

A beaker burial at Newmill, near Bankfoot, Perthshire

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SUMMARY

Part of a shallow penannular ditch surrounding a grave-pit was discovered accidentally during the excavation of the Iron Age-Pictish settlement and souterrain at Newmill, near Bankfoot, Perth and Kinross District, Tayside Region. The grave-pit contained a coffin or some kind of organic lining. No traces of human remains were recovered, but an inhumation may be presumed. The burial was accompanied by a fine beaker and two flint implements. The group has strong Dutch affinities and seems primary in the British series.

THE EXCAVATION

The burial reported here was found during the course of the emergency excavation of a settlement and souterrain at Newmill farm, Auchtergaven parish, Perth and Kinross District, Tayside Region. The National Grid Reference of the site is NO 805324, and it lay beside the A9 trunk road to Inverness about 14 km (8.7 miles) N of Perth. The site of the burial, as of the settlement and souterrain, have been totally destroyed by roadworks and associated gravel-extraction. The general circumstances of the excavation, the acknowledgments and the site location map may be found elsewhere in this volume (pp 165-208 & figs 1 & 12). The excavation of the burial site was directed by Trevor Watkins, who has contributed the first part of this report. I A G Shepherd wrote the sections entitled 'The Finds' and 'Discussion', and Rosemary Hope undertook the microwear examination of the two flint implements, whose results are reported in the section on finds.

The grave lay in the NW corner of the area defined for excavation of the souterrain and (part of) its accompanying settlement. The portion of the penannular ditch which lay beyond the excavation area was already lost before archaeological excavation began. By chance the grave itself lay just within the excavation area and indeed below a bank of soil which ensured that it was discovered by hand excavation and not after machine stripping. The excavation area represented a small portion of the mildly convex top and steep upper flanks of a small, low hill of fluvio-glacial gravel. Restoring the position of the burial on to the contoured plan of the hill before engineering work began we find that the grave was on the highest part of the oval hill-top, which was towards the eastern end. It is interesting to note that the same locality was used at widely separated times for entirely different purposes for both of which it was well suited.

The eastern part of the penannular ditch was discovered early in the examination of the almost level area of exposed subsoil surface above the souterrain (fig 1). It was not recognised

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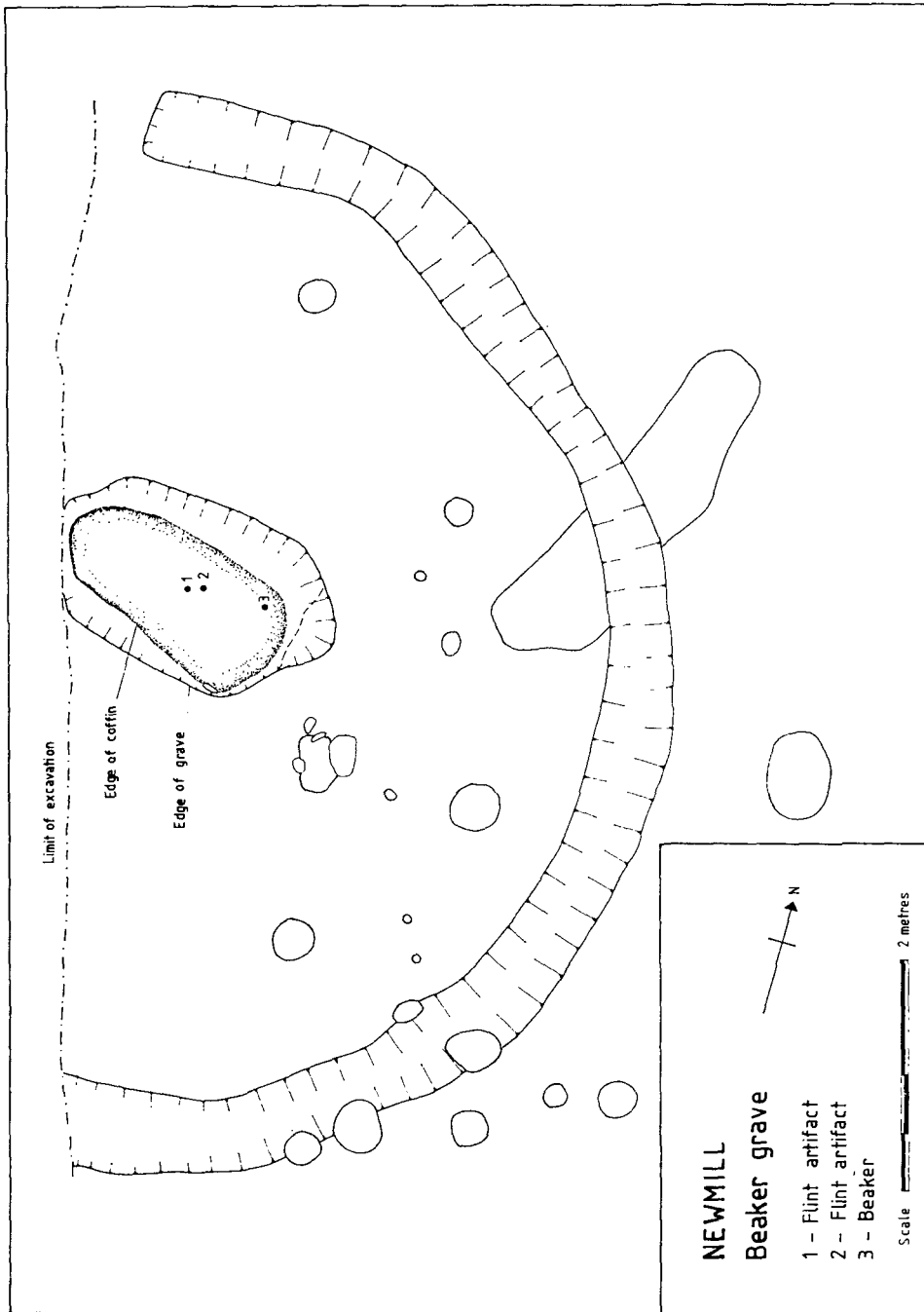


