated with the burial of a woman. It has long been recognised that the mirror and comb, or mirror symbol was different in kind to the other symbols, and was sometimes added to them. Otherwise, apart from single animal symbols, Class I stones almost invariably bear only two symbols, always different, to which the mirror, or mirror and comb, might be added. Class II stones have symbols normally in multiples of two, again with the mirror and comb, if present, as an extra. (The hammer and anvil symbol, occurring only on one Class I stone at Abernethy, and one Class II stone at Dunfallandy (Allen 1903, 282, 286–9) may be a similar additional symbol). The association of the mirror or mirror and comb symbols with burials makes it likely that this symbol denotes that the deceased was a woman of rank, rather than referring to the giving of bride wealth, as Jackson (1971) suggested. Thomas' suggestion (1963) that the mirror and comb symbol denoted that a slab was erected by a woman, not for a woman, now appears to be incorrect; his ensuing explicit assumption that symbol stones were erected to commemorate male Picts only (Thomas 1963, 75) never seemed plausible and may now be discounted.

If the symbol stones are grave markers, either of two current theories as to their purpose could be correct. Jackson (1971) has suggested they are the symbols of different lineages in a

society with matrilineal succession. Thomas (1963) and Stevenson (1970 and pers comm) favour interpretations of the symbols as indications of an individual's rank or allegiance in the community, though in detail their interpretations differ. Both theories are compatible with the use of the stones to mark graves, though Jackson's idea that the stones were erected to record alliances, often marriage alliances, needs modification. Rather than being symbols of a husband and wife, one of whom is buried in the grave, the symbols would perhaps refer to the mother and father of the deceased. Indeed, the extraordinary consistency with which the symbols occur in pairs does seem to support an explanation involving genealogy rather than rank.

CUTTING 2: CORN-DRYING KILN

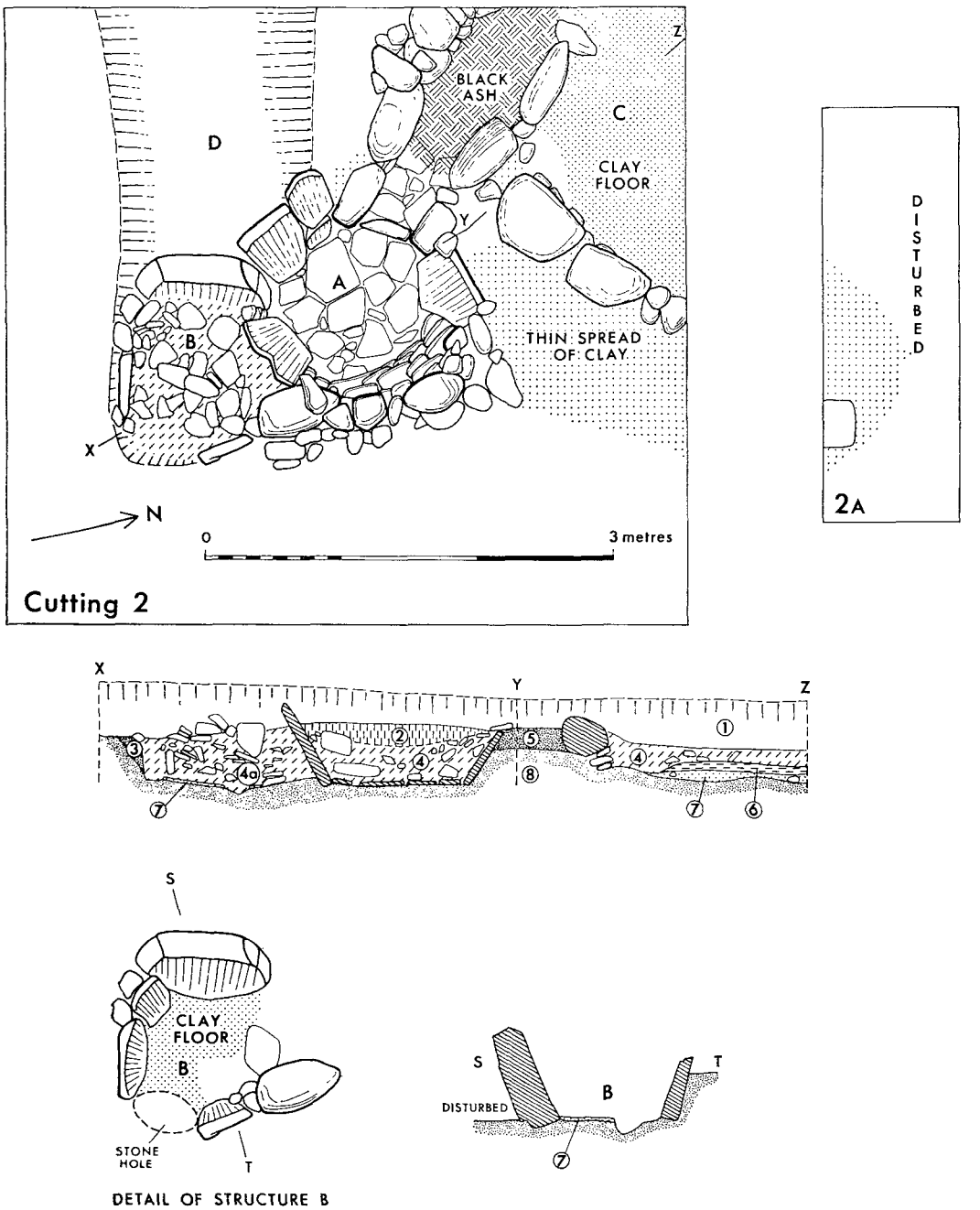
This site is at the E end of the Dairy Park, some 60 m from the sea, at NGR NE 848004 (fig 1). Stones were struck while ploughing in August 1977, and an attempt to remove them showed that they seemed to form part of a structure. This area of the field was therefore left unplanted so the new find could be investigated in the autumn.

