



**ARO 7: Beakers and Bunkers;  
Investigations at Rothes Golf Club**

by Christine Rennie

with contributions from Torben Ballin, Beverley Ballin  
Smith and Susan Ramsay

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**Published by GUARD Archaeology Ltd, [www.archaeologyreportsonline.com](http://www.archaeologyreportsonline.com)**

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**Design and desktop publishing Gillian McSwan**

**Produced by GUARD Archaeology Ltd 2014.**

**ISBN: 978-0-9575435-6-0**

**ISSN: 2052-4064**

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Figure 1: Site location.

## Summary

Part of a shallow burial pit was uncovered during landscaping work at Rothes Golf Club in July 2011. Although no human remains were found, their existence is implied by the presence of an intact All-Over Corded (AOC) Beaker, sherds of a second Beaker and a piece of cramp recovered from the sieved spoil from landscaping. Charcoal from the unusually small AOC Beaker has been radiocarbon dated to 2462-2271 cal BC (SUERC-40938).

## Introduction

In July 2011 GUARD Archaeology Ltd conducted investigations at the location of a small All-Over Corded Beaker found during landscaping works at Rothes Golf Course (NGR: NJ 26654 48732) to the south-west of Rothes, Moray (Figure 1). The archaeological investigation was carried out on behalf of Historic Scotland under the terms of the Human Remains Call-Off Contract, as it was anticipated that the vessel may have been associated with an inhumation. The AOC Beaker, along with a flint blade and a Beaker sherd, were found by the green-keeper while removing sand from a natural hummock at the south-east corner of the golf course. Claire Herbert of Aberdeenshire Council Archaeology Service found a further Beaker sherd in the vicinity, and GUARD Archaeology recovered 8 more pottery fragments. In addition, a piece of lithic debitage, small pieces of charcoal and a lump of organic matter identified as cramp, were retrieved during sieving of the sand deposits around the initial find-spot. Similar hummocks were noted in the surrounding area, although it was not possible to say if these were natural, archaeological or modern, as the site had been landscaped to create a 9-hole golf course.

The archaeological investigation involved topographical and geophysical surveys of the environs of the find-spot and an assessment of the find-spot itself. The area surveyed covered approximately 4,800 m<sup>2</sup> and was located between 120 m and 122 m OD.

## Archaeological Context

The north-east of Scotland, including Moray, has an abundance of prehistoric funerary sites, many of which are Beaker burials. In the immediate vicinity of the find-spot are the cropmarks of

a possible Neolithic enclosure or long barrow (NMRS NJ24NE 196; SMR NJ24NE 0012) identified via aerial reconnaissance undertaken by Ian Ralston, Aberdeen Archaeological Surveys in 1984. The cropmark appears to be a trapezoidal enclosure with possible internal features, a shape that is morphologically associated with Neolithic funerary sites such as Dalladies, Fettercairn, Aberdeenshire (Piggott 1972, 23-47) and Pencraig Hill, East Lothian. These mortuary enclosures can take various forms, ranging from the ditch and screen excavated at Eweford West to the trapezoidal enclosure at Pencraig Hill (MacGregor & McLellan 2007, 21-25 and 33-38). Mortuary enclosures are most commonly associated with cremation practices and more often than not are destroyed by fire in their final phase of use by prehistoric communities (ibid 45).

Within about 10 km of Rothes, Beaker burials within cists have been uncovered since the nineteenth century, and include Achroisk (NMRS NJ35SW 3), where a cist was found to contain a skeleton and a Ca type Beaker; Acres, Knockando (NMRS NJ24SW 3), where a short-necked N2 type Beaker was found within a cist; and Lyne of Knockando (NMRS NJ14SE 2).

## Surveys and Survey Results

Ten 20 m by 20 m grids were set up over the find-spot of the intact AOC Beaker and extended out to the north and west in an attempt to locate some of the cropmark enclosure in that area, and to determine if any other features could be identified (Figure 2). All of the grids were surveyed by gradiometer, although only seven were covered by resistivity. For both methods, the traverse was 1 m and the sample interval was 0.5 m. The topographic survey recorded the find-spot itself, all landscape features within the geophysics grids, and spot levels at 2 m intervals. The dashed lines on Figure 2 indicate the limits of fairways.