FIG 1 The Beaker burial

for what it was until the beaker was found in the central grave, but inconsistencies between the penannular ditch, at that stage a mere arc, and the other features on the site were puzzling. The edge of the excavation area had been marked by the contractor with a temporary fence, and when the topsoil was cleared for gravel-digging immediately adjacent to the excavation area on its western and southern sides the tractor shovel piled up topsoil in a bank more than two metres wide, which almost concealed the fence. Eventually and piecemeal this bank was removed by hand to give us an additional strip about 2.5 m wide running right across the centre of the feature. The western tip of the grave and the western portion of the penannular ditch were lost; the excavation of the grave took place on the edge of a 4 m drop where the gravel had been quarried.

The penannular ditch was on average a little less than 0.5 m broad at its entry into the subsoil and was on average 0.2 m deep below the surface of the subsoil. In profile it was a round bottomed V. The diameter of the ring described by the ditch (inner lip to inner lip) may be estimated at 6.3 m. The surviving terminal was cut square and the causeway was at least 0.4 m wide. Although the centre of the circle described by the ring-ditch can be approximately reconstructed it is not possible to recover the centre of the causeway in the ditch in order to observe the axis of the monument in relation to N. It is, however, clear that the axis is close to N and the grave was approximately E-W in contrast. Not surprisingly no trace of the slight bank which was presumably formed by the upcast from the ditch could be found at the base of the soil. Although no search was made for it at the time it was possible to refer back to the colour photographs and see on the cleaned section through the turf and topsoil at the former edge of the site below the fence that there was no sign of a hump at any point.

The fill of the ditch was excavated for a stretch in longitudinal section as well as in transverse section. Along the line of the ditch the fill was uniform. In transverse section the fill showed U-shaped silt-lines and a clear tendency for the centre to be occupied by larger pebbles. The matrix of the fill of the ditch was a soft, orange-brown, sandy soil mixed with gravel and small pebbles. By colour and texture the fill of the penannular ditch was differentiated from the soil found in the souterrain and the postholes, which was a very dark brown like the modern plough-soil. There was a tendency noted here and there for the central part of the top of the ditch-fill to remain damper longer than the rest of the fill or the surrounding gravel. On close inspection this proved to be a very thin stratum of slightly darker brown soil in a shallow concavity in the top of the ditch, perhaps an organically richer soil, the remnant of the soil that formed in the almost silted up ditch. No assymetry in the filling of the ditch was observed such as might have indicated whether the upcast from the ditch were thrown out on the inner or the outer edge; but the ditch was so small that it is perhaps not surprising.

There was one feature which the penannular ditch had cut through and which therefore antedated the ditch. It was an irregular, long, narrow hole (feature number 327), which had been cut into the sandy gravel and uniformly and homogeneously refilled with a fine, soft, orange sand with flecks of charcoal. One side of the hole was vertical and straight; no signs of its use for structural purposes was found. Two other features similar in their irregular shape and clean, orange, sand refill were located further to the E and are marked on the general site-plan of the whole excavation (fig 12; p 193).

Within the area enclosed by the penannular ditch were found several postholes of modest proportions. In form, scale and contents they resembled the rest of the postholes on the site and there is no reason to consider them in relation to the beaker burial: they may be assumed to belong to structures contemporary with the later settlement, by which time the beaker burial's superficial traces were gone or so insignificant as to escape attention. A very few thin stakeholes were also found in the eastern part of the interior. It is perhaps suggestive that this is the only

part of the site which produced such features but there is no way of connecting them with either phase of the site's use.

At the centre of the ring-ditch was found a low, amorphous heap of very large pebbles, a selection of the largest occurring naturally in gravel and pebble-beds. Beneath the low heap of pebbles, the only trace of a central feature above the level of the top of the subsoil, was a grave-pit, which was long and narrow. At its western end the grave-pit had been clipped by the contractor's tractor-shovel clearing topsoil in a rough and ready way, and if there had been large pebbles lying one or two deep over that end of the grave they would have been removed unseen. The eastern end of the grave-pit had apparently been modified and enlarged in outline by the activities of burrowing rodents, so that it was not possible to relate the outline of the grave-pit to the outline of the pebble-heap beyond saying that the pebble-heap was more restricted in area at its eastern end than the disturbed end of the grave. In short the shape of the mound over the grave cannot be reconstructed. Its size would have been small if it contained only the displaced soil from the grave-pit, and it would not have been large if the spoil from the ring-ditch were added.