In October, a large stone which eventually proved to be the N end of kiln B was visible together with a few others, and looked very like part of a short cist. Since the stones had to be moved to allow cultivation it was decided to investigate the structure.

The results of excavation are shown in fig 4 and pl 18b. The natural subsoil is sand (level 8). The earliest feature on the site is the shallow, flat-bottomed gully D. The stretch uncovered was some 3·30 m long, 1·60 m wide, 0·27 m deep, and filled with light brown sand with some greyer, apparently ashy, patches near the edges (level 3). Included in the fill were ten lumps of iron slag, including two furnace bottoms. No date could be assigned to this gully, but it was earlier than the corn kiln which cut through its SE end. Extensive ironworking in the vicinity was attested by the large quantity of iron slag found all over the ploughed area between the isolated tree E of Cutting 1 and the fence E of Cutting 2. Bottle-glass was scattered over the same area (fig 1).

Structures A and C were connected. C was the corner of a stone structure, presumably rectangular, which ran out through the NW side of Cutting 2, into a newly planted crop which prevented further investigation. Cutting 2A was laid out in an attempt to find the W wall of the structure. Unfortunately some major disturbance involving a great deal of clean sand (possibly a rabbit warren) had occurred in this trench. A small undisturbed area had a thin spread of yellow clay over the natural sand, equivalent to the stratigraphy outside structure C in Cutting 2, showing that the E wall of the structure lay under the baulk, which there was not time to remove. The internal width of structure 2 was thus little more than the 1·20 m we excavated, but the length is unknown. The S wall of C was composed of large boulders placed on the natural sand with a row of smaller stones, set in yellow clay, packed under the inner edge. The floor was slightly sunk into the sand and covered with a thick layer of yellow clay (level 7). On the floor was a thin occupation level of dark soil (level 6).

Against the W wall was built a flue and fire chamber 2 m long and about 0·50 m wide leading out of the corner of the building into a kiln. The flue was also sunk into the sand, and its walls stood to a height of 0·40 m. It must have been roofed with flat slabs, but none remained *in situ*. The fire had been lit within the building at the outer end of the flue, where the stones at the side of the flue were heavily burnt, and there was a deposit of black soil and ash. A section across this showed 2 cm of black soil above a thin yellow clay band, probably a reflooring, and below this 2 cm of black soil above a much thicker clay floor, up to 7 cm thick in the centre. Below this the natural sand was reddened to a depth of 10 cm. Only the inner end



DETAIL OF STRUCTURE B

FIG 4 Dunrobin, cutting 2: the corn kiln and other structures

of the flue channel leading to the kiln was paved. A sill stone divided the flue from the kiln chamber.