The results of the geophysical surveys were somewhat disappointing, recording only modern features associated with the landscaping of the golf course (Figure 3). No features associated with the cropmark or the find-spot were picked up during these surveys.



Figure 2: Topographical survey.

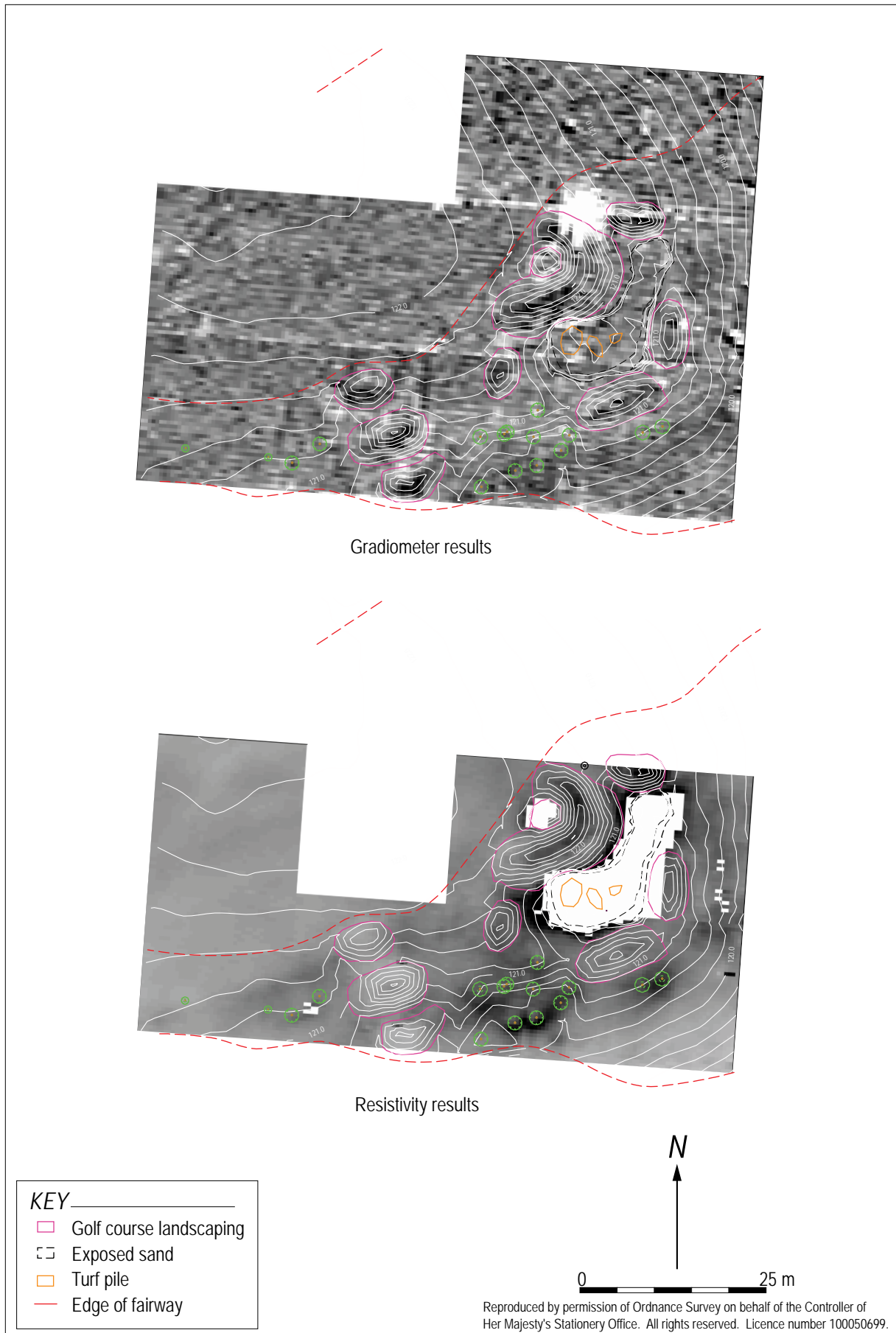


Figure 3: Geophysical survey results.