As already indicated the outline of the grave at its eastern end would seem to have been altered and expanded by burrowing rodents. The sides of the pit were fairly straight and parallel; and the western end, although slightly damaged, was nevertheless recoverable as round. The axis of the grave-pit was close to E-W (at an angle of approximately 84° and the axis of the coffin was even closer (at approximately 92°), to magnetic N) and thus at right angles approximately to the axis of the entrance the penannular ditch. In that long, bath-shaped, shallow pit had been placed some sort of container which was almost as long as the grave-pit and somewhat narrower. Near the western end of the grave a thin and tenuous brown stain in the orange-brown fill of the grave was recovered. It reproduced the curve of the end of the grave-pit on a smaller radius. Lower in the grave-fill the line could not be detected, but it was continued by a distinction in the fill of the grave. Similarly along both sides of the grave a clear distinction was detected parallel to the edges of the grave-pit. The material in which the grave-pit had been dug was at this point on the site a coarse sand. Inside the inferred container or coffin the fill was a loamy, soft, mid-brown, almost red-brown, soil. Between the fill of the container or coffin and the walls of the grave-pit the refill material was gravel. There was no grave-fill below the coffin-fill at the base of the grave; the coffin had been placed directly on the floor of the pit. The differentiation between the material with which the coffin was filled and the material with which the space between the coffin and the wall of the grave-pit was filled implies that the filling of the grave was a careful process which, for whatever reason, ensured that the narrow interstices between coffin and grave were filled separately from the simpler task of filling the coffin itself. It would be incorrect to conclude that there might be some significance in the use of different materials, for, while the differentiation was clear because of the soil-stain at the western end of the grave and reasonably clear along part of the sides because of the distinction between the two fills, there was no sharp and constant differentiation between the fill within and the fill outwith the coffin; however, even where visual distinction was impossible there was a sharp textural boundary or hiatus which meant that the coffin fill peeled off the fill of the grave-pit. What the coffin was made of is quite unclear. All that can be said is that it was of an organic material and that it was very thin indeed. In section the coffin had been U-shaped, as was the grave-pit on a slightly larger scale. Along its axis it was flat from one end to the other. Only at the western end was the sharp bend from the base of the coffin to the end traceable. It would have been rather like a bath in overall shape, if the disturbed eastern end is reconstructed like the western end. And clearly the grave-pit had been dug quite precisely to accommodate the coffin. The breadth of the grave-

pit was 1.2 m. Its length is uncertain but was of the order of 1.75 m while the coffin would seem to have been about 0.7 m wide and perhaps 1.6 m in length.

The grave contained no traceable inhumation and certainly no cremated bone. Not even the crowns of the teeth were seen, a phenomenon observed elsewhere in acid soil. Phosphate tests produced no markedly higher concentrations in the centre of the bottom of the coffin than elsewhere. Near the western end of the coffin towards its northern edge was found a beaker. If it had been placed upright in the coffin at the time of the burial then it must have toppled over as the coffin was being backfilled, for it was found tilted more than 45° out of the vertical. It was filled with the same soil as the fill of the coffin, and had served as home and grave for mice. On the base of the grave in the positions indicated on the plan (fig 1) were two chipped stone implements: described with the beaker below.

THE FINDS (figs 2-3)

The Beaker: An S-profiled beaker with a low belly and a flaring rim: it stands 134 mm tall, has a rim diameter of 147 mm, and a base diameter of 82 mm. It has been well fired to a biscuity texture, very even, hard and matt on the exterior, and yellowy-pink on the interior. The fabric is very homogeneous, with the occasional small quartzitic grit, under 3 mm across, in the black core. Traces of burnishing can be seen inside and outside the rim.

The principal formal feature of the beaker is its dramatically flaring neck, with a slightly pointed rim whose diameter exceeds both that of the belly and the height of the pot. This striking feature is balanced by a low, marked, belly carination. The base, in common with the rest of the pot, has been very carefully formed. Internally it is convex, rising to a low central boss, while the exterior has a correspondingly marked concavity.

The beaker is decorated all over with twelve rows of fairly regular chevrons which have been formed by short impressed diagonal lines, beginning 15 mm below the rim. These diagonals were made by a stab-and-drag technique, the point of the tool or spatula being consistently dragged down the pot, producing the characteristic narrow triangular impressions. The diagonals do not always converge and some are slightly curved. In one area of the neck the herringbone impressions were smudged before the pot was fired.

The pot has sprung in one long fracture from the rim to a point 15 mm above the base. The rim is slightly chipped in places, while one area, 60 mm by 60 mm, of the exterior surface between rim and belly, is eroded, and one area of the internal rim surface has flaked off.

