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New light on oblong forts: excavations at Dunnideer, Aberdeenshire

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ABSTRACT

This paper presents the results of the excavation of a single keyhole trench at the oblong vitrified fort of Dunnideer, Aberdeenshire, along with a brief history of the study of oblong forts and vitrification. The excavation yielded two radiocarbon dates derived from destruction layers, which are discussed along with the results of a limited programme of archaeomagnetic dating at the same location.

INTRODUCTION

The series of oblong, gateless and often vitrified forts are one of the iconic type-sites of the Scottish Iron Age. Their study echoes the development of modern Scottish archaeology, with its origins in the intellectual explosion of the Scottish enlightenment; indeed, the earliest research (Williams 1777) just predates the founding of the Society of Antiquaries of Scotland in 1781. However, despite over 200 years of study, their function and date remain uncertain. This is largely because only two examples have been subject to modern excavation: Finavon, Tayside (MacKie 1969a and 1976) and Craig Phadrig, Inverness (Small & Cottam 1972). Another potential example is Greencairn, Balbegno, Fettercairn whose excavation yielded radiocarbon dates associated with destruction across the second half of the 1st millennium BC (Wedderburn 1973). However, while it has massive vitrified ramparts, it also has an entrance so may not be part of the oblong fort series. In addition, there has been significant debate over contradictory sets of dating evidence from the series (Alexander 2002). This article presents the results and implications of the first new excavation evidence for over 30 years.

ARCHAEOLOGICAL BACKGROUND

The forts in question are rectangular, with massive stone timber-laced ramparts, frequently vitrified, without obvious entrances, often on prominent hilltops, and ranging widely in area by a factor of 10 from *c* 0.06 ha to *c* 0.8 ha (Feacham 1966: 67, fig 5). While the series is most commonly found in the north-east of Scotland (Tayside and Aberdeenshire) it has been argued that outliers exist across the rest of the country (for example Dunagoil, Isle of Bute (Harding 2004),

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although this is questioned by others (Fraser Hunter pers comm). The series includes both the second highest hillfort in Scotland, Tap o'Noth, at 563m OD (RCAHMS 2007: 103–5) and reputedly the fort with the highest density of finds in Scotland, Dunagoil (Dunwell & Ralston 2008: 83).

The initial studies of the series started in the late 18th century with a clear focus on their vitrification (Williams 1777; Anderson 1779, 1782; Tytler 1790). Research faltered, then restarted with the Victorian excavations at Castle Law, Abernethy and Castle Law, Forgandenny, both Perth and Kinross, which revealed timber lacing (Christison & Anderson 1899; Bell 1893). These excavations provided the inspiration for Childe's Abernethy Complex (1935: 193–7), assumed to have been derived from the *murus gallicus* described by Caesar at Avaricum (Cotton 1954), helping to provide a lynchpin for diffusionist theories of cultural change through invasion (Harding 2004a: 85). It was only with the eventual introduction of radiocarbon dates that the origin of the forts was pushed back (Mackie 1969b), making such theories untenable. Childe also drew a distinction between those of the series that were vitrified and those that were not (ibid), with his excavations at Finavon characterising the former (Childe 1935a). This excavation provided the starting point for Childe and Thornycroft's (1938) experiments into vitrification.

The forts continued to be an intermittent focus of research through the 1960s (see below) to the present day, with detailed surveys of the White Catherthun, Angus (Dunwell & Strachan 2007) and the ongoing re-survey of Castle Law, Forgandenny (John Sherriff pers comm) as well as a general call for more excavation on them (Hunter 2007: 49).

While the massive walls of these forts and the apparent absence of entrances lends them the air of impregnable fortresses, alternative interpretations have been voiced, such as non-defensive ceremonial structures, with parallels to European ritual enclosures (Harding 2004a: 87). Their chronology has been subject to considerable debate; for example, while Armit (1997: 108) and Ralston (2006: 151) prefer to see the series as belonging to the latter centuries BC, Halliday (1991) and (Ritchie 1995, 8) have argued for Pictish dates.

The importance and wide interest in the forts has led to various techniques being applied to date the forts, from radiocarbon dating of charcoal connected with the destroyed rampart (Mackie 1969 and 1976; Small & Cottam 1972; Wedderburn 1973) to dating the actual vitrification event by both thermoluminesence (TL) (Sanderson et al 1988) and archaeomagnetism (AM) (Gentles 1993). The former dates could relate to the use of the sites and represent *termini post quem* for the construction of the ramparts, while the latter clearly relate to their destruction and represent *termini ante quem* for the use of the site. However, these various methods give inconsistent dates, ranging from 1000 BC to AD 1000 (Sanderson et al 1988: 315; Ralston 2006: 150–1; RCAHMS 2007: 102).