When structure C went out of use it was filled, as was A, with a mixture of stones, dark soil and large lumps of yellow clay (level 4), the stone fill being particularly dense near the E wall. In this fill was found the glass bottle base 3 and a number of fragments of glass bottles, several of which joined the bottle base 1 found in kiln A (fig 5). The sherd 8 was found in the clay binding under one of the large blocks in the S wall.

A thin spread of yellow clay overlay the natural sand to the S of structure C. This may represent clay binding washed out from the wall, or clay deposited during the building phase. On top of this clay were some areas of dirty sand, which became especially deep in the angle between the kiln, the flue and the corner of structure C (level 5).

The kiln chamber A was sunk in the ground and was constructed partly with dry-stone walling, partly with thin slabs set on edge. All the walls leaned outwards but it seemed that some of the slabs had got pushed outwards at the top rather further than they had been originally. The slabs and the walling were laid straight against the natural sand. Some 20–30 cm of the wall projected above the sand, but may have been supported originally by topsoil or turf. The kiln walls were standing to a maximum of 60 cm above the floor, which appears to be the full original height. The kiln was 1·50 m in diameter at the top, 1 m at the base. The floor was paved with slabs lying on the sand, and these had been covered with a thin yellow clay floor. When the kiln went out of use it had been filled with dark soil, stones and patches of yellow clay (level 4), with a level of dark soil above that (level 2). In the stony fill was the glass bottle base 1 and other glass fragments.

Kiln A was built up against a further structure B. This was a puzzling feature, subrectangular in plan, built entirely with various slabs set on edge and leaning slightly outwards, one slab being much taller than all the others. Another slab, represented by a stone hole, was probably a recent loss. The structure was about 1·10 m long by 1 m wide at the top, 0·80 m by 0·80 m at floor level, and a maximum of 0·70 m deep. It had a yellow clay floor (level 7), which was damaged on the E side. The very large stone forming its NW end had been hit by the plough in August 1977 and a hole had been dug behind it to try to move it, before it was discovered to be part of a structure. Possibly structure B was also the chamber of a kiln with a flue on the E side, but its sides would have had to be built up level with dry-stone walling to take the necessary cross timbers. Its relationship to kiln A is uncertain, but it was probably an earlier structure, which was partly incorporated in the later work. Figure 3 shows the surviving portion of structure B. When kiln B went out of use it was filled with dark soil, stones, and lumps of yellow clay (level 4a). No glass fragments were found in the fill, but there were a few pieces of iron slag and part of a sheep's skull. Against this filling was placed a large sloping slab with a neat patch of dry-stone masonry each side of it, to complete the circuit of kiln A (fig 4, 2). This blocking is shown *in situ* in pl 18b. Finally, when the whole structure went out of use kiln A, the flue and the adjoining structure C were all filled with stones and soil, and in this fill were incorporated the remains of 18th-century glass bottles. At the present time the structures are covered by some 20–30 cm of plough soil (level 1).

THE FINDS

1 Base of bottle, olive green glass. Max diam 14 cm. The base itself came from structure C, some joining fragments from kiln A, level 4. Fig 5, 3.