This distinctive beaker has few British parallels. The two closest both belong to Clarke's Northern British/Middle Rhine Group (N/MR) (1970, 109), and come from Linch Hill Corner, Stanton Harcourt, Oxon, (Grimes 1944, 42, fig 18; Clarke 1970, no 772, fig 261) and South Hill, Talbenny, Pembroke (Fox 1942, 6-8, fig 3; Clarke 1970, no 1882, fig 250). These pots, in common with Newmill, have rim diameters equal to or greater than their belly diameters, a feature which contrasts with Clarke's definition of N/MR beakers as those with tall slim silhouettes, rim diameters equal to or less than those of the bellies, and, often, footed bases (1970, 108). Other British parallels are hard to find: Scottish N/MR beakers with bands of incised herringbone decoration include those from Pityot, Kincardine (Reid 1924, no 11; Clarke 1970, no 1689, fig 241) and Buckieburn, Stirlings *Discovery & Excavation in Scotland*, 1960, 37; Clarke 1970, no 1781, fig 257), which are not closely similar as they also bear intervening zones of horizontal toothcomb impressions on profiles which are altogether more biconical and narrow mouthed than that of Newmill. Bands of chevrons feature on some Finger Nail-decorated beakers as, for example, the rather haphazard decoration on the pot with Wessex/Middle Rhine proportions from Handley Down, Dorset (Pitt Rivers 1898, 114, pl 265; Clarke 1970, no 191, fig 218). The all over finger pinched decoration of chevrons on the Dover, Kent, beaker represents, of course, a quite different (East Anglian) tradition of rusticated beakers (Jessup 1936, 469, pl 58 right; Clarke 1970, no 396, fig 435).

It was suggested earlier that the Newmill, Stanton Harcourt and Talbenny beakers contrast with Clarke's characterisation of the N/MR group. This dichotomy in N/MR beakers was noted by Lanting and van der Waals (1972, 31), who suggested that the N/MR group represented the conflation of two distinct continental pottery traditions; on the one hand, that of the Protruding Foot Id beakers and