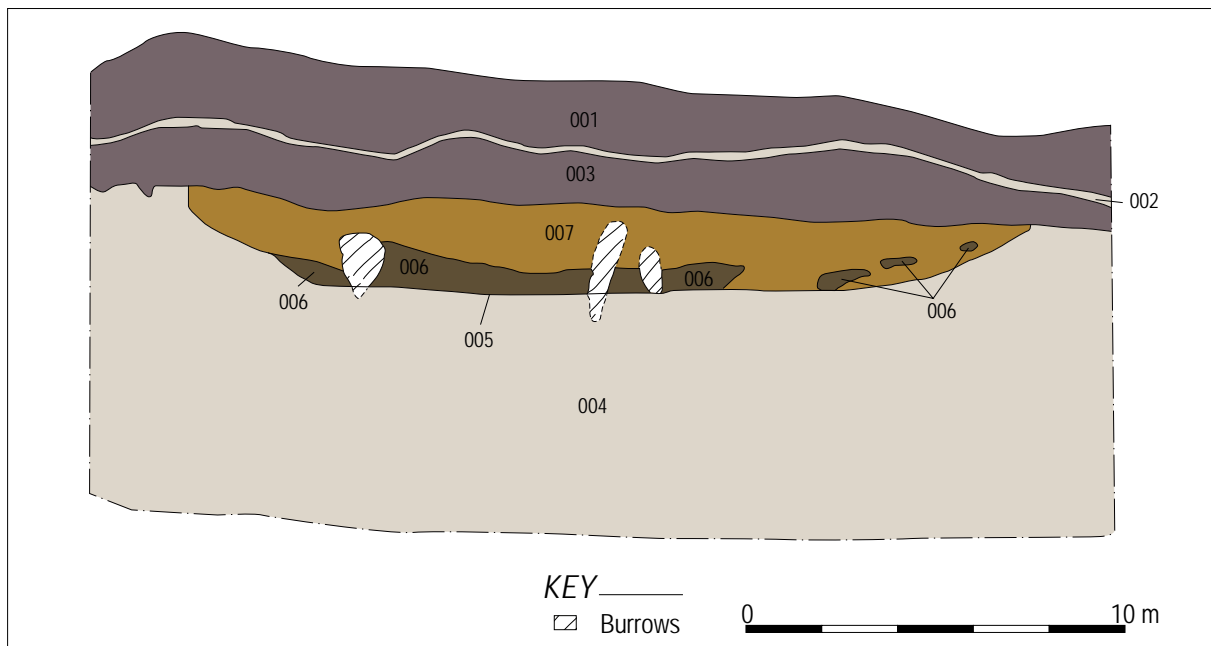


Figure 4: South-facing section of pit.

### Assessment of the Find-Spot

The subsoil in the area where the intact AOC Beaker was found had already been removed to a depth of up to 1 m, and had been sieved by the golf club green-keeper to remove stones. The slumped turf banks on the exposed section above and to the east of the find-spot were removed to reveal a pit (context 005), that measured 2.23 m east/west and was 0.25 m deep. From discussion with the green-keeper, it appears that the intact AOC Beaker was found in the south-eastern edge of this pit. Its basal fill (context 006), was mid-brown sand that included some flecks of charcoal. Overlying this (006) was a main fill (007) of orange/brown sand; both fills had suffered from burrowing activity. Pit 005 was dug into a natural deposit of loose white sand (004) that was over 0.85 m thick. Above the archaeological feature, a turf line had been sealed by a mound of white sand and turf. The modern mound was due to be removed in the autumn of 2011.

On-site sieving of the spoil from the cleaned section of the pit did not produce any artefacts, although one small piece of flint (SF 003), eight Beaker sherds and charcoal were recovered from sand that lay below and surrounded the turf sods removed by the green-keeper (Figure 2). The original context and location of these artefacts are not known.

While standard practice would have been to take samples of the pit fills (Figure 4) for post-

excavation analysis, removal of any of the deposits within the exposed pit sections would have destabilised the feature, or caused further erosion to occur. In these circumstances, it was deemed the best course of action to protect the exposed section by covering it with terram and fencing.