Mackie's dates are considered problematic due to laboratory problems, and are currently only recommended for use with so large an error range that they simply indicate activity in the 1st millennium BC (Alexander 2002: 51–3). Small and Cottam's dates from Craig Phadrig indicate that the inner vitrified rampart was possibly constructed and then destroyed in the second half of the 1st millennium BC (Small & Cottam 1972: 23), although the material dated and its interpretation are not without controversy (Ralston 2004: 23). Finally, there is some confusion over Wedderburn's dates from Balbegno, two of which are statistically different, one from the middle of

the 1st millennium BC and the second from the closing centuries BC (Megaw & Simpson 1979: 489). The first date relates to a timber associated with the destruction of the wall, while the latter is associated with twigs under the wall's collapse. If the dates are accurate, it may be that the older date represents residual material on site used as fuel to destroy the rampart or alternatively, perhaps it represents the difference in age between construction and destruction, with the older date deriving from timber lacing.

While Sanderson's TL dates were among the first attempts to date the actual vitrification and represent important ground-breaking works, the results were surprisingly varied and they have come under increased criticism (Kresten et al 2003; Ralston 2006: 151). However, Gentles' AM evidence on the four oblong forts he considered (Tap o'Noth, Finavon, Knockfarril and Craig Phadrig) are generally consistent and indicated that the vitrification occurred in the closing centuries BC (Ralston 2006: 151). With specific reference to Finavon, an average of seven samples gave a date at 95% confidence of 180–90 BC (Gentles, quoted in Alexander 2002: 53).

Other indirect dating evidence is available from some of the series: at Castle Law, Abernethy, a La Tène Ic bronze fibula was recovered from the site (Christison & Anderson 1899: 32; Feacham 1963: 145; Hull & Hawkes 1987), although it cannot be linked to the ramparts. At Castle Law, Forgandenny, new survey has revealed as yet undated roundhouse platforms on the collapse of the rampart (John Sherriff pers comm). In addition, there are no Roman finds from any of the series (Fraser Hunter pers comm). Finally, at Turin Hill, Angus, a putative homestead lies over the rampart of a possible example of the series (Alexander & Ralston 1999). The origins and dating of 'homesteads' are also the subject of debate (Taylor 1990). Some have Late Iron Age origins with frequent Early Historic reuse (Hingley et al 1997), but there is clear evidence that their number contains *de novo* constructions from the Early Historic period (for example, Maiden Castle, Aberdeenshire (Cook in press)).

It is clear that the massive ramparts represent a substantial investment of resources (timber and stone) as well as labour and effort. The subsequent vitrification, a process by which stones are fused together at temperatures in excess of 1,000°C (Ralston 2006: 146), at some sites represents an even more impressive process (see McHardy (1906), Childe & Thornycroft (1938) and Ralston (1986)). Vitrification requires timber-laced ramparts and involves substantial quantities of fuel over an extended period of time; it is argued that to achieve the level of vitrification present on these sites would take days if not weeks (Ralston 2006: 163). The process has no chronological or geographical significance, and occurs over a wide period across Europe (ibid 143–63).

The factors leading to vitrification have been discussed in relation to accidental fire, constructional factors (a deliberate act undertaken to strengthen the rampart), and a deliberate act of destruction (Mackie 1969b, 1976 and Ralston 2006). Accidental fires would be unlikely to have such sustained effects and the unpredictability of the process suggests it was not constructional. Current views tend to see it as the latter, as an act of aggression following capture (Ralston 2006: 163). However, if – as Harding (2004: 85–7) suggests – the enclosures have a more esoteric function, perhaps the vitrification might be viewed as 'ritual closure' at the end of the site's active life, akin to the destruction of may Neolithic ritual monuments (Noble 2006: 45–70).

The prospect of Dunnideer or Tap o'Noth on fire for day after day, night after night, would be an impressive, awe-inspiring spectacle, and a statement of overwhelming power; as Ian Ralston more eloquently put it:

> It is perhaps as near as the European Iron Age got to Las Vegas lit against the Nevada desert or, more sinisterly, the destruction of Coventry or Dresden (Ralston 2006: 163).