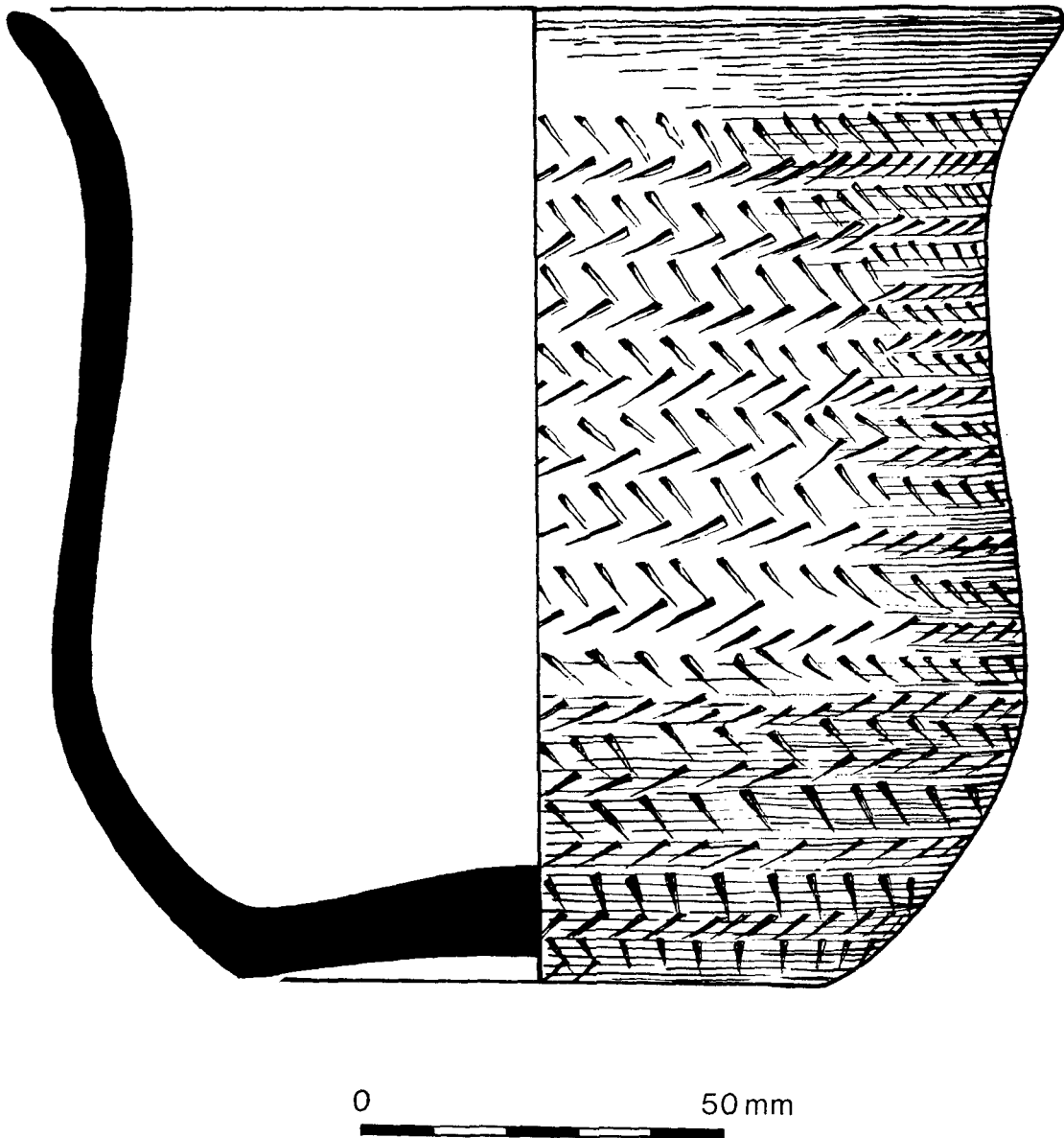


FIG 2 All Over Ornamented, Step 1, Beaker

Westdeutsche (Corded Ware) beakers (cf Clarke 1970, figs 252, 258, 260), and, on the other, that of full bell beaker development in the Netherlands, (cf Clarke 1970, figs 234, 237). This suggestion is reinforced by the existence of close parallels to the Newmill beaker in the Netherlands in contexts typologically and chronologically anterior to full maritime bell beaker styles.

The low S profile and the all over herringbone decoration of the Newmill beaker is best paralleled in the Dutch beakers from Bargerooosterveld, Emmen (van der Waals & Glasbergen 1955, no 48, pl XVII; Clarke 1970, fig 249); Soesterberg, Barrow 3, Amersfoort (Bursch 1934, 56, fig 35; Lanting & van der Waals 1976, fig 8) and Aalten, (Lanting & van der Waals 1976, fig 9). These beakers belong to Type 2IIC in the sequence of Dutch beakers (van der Waals & Glasbergen 1955, 30): such All Over Ornamented

(AOO) beakers were previously interpreted as products of the hybridisation of Corded Ware and Bell Beaker elements (eg Clarke 1970, 115). However, recent analyses of C14 dates and of the beakers themselves have led to the conclusion that the AOO beakers should now be seen as linking the Protruding Foot Beaker (PFB) and the Bell Beaker (BB) series, as the AOO beakers are consistently older than the maritime (BB) ones (Lanting & van der Waals 1976, 3, 13, 37, 40). In fact the Soesterberg AOO beaker was found in association with a PFIId pot (Bursch 1934, 56), while hollow bases seen on such AOO beakers as Newmill are a late PFB feature (Lanting & van der Waals 1976, 5). For these reasons, which will be discussed further in a subsequent section, a case can be made for placing the Newmill beaker at the head of beaker development in Britain, in Step 1 of the scheme of Lanting and van der Waals (1972).

Flint Fabricator: (fig 3, 1) A keeled rod of light grey flint with whitish mottling, 60 mm long, 17 mm maximum width and 9 mm thick. The dorsal surface bears long flake scars on its longitudinal axis, as well as steep and irregular retouch on the sides. The platform has been removed, and only faint pressure rings denoting its position are visible. The ventral surface is longitudinally concave by 2 mm from the horizontal. Mrs Rosemary Bradley has examined the piece for edge damage signifying its form of use, and reports as follows:

'The utilisation damage and other surface alterations to this piece are extremely numerous and complex, the main areas of use being the two ends.¹ Damage on the dorsal surface will be described first. Viewed from the proximal end the right edge has slight damage and some of the retouch arrises even reach the edge intact. The wear increases towards the distal end with small step scars parallel to the edge interspersed with well defined though small scalar scars (less than 0.5 mm). At the distal end the flint has been worn and rounded smooth so that any angular projections have been entirely removed. This is most pronounced on the right side while the left edge at the distal end has stepped scars biting deeply into the edge so that the prominent, high points only are rubbed. These step scars extend on to the left edge, and in their concavities deep, shell-shaped scars may be seen. At the proximal end the left edge is very rubbed and the arrises are rounded; but the sunken part on the right proximal end has been protected from damage. In a number of the dorsal scars a fine, shiny gloss is visible macroscopically. At either end there is a greasy polish extending into some of the hollows. The two median arrises have a very high, glass-like polish which shows some scratches. Striations are present on both distal and proximal tips. They are perpendicular to the edge and extend from the dorsal to the ventral surface covering the entire area of rubbing.

Damage on the ventral surface is less evident. Both right and left edges have a few scalar and angular scars, which increase in number towards the distal end, and a number of incipient dorsal fractures can be seen as hair-line cracks in the flint. At the distal end the abrasion, rounding and striation seen on the dorsal surface extend to the ventral surface also. While most striations are perpendicular to the edge a number cross obliquely towards the right distal edge, and yet others trace lines parallel to the edge. There is a fine line of glassy polish on the distal edge of the ventral surface, and a zone of similar polish in the centre of the ventral surface. Elsewhere a more granular, irregular and less bright polish is present, which appears greasy under low magnification. On the right side striations can be clearly seen running perpendicular to the edge and cutting across the polish. Damage to the proximal end is similar in type to that on the distal end already described, but it is much less severe.