### Phases of Activity

Artefactual dating of the Beakers and lithics, combined with radiocarbon dating of charcoal from the AOC Beaker, indicate that the site was in use during the late Neolithic and early Bronze Ages. The juxtaposition of a Neolithic mortuary enclosure or long barrow with a Beaker burial may indicate a cross-over from one form of funerary tradition to another.

#### Phase I: The late Neolithic

The flint blade (SF 002) found by the golf course green-keeper was produced by hard percussion which, in Scotland, is associated with the late Neolithic period (Ballin, below).

#### Phase II: Early Bronze Age

The initial dating of the intact AOC Beaker suggested an early Bronze Age (EBA) date, confirmed by radiocarbon dating of hazel charcoal from its contents, produced a calibrated date of 2462-2271 BC (SUERC 40938). The presence of cramp further strengthens the case for funerary EBA activity as 'vitreous slag-like material, known



as ‘cramp’, from prehistoric cremation burial sites in Orkney is, apart from cremated bone, one of the recurrent remains found within or around Bronze Age burials’ (Photos-Jones et al 2007, 1).

## Specialist Contributions

### Ceramic analysis

by Beverley Ballin Smith

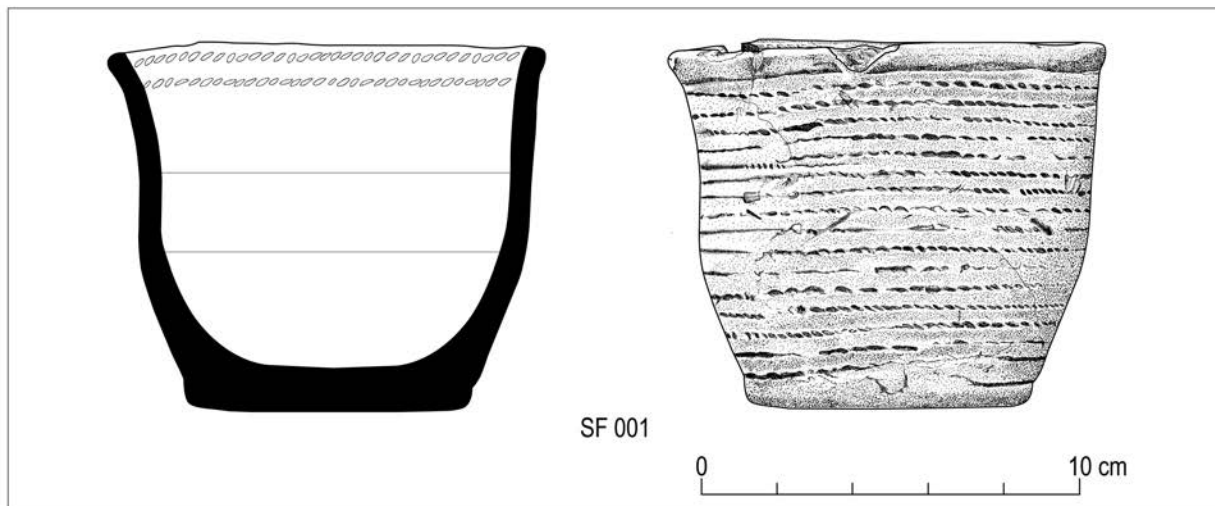


Figure 5: Vessel 1, All-Over-Corded Beaker.

#### Vessel 1

Vessel 1 is an intact All-Over Corded Beaker, in pale brown clay, with a large open crack running from the rim towards the base, which has distorted the overall shape of the vessel. Grass marks noted on both internal and external surfaces suggest that the vessel may have been wiped with straw when leather-hard to brush or smooth away any surface inconsistencies. The vessel has some internal sooting and burning from an area below the rim and towards the middle of the vessel and a faint patch of sooting externally below the rim.

The rim is unevenly rounded and everted. The profile of the rim and neck is unsymmetrical due to distortion, being either straight or slightly concave to the belly of the vessel. Below the belly, whose diameter is no greater than that of the rim, the pot narrows to its base. When manufactured it is likely that the vessel had an elongated ‘S’ shape.

Prior to decoration, the surface of the vessel would have been smoothed but there is no evidence of a slip to mask the grits. The outer surface of the vessel is decorated by a continuous line of parallel cord impressed lines, which began

at the rim and ended just above the base. In total there are between 17 and 18 impressed lines made by an ‘S’ twist cord or twine, whose twists were c. 2 mm long. In addition to the decoration on the body, there are two horizontal parallel cord impressions running round the open mouth of the rim internally.