2 Fragments from the shoulder of a bottle, olive green glass. From structure C, level 4. Fig 5, 1.

3 Base of bottle, olive green glass. Max diam preserved 12 cm. From kiln A, level 4. Fig 5, 2.

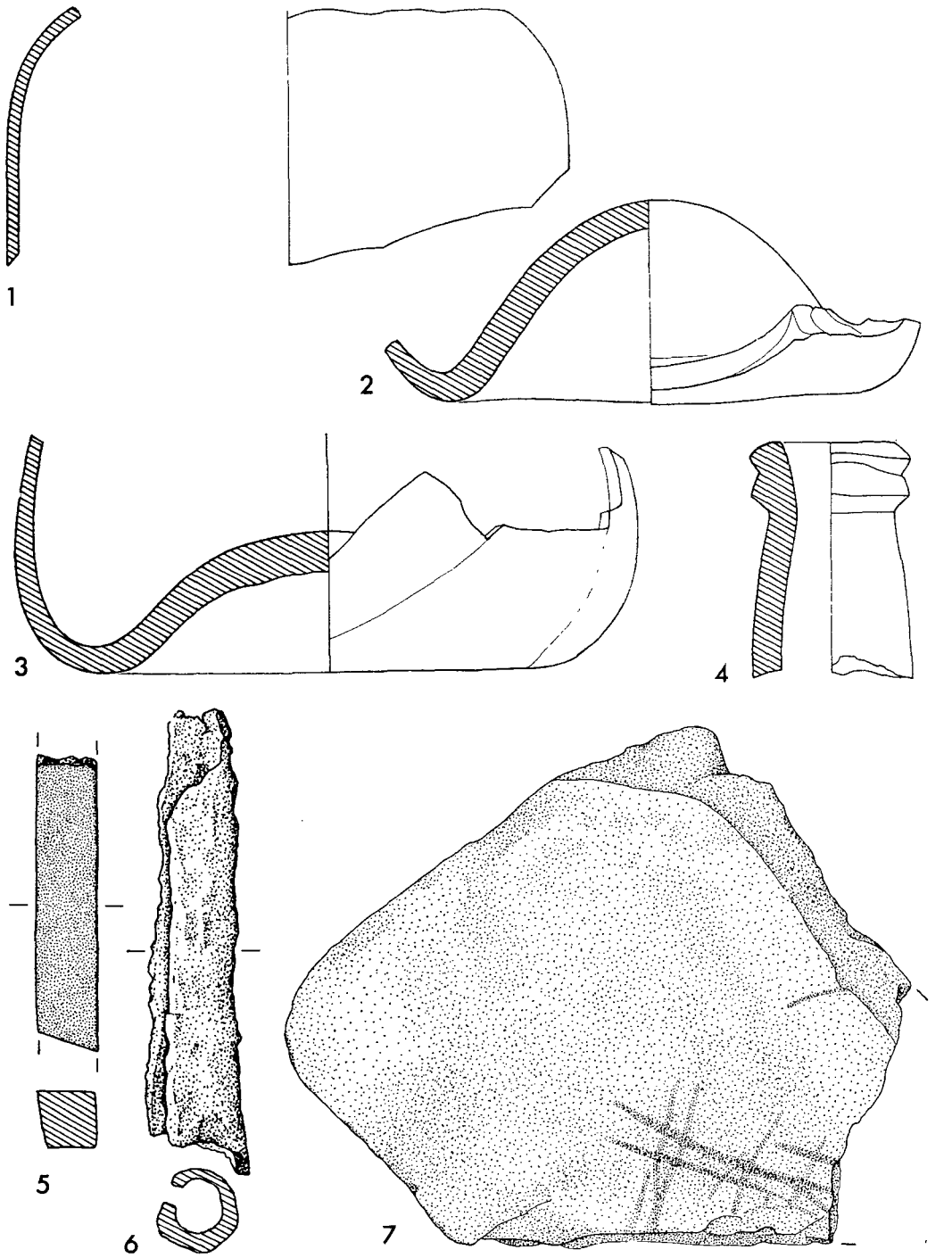


FIG 5 Dunrobin, artefacts: 1–4 glass, cutting 2; 5 stone, cutting 1; 6 iron, 1854 long cist; (1–6 scale 2 : 3). 7 stone slab from cist, cutting 1 (scale 1 : 6)

4 Twelve small fragments of olive green bottle glass. From kiln A, level 4.
6 Five fragments of olive green bottle glass. From structure C, level 4.
7 Neck of bottle in olive green glass. From plough soil. Fig 5, 4.
8 Small sherd of medieval pottery, wheel thrown, buff coloured with trace of yellowish glaze at one corner. From the wall footings of structure C.
9 Tiny sherd of medieval pottery, whitish fabric, from plough soil.
10 Iron slag. Two furnace bottoms measuring 20 cm across, eight pieces between 8 and 14 cm long and a few smaller pieces. From gully D.

The bottle base no 3, and the whetstone from Cutting 1 are in Dunrobin Castle Museum; the rest of the finds in the National Museum of Antiquities of Scotland.

The date of the corn kiln can be estimated from the fragmentary glass-bottles incorporated in the fill when it went out of use. The bottom-base 1 may be compared with Hume's nos 5–6, 8–10 (Hume 1961, figs 3–4), suggesting a date between 1690 and 1730. The deeper kick of bottle-base 3 is more similar to Hume's no 11, about 1710–30. Allowing for the difficulty of dating incomplete bottles, it seems reasonable to suggest the corn-kiln was abandoned during the first half of the 18th century. Depending how long such a building lasted, it may have been constructed in the late 17th or early 18th century. The structure is not shown on the estate maps prepared by John Kirk in 1777, which depict individual buildings and even trees, but show the whole area of the Dairy Park as under cultivation.