The main area of use on this piece was the distal tip, which has sustained the most wear and become severely abraded and polished. The proximal tip has similar damage, but it is less well developed. The wear from use concentrates on the right side of the distal end and the left side of the proximal end. This pattern may relate to the better edge configuration here but it may possibly be due to the hand in which the piece was held during use. The striations indicate that a downward movement was used, though the ventral surface shows that some oblique movement also took place. The edge angles of 123° for the distal end and 124° for the proximal end would have been determined by retouch, a very strong surface obviously being required for the heavy use. The material against which the flint worked was hard and abrasive enough to smooth the flint and striate its surface, but it was also soft enough to polish it. This, together with the edge damage observed, is consistent with use on a soft rock or mineral like iron pyrites. The movement of the flint in the manner described on pyrites can produce a spark, and finds of flint tools like the one described here with a piece of pyrites are by no means unknown in beaker contexts in Britain. The more diffuse ventral gloss is as yet unexplained, but may be due to the piece having been hand-held.'

While the smoothly worn distal end of this flint invites comparison with strike-a-lights from such mature beaker contexts as Staxton, Yorks (Stead 1962, 133, fig 4; Clarke 1970, no 1390), or Acklam

Wold, Barrow 124, Yorks (Mortimer 1905, 91-2, fig 211; Clarke 1970, no 1210, fig 780), fabricators have a wider chronological range, being found in Neolithic cremations at Dorchester, Oxon, Sites II and VI (Atkinson *et al* 1951, 71, 115, 118, fig 31) and in Bronze Age graves such as Garton Slack, Barrow 112, Yorks, where one was associated with a Food Vessel (Mortimer 1905, 245, fig 618). The early Northern beaker grave of Bractullo, Angus (*Discovery & Excavation in Scotland*, 1967, 1-2; Coutts 1971, 45, fig 77e) contained a similar tool. A geographically and morphologically more distant, but still relevant parallel is the Grand Pressingny flint rod with bashed end from Helden, Netherlands, which was found with an AOO 2IIa beaker and, possibly, a barbed and tanged flint arrowhead (Hulst *et al* 1973, 81-8, fig 9).

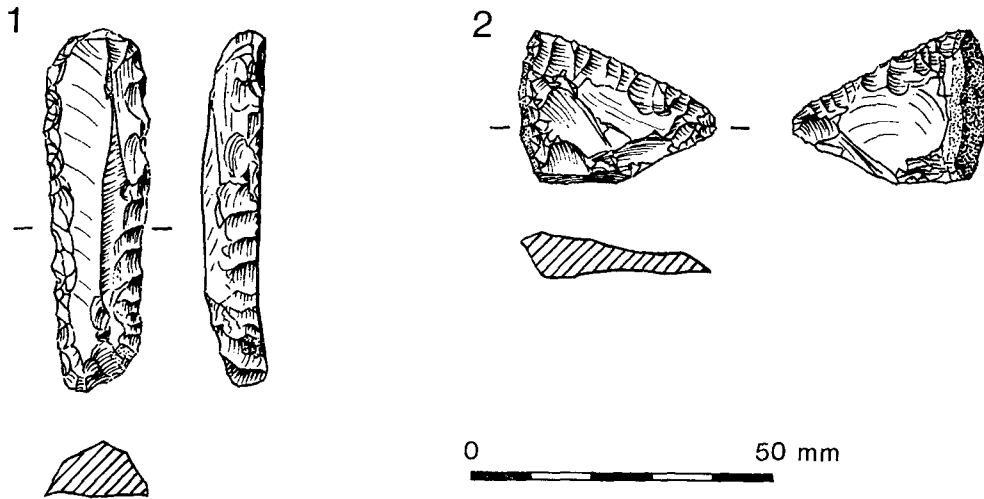


FIG 3 1, flint fabricator; 2, flint knife

Flint Knife: (fig 3, 2) A triangular flake of grey-brown flint, 34 mm long, 24 mm tall and 7 mm maximum thickness. It appears to have been a core trimming flake, bearing as it does haphazard scarring on the dorsal face and a 2 mm thick layer of cortex. The longest edge, opposite the flat, unretouched striking platform, has long, shallow and regular bifacial retouch, while the ventral face of the cortex is also retouched. The purpose of the latter working would have been to blunt the sharp edge of the cortex, and to thin the flint. The third side also bears retouch and represents an attempt to produce a point. Mrs R M Bradley comments on this flint:

'Many of the step-scars on the ventral and dorsal faces of the distal (longest) edge are associated with manufacture. However, edge damage from use is present on both surfaces of the distal edge in the shape of irregularly spaced, small, scalar microscars, especially in the centre of the edge. The right apex has similar scarring but this is isolated. The scalar scars on the dorsal surface have well-defined back borders, but those on the ventral surface are more weakly defined and small (less than 0.5 mm across). Some of the projecting arrises are slightly worn at the distal edge, while the cortical left edge is worn and slightly polished, probably because it is of lower resistance. The proximal portion of the piece has less damage: a few thin, 'stringy' scars, characteristic of hafting, are to be seen on the right proximal edge.