Dimensions of the vessel: height 85 mm, rim diameter 107-115 mm, base diameter 71 mm, thickness estimated at 5-6 mm.

#### Vessel 2 (Figure 6)

This is also a Beaker vessel represented by 6 sherds (4 joining) and four smaller fragments. As none of these are rim or base sherds, it is not possible to estimate its size. The vessel was made with coarse quartz grits and other mineral grains present in the clay, and the occasional mica flecks. The fabric is hard-fired, mainly oxidised but with a reduced core. Traces of its manufacturing detail are few due to it being buried in a sandy matrix, but the vessel was probably smoothed or burnished before the decoration was incised. The occasional grass mark survives on its internal surface.

The decoration of this vessel is entirely made using a close set, square toothed implement with six teeth with a width of c. 7.5 mm. The sherds are likely to represent different parts of the vessel as the decoration is somewhat different on each of them. Sherds 04 and 05 are similar as both have a central plain field c. 19 mm wide bordered top and bottom by a motif of two parallel horizontal combed lines 3-4 mm apart. The clay between these two incised lines appears as a rounded ridge because of the depth of the toothed incisions. Above, or below, this double line on sherd 04 is a clear and well executed herringbone pattern bordered by another horizontal line. Sherds 06 also share this pattern. Sherd 05 is different in that there is evidence of a plain and an adjacent filled triangle.

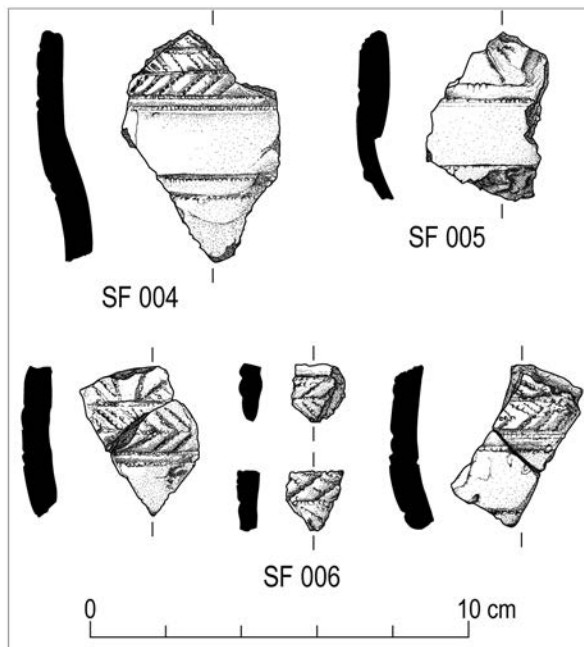


Figure 6: Vessel 2, Beaker.

Dimensions of the vessel: average thickness 8.3 mm

## Charcoal analysis

by Susan Ramsay

Charcoal was identified within the fill of the intact AOC Beaker (Vessel 1) and also from SF 008 (charcoal), found during sieving of sand from around the find-spot. The charcoal assemblage from the fill of Vessel 1 contained only small fragments of oak and hazel charcoal, whilst the assemblage from SF 008 was entirely oak charcoal. The two vessels have been identified (see above) as being late Neolithic/early Bronze

Age in date, and the charcoal assemblage is consistent with this time period. Oak would have been dominant within the local woodlands throughout the prehistoric period but became less common from the Iron Age onwards.

## Cramp analysis

by Beverley Ballin Smith

An irregular lump of burnt organic matter (SF 007) (Plate 1) is unstratified, but is believed to have come from the burial pit along with Beaker Vessels 1 and 2 and the flint. This material comprises fused cremated human bones and vitreous material, most likely derived from both the fuel and the burning of the body on a pyre, during the late Neolithic/early Bronze Age. No chemical analysis of the specimen has been undertaken but, according to Photos Jones et al. 2007, it is likely that fuel and soil contaminants, along with body products, fused during the collapse of the pyre to form what is known as cramp. It is evidence of both cremation and a funeral pyre. Soil contaminants suggest this piece came into contact with the base of the pyre while it was still hot.