DISCUSSION

The structure is interpreted as a corn drying kiln on the basis of its similarity to other kilns of this kind, though no actual remains of burnt grain or straw were found on it. The way in which such kilns were used is well known (Fenton 1970). Wooden bars were laid across the bowl of the kiln, smaller sticks across the bars, straw on these sticks and then the grain was spread on the straw. The fire was lit at the mouth of the flue and the hot air conducted into the bowl dried the grain. Early accounts emphasise the risk of accidents, for the straw and grain often caught fire.

While corn kilns are widely known, either inside barns or attached to barns, or as isolated structures dug into hillsides, surprisingly few early examples seem to have been illustrated. Fenton (1974) has collected the available evidence. The only direct comparisons for the round kiln leading from a barn at Dunrobin seem to be the 14th- or 15th-century kilns found at Jarlshof by Hamilton (Fenton 1974, 248–9) and a 14th-century structure in Iceland (Fenton 1974, 149–50). The same principle can however be seen in the more elaborate modern kilns of Orkney and Shetland with round kilns attached to a barn, and high stone super-structures above the kiln. This lack of comparative evidence makes it somewhat difficult to interpret the Golspie kiln in detail.

Structure C was probably a barn, perhaps of simple cruck structure, which protected the sacks of grain, the fuel and the man stoking the fire. There is a possibility, however, because of the rather flimsy wall footing of C, that this was simply an open area delineated by a low wall.

The flue, originally slab-roofed, led out through the wall of C into the kiln chamber A. This may have been protected by a light cone-shaped roof of timber and straw, as described by Gailey (1970, 57, 60) or just left open. Grain could not have been fed into the kiln from within the barn, but a man must have stood outside to load and unload the kiln. This differs from the practice in the more recent Orkney kilns where the grain can be loaded from inside the barn, or from the Outer Isles where the whole kiln structure is inside the barn.

No parallel has been found for structure B which may be the remains of an earlier kiln.

Mr Stuart Maxwell has drawn my attention to a letter written by James, Lord Drummond, afterwards 4th Earl of Perth, in 1672, which mentions 'latly near Drummond . . . two countrey men intending to build a new kiln for corn on the site of an old oregrown one, and searching deep to lay its fundation . . .' (Fraser 1885, 130).

Kiln A, 1·50 m in diam and 0·60 m high, is quite small compared with some other examples. A kiln 2·40 m in diameter, 2·80 m high at Craignavar, Perthshire, was recorded by Feachem (1957, 45–51). Kiln A, however, compares closely with the bowl of a kiln recorded by Whitaker (1957) on Benbecula. It seems likely that the Dunrobin kiln is representative of a number of small local kilns, perhaps one on each farm, that must have been in use in Easter Ross before the agricultural improvements that began in the eighteenth century. Such a situation, when each farm (or in the Western Isles each township), had its own kiln, is recorded by Headrick (1807, 309–14) and in early accounts quoted by Feachem (1959, 49–50).

No structures are shown in this area of the Dairy Park on the 1777 estate map, where the whole area is apparently under cultivation. The corn kiln must belong to an earlier agricultural pattern, and in this part of the estate close to the Castle it is likely it was on demesne land. Professor R J Adam has kindly looked for some mention in the Dunrobin archives but with no success.

A corn-drying kiln at Tain in Easter Ross excavated in 1974 (Wedderburn 1974) was 2 m in diameter, 1 m high, stone built and clay-lined, with a flue 1 m or more long. In the absence of a published plan and section, it is difficult to know how closely it resembles the Golspie kiln. A number of kilns are reported to exist in the sides of the valleys running back from the sea near Golspie, for instance at Helmsdale, but none of these have been excavated (information from Miss M Morrison). Fairhurst (1968, 152) notes the remains of seven corn-drying kilns in the deserted township of Rosal, Strath Naver, Sutherland, of which one was excavated. Like all the others at Rosal, it was built within a kiln house, in this case an oval structure about 5·20 m long by 2·10 m wide. The bowl of the kiln was about 1·20 m in diameter by about 1·20 m deep. No plan of the kiln house is given. The Rosal kilns seem to be of a different type to the Dunrobin kiln which projected outside the kiln barn, but not very different in size.