It would seem that the distal edge was used to cut soft material, the centre of the edge and right apex having sustained most of the bifacial damage. The proximal portion, to judge from the evidence of the damage, had been contained in a haft which had caused crushing of the enclosed edges and polishing of the left cortical area. The edge angles of 45° for the distal edge and 40° for the right edge are very suitable for slicing activities, and the flat retouch applied to those edges was probably carried out in order to prolong the useful life of the piece by strengthening the edges while sacrificing something of the sharpness of the original, fresh edge.'

Small flint knives are a not infrequent component of beaker flint associations but do not often bear very distinctive features. The flint from the primary cairn at Talbenny, Pembroke, which also contained the early beaker referred to above, is similar (Fox 1942, 8, fig 4.1), while the Uppermill, Cruden,

Aberdeens N2 beaker grave contained two examples (Anderson & Black 1888, 366; Clarke 1970, nos 1423-4, figs 551-2; Kenworthy 1977, 82-5).

DISCUSSION

The single most important result of this review of the affinities of the Newmill beaker is the demonstration of its close link with the earliest phase of true beaker development in the Netherlands. The finding of a classic Dutch 2IIc beaker in Perthshire prompts the question to what extent can this grave be seen as a representative of the primary stage of beaker culture contact with Scotland, and, more problematically, did that contact amount to settlement or is it explainable as a fashion (cf Case 1977, 74; Burgess 1976, 322; Bradley 1978, 110). A brief examination of the other features of the Newmill burial is now required.

The form of burial monument represented at Newmill is outwith the normal run of Scottish beaker burials. Instead of a short stone cist, with or without an overlying cairn or barrow, such as contained the N/MR grave at Pityot, Kincardines, referred to earlier (Reid 1924, no 11), the burial was placed in a coffin in a narrow grave pit, which was encircled by a small ring ditch. Coffins and small ring ditches are features of some early beaker graves in Southern England, for example the Wessex/Middle Rhine graves of Wilsford G1, Wilts (Clarke 1970, 94); Radley, Berks (Leeds 1935, 38; Clarke 1970, 76) or the N/MR grave at Linch Hill, Stanton Harcourt, Oxon (Grimes 1944, 39, fig 16; Clarke 1970, 109), and provide strong links with the Netherlands (Lanting & van der Waals 1976, 42), which are reflected subsequently in such late beaker graves as Ravenstone, Bucks (Allen nd) and in the Food Vessel and dagger grave coffins at Barns Farm, Dalgety, Fife (Watkins 1973, 134). The extreme thinness of the Newmill coffin suggests the use of a material such as bark, a container of which was found with a cremation and two All Over Cord beakers at Knockdoon, Glenluce, Wigs (Anon 1911, 830). The Linch Hill, Stanton Harcourt grave referred to earlier was surrounded by a ring ditch of similar dimensions (between 8.5 m and 7.7 m diameter, and 0.838 m wide) to the Newmill example (6.3 m in diameter and 0.5 m wide), which resemble Dutch PFB and Bell Beaker graves with circular foundation trenches around individual grave pits, with or without barrows (Lanting & van der Waals 1976, 42). Whether or not, in the absence of evidence for covering barrows, these two small British ring ditches can be defined as foundation trenches, so characteristic of PFB graves (*ibid*), their similarities are certainly strong. The Newmill and Stanton Harcourt grave pits differ in length but the coffins which they contained were closely similar, being respectively c1.6 m long by 0.7 m broad, and c 1.53 m long by 0.53 m broad (Grimes 1944, 40). These dimensions can be compared with those of the plank coffin in the primary grave under Barrow 3 at Soesterberg, Amersfoort, Netherlands (c 2.2 m long by 0.75 m wide) (Bursch 1934, 56, fig 32; Lanting & van der Waals 1976, 47, fig 32), which contained a 2IIc beaker and a PFIId beaker; and, presumptively, with the putative flat grave which contained the Aalten PFIId and 2IIc pots (Lanting & van der Waals 1976, fig 9). The Newmill coffin is also reflected in the narrow elongated hollow, 1.83 m long, 0.53 m wide and 0.56 m deep, with rounded bottom, which the excavator interpreted as a symbolic grave in the primary phase of the Talbenny, Pembroke, barrow (Fox 1942, 7, fig 2).