In Orcadian examples (ibid) the fusing of materials from the pyre was made deliberate to allow the collection of the remains of the deceased prior to burial in, or along with, a burial vessel often placed in a cist. Examples of cramp outside the Northern Isles, where seaweed was the most likely fuel, are rare but not entirely absent. The survival of this piece from Rothés suggests purposeful actions were required before and during the cremation and burial rituals, as the choice of fuel, perhaps the pyre location, its construction and the heat to which it attained, all affected the creation of cramp and the survival of this small amount of human remains.



Plate 1: Cramp (SF 007) recovered from sand deposits.

## The lithic artefact

by Torben Bjarke Ballin

SF 002, which was recovered by the golf course green-keeper and is therefore unstratified, is a fine- to medium-grained, mottled light-grey flint blade (Figure 7), measuring 57 mm by 19 mm by 7 mm. Although a secondary piece in terms of reduction sequence, the blade only has a small amount of abraded cortex at the distal end. Little remains of the original striking platform, although it is possible to identify a standard cone of percussion and a large ventral erraillure scar, defining the piece as having been manufactured by the application of hard percussion. Despite its method of manufacture, the artefact is a highly regular blade and clearly represents a developed blade industry. The blade has obvious use-wear along both lateral sides, defining it as an unmodified tool. The blade has gloss on both edges and there is little doubt that this piece was used for sickling cereal, grasses, or possibly reeds (Juel Jensen 1994).

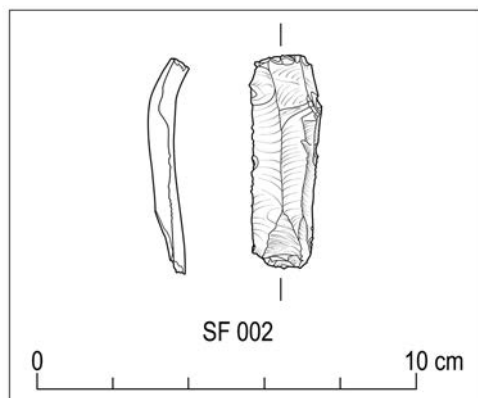


Figure 7: Flint blade (SF 002)

In Scotland, hard-hammer blades of this size would usually be associated with the late Neolithic period (Ballin 2011); true blades were not produced in the Bronze Age nor in the Mesolithic and early Neolithic periods, where the preferred approach was soft percussion (Butler 2005). It has frequently been claimed within the archaeological literature that late Neolithic lithic industries focused on flake production (see references in Ballin 2011), however large numbers of high-quality blades were produced either on traditional single-platform cores, or on Levallois-like cores (e.g. Suddaby and Ballin 2011).

The size of the blade, as well as the quality and colour of the flint, suggests that the raw material may have been obtained through exchange

with groups in north-east England, probably the greater Yorkshire area. However, the abraded cortex of SF 002 indicates that the flint did not derive from primary sources in that area, but more likely from secondary deposit.

SF 003, which is also unstratified, is an indeterminate piece in fine-grained, light-brown flint with an abraded cortex that measures 14 mm by 7 mm by 6 mm. The quality and colour of the flint is consistent with imported Yorkshire flint but, as in the case of SF 002, the character of the cortex suggests that the flint derives from secondary deposits in that area. The raw material indicates a later early Neolithic to late Neolithic date.

## Excavation of the Intact AOC Beaker

Prior to excavation of the contents of the intact Beaker, the vessel was sent to AOC Archaeology



Plate 2: AOC Beaker.

Group in Edinburgh, where the contents were X-rayed. The X-ray revealed that the Beaker contained some small stones, although the strength of the X-ray required to penetrate soil meant that high detail of any organic remains within the vessel would be lost (Yates 2011, 1). AOC also assessed the condition of the Beaker, and stabilised it in preparation for excavation of its contents by osteo-archaeologist Iraia Arabalaza. The excavation conducted in 11 spits, each measuring approximately 10 mm, revealed small amounts of charcoal, a possible charred seed and the three pebbles noted on the X-ray (Table 1).