CUTTING 3

Messrs Low and Park reported hitting further large stones when ploughing N of Cutting 2. Cutting 3, which measured 3 m by 2 m was an exploratory trench to see if these stones belonged to an ancient feature. When the plough soil was removed the eastern three-quarters of the trench was found to be filled with a roughly levelled mass of broken up mortar with stones and beach pebbles set in it. This mortar was probably not modern; it compared closely with the mortar used in a now ruinous gate pillar shown on the 1907 edition of the 6″ OS map, but of earlier construction. The W end of the trench had sand below the plough soil, with three large boulders in the SW corner. The cutting was cleaned up and a record photograph taken, but no further excavation was undertaken. It is possible this feature is in some way connected with the Artillery Volunteers' Battery shown on the 1879 1st ed 6″ OS map, though the main structures belonging to this were by the sea.

APPENDIX 1

The human remains from the long cist in the Dairy Park

Mary Harman

The skeleton is largely complete; the condition of the bones varies considerably, those that were under collapsed cist stones being less well preserved than others; the skull, upper vertebrae and parts of

the arms are in very good condition, while the lower thorax and pelvis, lower right arm, legs and feet are badly eroded or altogether decayed.

The small size and the light build of the bones suggest that the skeleton is that of a female; the lack of brow ridges and heavy muscular attachments on the skull and the wide angle of the sciatic notch accompanied by a well defined, pre-auricular sulcus, support this. The height, calculated from the total lengths of the humerus, femur and tibia using the regression formulae of Trotter and Glesser (given in Brothwell 1965, 69, 102), is 5 ft 1 in (155·3 cm).

Not all the bones are well enough preserved to show signs of lesions, but of those available for inspection, cervical vertebrae 5, 6 and 7, and lumbar vertebrae 5 and the sacrum show slight evidence of osteo-arthritis in the form of small bony excrescences round the margin of the vertebral bodies and a deterioration in the articular surface of the body. The left ankle appears to be normal, but on the right there is considerable extra bony growth round the articular surfaces of the distal ends of both tibia and fibula, and on the talus and calcaneum. Radiographs of both ankles were taken by Dr N T Speirs who considers that 'there are definite osteo-arthritic changes at the margins of the articular surface of the right tibia with more irregularity of the tibial articular surface. The talus too on this side shows some osteo-arthritic changes, especially round the peroneal groove, when compared with the left side. On the normal left side I note that there are two growth lines at 4½ cm and 6 cm above the ankle joint which would indicate a period of several weeks ill-health in childhood'.

Some resemblances can be seen to the small group of people of the same period from the Ackergill cairns, described by Bryce (1926 and 1927). Dental health was good among them, apart from one man of 'advanced age'; though this is not exceptional in an early population. The small stature is interesting but in the Ackergill group may possibly be a family characteristic.

APPENDIX 2

The dentition from the long cist in the Dairy Park

Dorothy A Lunt, Department of Oral Biology, University of Glasgow Dental School

With one exception, all 32 permanent teeth were in normal functional positions at death. They are arranged in well-formed arches with minimal crowding in the incisor regions, and the occlusion appears to be normal.

The degree of attrition is exactly comparable to that reached by age 36–38 in the roughly contemporary Anglo-Saxons studied by Miles (1963). In this case, a probable age at death of c 35–40 may be suggested.

Both upper third molars show a marked hypoplasia groove on their buccal surfaces, and the hypoplasia has been sufficiently severe to produce small brown-stained pits. A corresponding hypoplasia groove on the lower left third molar has been partly removed by attrition, and that of the lower right third molar is less marked than in the other teeth. The position of the hypoplasia grooves suggests that the individual probably suffered either from severe malnutrition or from some illness at about 11 or 12 years old.

A small defect at the cervical margin on the labial surface of the lower left central incisor may be due to caries, but it could also be the result of post-mortem erosion: areas of definite post-mortem erosion can be seen at the necks of other teeth in both jaws. No other carious lesions are present.

There is a slight to moderate horizontal resorption of the alveolar bone. In the upper jaw, this alveolar recession is most marked in the molar areas, where infected periodontal pockets are just beginning to appear. In the lower jaw this process is further advanced and a definite pocket has formed round the lower right third molar. Periodontal disease has therefore started, and is almost to be expected in view of the probable age at death.