Another feature of the Talbenny barrow which resembles an element of the Newmill site is the c 2 m diameter mound of clay and pebbles containing the beaker and flint and overlying the elongated hollow (Fox 1942, 6, fig 5). This can be compared with the low heap of pebbles covering the Newmill grave. A further elaboration, not seen at Newmill, was the setting of this mound in a depression, c 2 m in diameter which had been dug into the old ground surface to a depth of c 0.33 m (*ibid*), and into the base of which was excavated the narrow hollow referred

to in the preceding paragraph. This technique of lowering the surrounds of a grave pit may be a variant of the Dutch PFB/BB beehive graves (cf Bursch 1940, 19, fig 6; Lanting & van der Waals 1976, 42–3, fig 34). An additional, more definite, Dutch/Lower Rhine beaker feature in the Talbenny barrow is the stake circle, forming a wattle enclosure (Fox 1942, 5, fig 2; Clarke 1970, 112), which can be paralleled at Altenrath, Wahner Heide (North Rhine) (Buttler 1937, 206, fig 1; Lanting & van der Waals 1976, 47, fig 32). In this connection it is interesting, but speculative, to note that stake holes were found within the area of the Newmill ring ditch, but could not be attributed to any particular period.

One final element of the Newmill burial remains to be considered. The E/W orientation of the grave pit is unusual in the context of early beaker graves in Britain, which tend to be orientated N/S (Clarke 1970, 62, 76, 113; Tuckwell 1975; 111, 113). In this they are similar to the Dutch A00 graves which seem to have a preference for a NW/SE orientation (although this conclusion is based on a rather small example) (Lanting & van der Waals 1976, 44). It can be noted in passing that the Talbenny 'grave' was orientated NE/SW (Fox 1942, 7, fig 2), as was the Soesterberg grave (Bursch 1934, 56, fig 32), and that the Stanton Harcourt grave was orientated NW/SE (Grimes 1944, 41, fig 16). The Newmill grave, however, shares its orientation with the burials of the Protruding Foot beakers (Lanting *et al* 1973, 47; Lanting & van der Waals 1976, 44) and re-emphasises the extremely early position in the British beaker series to which this find must be ascribed.

CONCLUSIONS

The shape and decoration of the Newmill beaker are closely paralleled in the 2IIc category of Dutch beakers, the All Over Ornamented, spatula-decorated, beakers which can now be seen as a stage between, rather than a merger of, Dutch Protruding Foot Beakers and Bell Beakers (Lanting & van der Waals 1976, 3). The overlap of late PFB(Id) pots and A00 2IIc beakers has been demonstrated by closed finds such as Soesterberg (*ibid*, 18, fig 8). Morphological features such as hollow bases are found on late PFB pots (*ibid*, 5), while simple spatula decoration is likewise a PFB trait, viz the herringbone decoration of PF Id pots (*ibid*). Furthermore, C14 dates now reveal A00 beakers to be consistently older than Dutch maritime bell beakers (*ibid*, 3, 38, 40) and to overlap with PFB by at least two centuries (c 2200 BC/to c 1950 BC) (*ibid*, 38; Case 1977, 74, fig 4.2).

For the reasons given above the Newmill grave can be placed in a primary position in the beaker series in Scotland, containing as it does one of the very few Scottish beakers belonging unreservedly in Step 1 of the Lanting and van der Waals scheme (1972, 40, fig 4; Ritchie & Shepherd 1973, 22, fig 1). In terms of Clarke's classification, the beaker has affinities with some pots of the Northern British/Middle Rhine group, although the chronological value of this category has been much reduced.

Some recent considerations of the beaker period in Britain have attempted to reduce the importance of the role of immigration and settlement in introducing beaker pottery and related elements from the continent. In particular, Case has suggested that the earliest beaker phase in Britain may be explainable as the result of changes in fashion in pottery rather than by the impact of settlers (1977, 74). The placing of the Newmill grave in this earliest phase could suggest otherwise. Its location near the River Tay connects it with Clarke's E coast zone of penetration (Clarke 1970, 67), while the continental affinities demonstrated for the grave rituals suggest that Newmill represents more than an exercise in fashion or cult packaging on the part of some of the indigenous late Neolithic inhabitants of Tayside (*contra* Burgess 1976). Although it is

clearly not possible to resolve this debate on beaker origins through the results of one single excavation, if indeed this is a necessary exercise and not merely a philosophical artefact (Clarke 1976, 460), it is certain that the Newmill grave makes a significant addition to beaker studies in Britain, and suggests that further enlightenment may lie in many of the apparently simple ring ditches discovered by recent aerial reconnaissance.

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NOTE

- 1 The procedure followed was to clean both pieces in an ultrasonic tank to remove any dirt and iron-staining of the surface which might obscure traces of use. No surface preparation was necessary. For microscopic analysis a Watson Barnet stereo microscope with maximum magnification of 50 × was used with a transmitted light source. After examination the angles of the working edges were measured using a bevel gauge and protractor as described by Barnes and Cheyner (1935, 295). The form and disposition of the edge damage were observed and noted, especially the distribution of micro-scarring observed under low-power magnification. This is the method proposed by Tringham (Tringham *et al* 1974) with modifications based on my own replicative experiments and experience. It recognises 'utilisation damage' as opposed to the classic traces of polishes, abrasion and striation which require specialised equipment not available to me for their observation (cf Keeley & Newcomer 1977, 35). Necessarily the reliability of the inference of function is less in the method used on these two flints. In particular the material worked by the tools can be more precisely determined using the high magnification approach.

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