**Table 1: Contents of the intact AOC Beaker**

Spit Number	Approximate depth	Contents
1	10 mm	Flecks of charcoal
2	10 mm	Flecks of charcoal and some small quartz pebbles
3	10 mm	Flecks of charcoal and some small quartz pebbles
4	10 mm	Flecks of charcoal and the upper parts of two of the pebbles observed on the X-ray.
5	10 mm	Flecks of charcoal, a possible charred seed and the lower parts of the pebbles in spit 4.
6	10 mm	Flecks of charcoal and fine roots
7	10 mm	Flecks of charcoal
8	10 mm	Fine roots and charcoal flecks
9	10 mm	Fine roots among darker sand with possible organic remains, and the top of the third of the pebbles observed on the X-ray.
10	10 mm	Charcoal and organic material related to the fine roots. Pebble 3 fully exposed but not removed.
11	10 mm	Flecks of charcoal and pebble 3.

## Radiocarbon Dating of Vessel 1

The AMS radiocarbon date was obtained from Scottish Universities Environmental Research Centre (SUERC), with hazel used as the dating sample. The calibrated date (Table 2) indicates that the carbonised hazel found within the AOC Beaker dated from the early Bronze Age. This date is consistent with the dating of the AOC Beaker from Sorisdale (Needham 2005) and with the Short-Necked Beakers found at Ord, Auchindoir and Kearn, Aberdeenshire, and Borrowstone (cist 5), Kingswells, Aberdeen City (both Curtis et al 2008).

**Table 2: Radiocarbon dating**

Site	Sample	Material	Description	Depositional context	Uncal.	Calibrated 1 $\sigma$	Calibrated 2 $\sigma$	Delta $^{13}\text{C}$
Rothes	SUERC-40938	Charcoal: corylus	AOC Beaker contents	Secondary?	3855 $\pm$ 35	2350-2281 BC	2462-2271 BC	-25.9%
Sorisdale	BM-1413	Unknown	Unknown	Unknown	3890 $\pm$ 45	2465-2335 BC	2560-2545 or 2495-2275 or 2240-2205 BC	Unknown
Ord, Auchindoir and Kearn	V-2243-40	Unknown	Unknown	Unknown	3854 $\pm$ 31	2460-2210 (Date cal BC to decade)	2470-2200 (Date cal BC to decade)	Unknown
Borrowstone	V-2243-49	Unknown	Unknown	Unknown	3834 $\pm$ 29	2350-2200 (Date cal BC to decade)	2460-2200 (Date cal BC to decade)	Unknown

## Discussion

### with contributions from Beverley Ballin Smith

The association between Beakers and burials is long established (inter alia Needham 2005, 207; Sheridan 2003, 4), and the intact AOC Beaker from Rothes appears to be one of the earlier forms of these vessels. Recent research into Beaker burials in Scotland suggests that the Rothes Beakers could well be part of a wider European funerary practice whereby Beakers are interred in grave pits, rather than in stone cists (Curtis and Wilkin 2012, 239; Shepherd 2012, 167). These earlier pit burials often involve interment in a wooden coffin or wooden chamber that Shepherd believes to be the forerunner of the stone cist (Shepherd 2012, 167). Although there were no human remains found in the pit, their presence may be inferred by association with the Beaker vessels and the site's proximity to a mortuary enclosure. However, any temptation to conclude that the discovery of the Rothes Beakers in association with a pit is part of this continental European practice must be resisted for the present time. While it is clear that there is a contextual relationship between the pit and the Beakers, the presence of inhumations or cremation burials within the pit has not been established and, until this has been done, any possible relationship with European burial practice should be treated as speculation.

Beaker-related research carried out in the last decade has included consideration and, in some cases, analysis of Beaker burials from the NE of Scotland (e.g. Parker Pearson 2006, Bradley 2007, Jay et al. 2012). These in-depth studies have produced many new AMS dates for Beaker burials meaning that, in Sheridan's words, 'north-east Scotland is arguably now the best-dated region of Beaker use anywhere in Europe' (Sheridan 2008, 60). Most recently, the University of Aberdeen's Marischal Museum's Beakers and Bodies Project encompassed a detailed analysis and interpretation of all Beaker burials and cremations within the area, including those in Moray (Curtis et al 2007; Curtis and Wilkin 2012). The project, which focused on the mid to late 3<sup>rd</sup> millennium BC, noted the re-use of Neolithic tombs 'for a variety of funerary and depositional practices' in Moray during that period (ibid, 246). Such re-use, or re-use of the locale, may be evident at Rothes where the Beakers were found about 100 m from a mortuary enclosure. The recovery