An even more serious pathological condition is present in the area of the lower left second molar. The tooth itself is represented only by a small fragment of root and crown. The root shows gross resorption and this indicates persistent infection around it. The fragment of crown is worn down to the neck of the tooth, exposing the pulp, and the angle of the worn surface is completely abnormal. The normal shape of the tooth socket has been lost, there is evidence here of infection, and the cavity in the bone is best regarded as a chronic abscess or dental cyst cavity. What has led to this state of affairs is difficult to determine. Obviously part of the tooth has been lost and the remainder has undergone

excessive wear but the cause of the destruction of the tooth is unclear. Trauma by itself seems a little unlikely so far back in the mouth, especially as the adjacent and opposing teeth appear to be undamaged. Caries could have been involved, though neither the molar fragment nor the adjacent molars show any evidence of caries. Whatever happened to the tooth did not occur until it had produced quite normal wear facets on the neighbouring molars, and a fair amount of wear of the opposing upper molar.

Bilateral thickenings of the lingual alveolar bone in the region of the lower premolars and first molars are just sufficiently pronounced to be called tori mandibulares. These have been observed in other skulls of similar period in the N of Scotland. There is however no evidence of a torus palatinus.

APPENDIX 3

The long cist graves and symbol stone found at Dunrobin in 1854

J B Kenworthy, Department of Archaeology, St Salvator's College, University of St Andrews

When a new symbol stone was found in the Dairy Park at Dunrobin in 1977, the exact find spot of the symbol stone discovered covering a long cist in 1854 was of immediate interest. Surprisingly, examination of the records left this in doubt. Ross (1854, 297) had actually seen the grave, and a second long cist was opened in his presence.

> I accompanied Mr Gunn to examine an old grave which had recently been opened, in the progress of the improvements now going on to the west of the new garden at Dunrobin.

Allen (1903, 42) states that 'the symbol stone was found in 1854 on the 50′ contour line, ½ mile E of Dunrobin Castle'. The Archaeology Division of the Ordnance Survey could not resolve this contradiction, so the precise location remained uncertain. Dr Close-Brooks mentioned this problem and it occurred to me that the solution lay in relevant letters in the letter books of the Spalding Club, held in Aberdeen University Library. I am grateful to Mr Colin McLaren, University Archivist, for his help and for permission to publish these letters.

In the sixth volume of the letter books there are four letters about the find and a memorandum by A H Rhind, of which the first two letters are here transcribed:

Aberdeen University Library MS 606.6 (Letter Book of the Spalding Club No 6, no numbers)

Duke of Sutherland to John Stuart

London May 31, 1854

Sir

I have thought that the accompanying letters and report and drawing, relating to an old grave from Mr Gunn, and from Dr Ross of Golspie who was requested to examine the grave and the skeleton found in it, to ascertain if any opinion could be formed regarding the length of time since they were laid, may be interesting to you, and for the Spalding Club.

The field in which they were found is between a long range of rising ground, now planted pleasure ground and the Sea – Flower and Kitchen garden occupy a considerable part of the level ground – and the grave was found near the garden.

Dear Sir
very truly yours
Sutherland.

George Gunn to Duke of Sutherland.

Rhives May 17, 1854.

My Lord Duke,

When levelling the east part of the field below the Castle Dairy, the workmen discovered 6 paces west from the new wall of Meg's Garden, a grave containing a human skeleton – the bones true and regular as when the body was placed – they measured six feet – the teeth perfect and white as if they had not been a year in the ground – a red sandstone covered the Grave, worked with much the same figures, as are on other stones that were found in the vicinity, but better preserved than any of them and

I have made the accompanying full length tracing, to make it more clear than I can describe them. I have ordered the stone to be placed where it was before on a level with the surface of the ground.

I have the honour to be
Your Grace's
faithful and obedient Servant
George Gunn.

The third letter (a copy) is also from George Gunn to the Duke. It refers to the transmission of Ross's report and confirms that the workmen had found other graves, which they did not disturb, near the two long cists. The fourth letter is from Dr J J Ross to John Stuart after his paper had been communicated to the Society of Antiquaries. He refers to the two skeletons from the first cist; he is sure the cranial bones belong to one individual but is less certain about the facial bones.

Rhind's 'Memorandum of reasons for believing that the Crania discovered in the graves near Dunrobin are Scandinavian' (12 July 1854), while of some historical interest, adds nothing further to the above.

These letters, then, leave no doubt as to the location of the 1854 find. This was south-west of Dunrobin Castle, outside the present walled kitchen garden (whose name 'Meg's Garden' derives from Meg's Burn, which flows through it) at c NGR NC 849005.