of cramp from close to the presumed burial pit points to cremation having taken place at or close to that place, although it could equally be argued that cramp is an intrusion from the mortuary enclosure. Despite the spatial relationship between the cramp and the Beakers, there was certainly no cramp excavated from the AOC Beaker, nor was any evident from examination of the interior surfaces of Vessel 2. Any temporal relationship between that cremation material and the Beakers is presently unclear.

The most obvious feature of the intact AOC Beaker is its diminutive height of only 85 mm, a Beaker size for which the author could find no parallels. McLaren writes that small pots are a 'common feature of the inhumation burial of children, especially in Scotland' (McLaren 2004, 299), and describes the excavation of a Bronze Age cremation cemetery at Pasture Lodge, Lincolnshire where 'it was shown that children were interred within pots, the size of which seemed to reflect the age of the child with the youngest child interred within the smallest pot (ibid. 299 after Allen et al. 1987, 187). Small ceramic vessels dating from the Bronze Age are known from throughout the British Isles and have been much studied (Gibson 2004). It is, therefore, possible that the AOC Beaker from Rothes is from a child's burial.

Stylistically, the intact AOC Beaker most closely resembles the Beakers found at Ardnamurchan, Argyll; Drummelzier, Pebbles, and Leuchars in Fife (Clarke 1970, 281), although it is markedly smaller in height than any of these. Needham (2005, 183) dates this form of Beaker to c. 2500-2100 cal BC, considering them to be a 'primary choice for funerary usage'. Needham's date-range straddles the cross-over from the end of the Neolithic to the beginning of the Bronze Age, and encompasses the radiocarbon date obtained from charcoal found within the Beaker. The late Neolithic date for the flint blade may, therefore, be only slightly earlier than the AOC Beaker.

The decoration of Vessel 2 is thought to be similar to that of Broomend 2 found in Aberdeen (Clarke 1970, 346) and belonging to his Northern 2 style. Both Vessel 2 and Broomend 2 have similar decoration to Needham's (2005, 191).

Although the actual style of Vessel 2 is uncertain, its decoration includes many of the motifs

(ridge and furrowing, fringe motifs and multiple herring-bone) considered by Needham to be characteristic of this group.

From the limited stratigraphic evidence it is clear that the two Beakers are burial containers. It is mostly likely that the two different Beakers represent two distinct and separate burial events, although the evidence is lacking to collaborate this. Stylistically, the AOC Beaker is probably the earlier, but use of the two Beakers may have overlapped closely in time despite their differences in style and decoration. If this is the case, the burial place may well have been marked in some way to allow its reuse with the insertion of Vessel 2. The additional evidence of flint and cramp indicate that artefacts were interred in the pit along with the human remains.

## Conclusions

Although the intact AOC Beaker has similar decoration to those from Ardnamurchan and Leuchars and is stylistically within Needham's Short-Necked Beaker classification, its very small dimensions have no known parallels among AOC Beakers. The diminutive proportions of the AOC Beaker coupled with the early radiocarbon date for its contents make this a unique find in a region where Beaker burials have been, and continue to be, found in significant numbers.

The proximity of the Neolithic mortuary enclosure and the presumed burial pit that contained the Beakers suggests a continuation of use of the Rothés site as a locus for funerary activity over many generations, encompassing the transition from collective tombs or cremations, to individual graves. Although the pit was not excavated during this investigation, it is almost certain that it was the location of at least one episode of interment of human remains along with grave goods in the form of Beakers and flint tools. The possibility that at least one of the interments was that of a child cannot be proven but should not be discounted.

## Acknowledgements

The author would like to thank the club captain, committee and staff of Rothés Golf Club, Iraia Arabalaza and Fiona Jackson of GUARD Archaeology, Rod McCullagh of Historic Scotland and Claire Herbert of Aberdeenshire Council Archaeology Service for their assistance during

this investigation. The work was funded by Historic Scotland under the terms of the Human Remains Call-off Contract.

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