That we are almost certainly dealing with the SW and not the NW wall of the garden is suggested by the first part of the second letter. It may be inferred further that the grave was not found near one of the corners of the garden, since this would otherwise have been used as a point of location. The precise location of the grave along the wall cannot, however, be determined. The general area of the finds (fig 1) is now under permanent grass.

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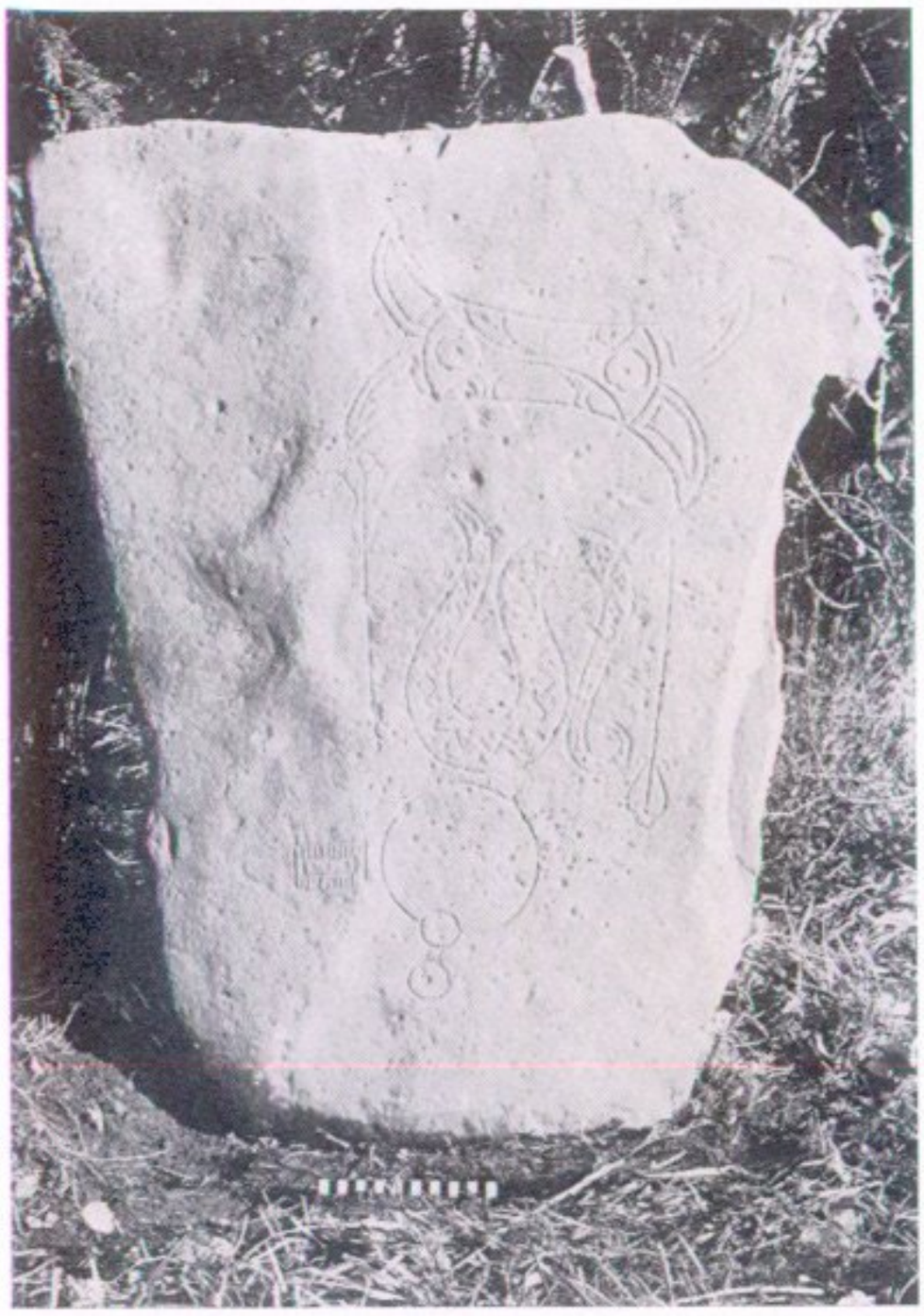
Dunrobin. The W corner of the cairn

Dunrobin. The long cist



Dunrobin. The symbol stone

Dunrobin. The corn kiln and associated structures; the end of the flue passage not fully excavated