THE HILLFORTS OF STRATHDON

The new fieldwork reported here derives from a series of community, keyhole excavations undertaken by the authors in Aberdeenshire over the last four years. In 2007 the Royal Commission on Ancient and Historical Monument of Scotland (RCAHMS) published a survey of the archaeology of Donside, Aberdeenshire. This survey proposed a six-fold hillfort classification scheme based upon size and nature of defences (RCAHMS 2007: 100–1).

The RCAHMS work represents the third such attempt on the same basic evidence, with earlier surveys published by Feacham (1966) and Ralston (et al 1983), each coming to differing conclusions. It struck the author that without new evidence we were doomed to reinterpret the same basic, flawed evidence forever. This was the inspiration for the Hillforts of Strathdon Project, and over four years between 2006 and 2009 small keyhole trenches were excavated across examples of each of the six types of hillfort. To date the project has examined Bruce's Camp (NJ 71 NE 3; Cook et al forthcoming), Maiden Castle (NJ 62 SE 2; Cook et al 2007 and 2008); Dunnideer (Cook et al 2008); Hill of Newleslie (NJ 52 NE 31), Hill of Barra (NJ 82 NW 4; Cook et al 2009) and Cairnmore (NJ 52 SW 9; Cook et al 2010).

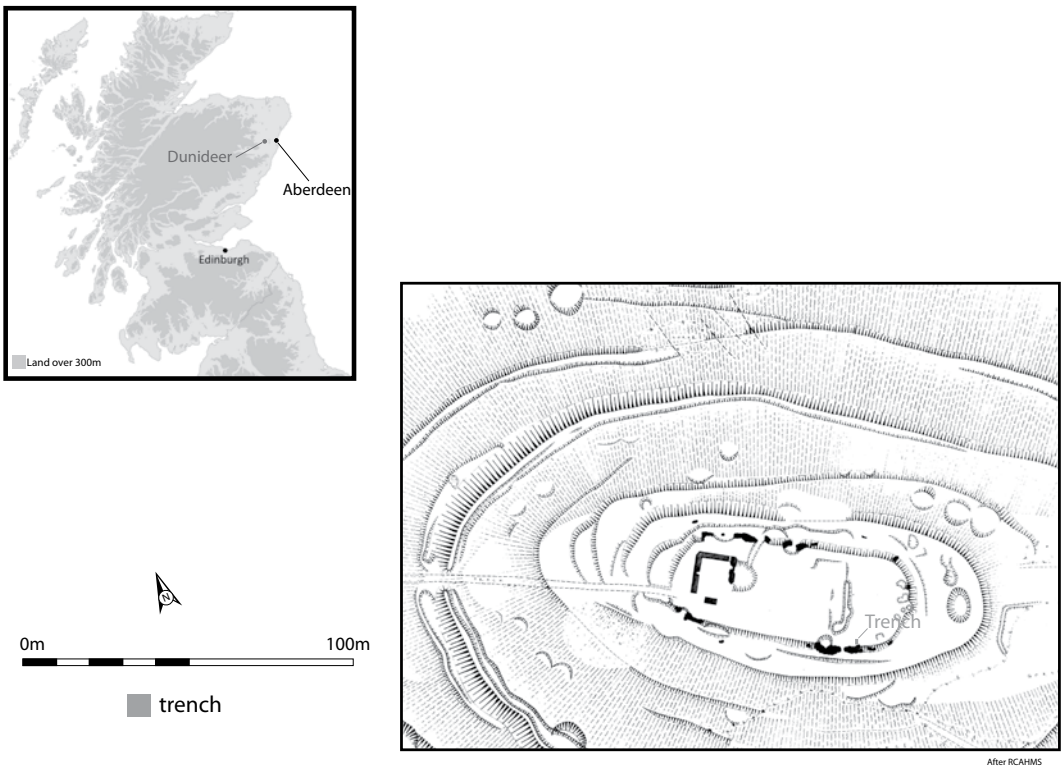
The purpose of the fieldwork was four-fold:

(1) to establish if the proposed classification has any chronological significance;
(2) to extend the work undertaken by the authors in and around Kintore (something explicitly recommended by the Iron Age research agenda (Haselgrove et al 2001));
(3) to engage and provide training to the archaeological active local community who were keen to undertake the work;
(4) to test further the effectiveness of keyhole archaeology.

There is a long and significant history of keyhole archaeology in Scotland. Examples include Renfrew's work at the Ring of Brodgar, Orkney (Renfrew 1979), Alcock's work on Early Historic fortifications (Alcock et al 1986, 1989; Alcock & Alcock 1992), and most recently the Edinburgh University Angus Field School (Finlayson et al 1999), although this latter project also undertook much larger scale projects. These sites demonstrate that significant results, establishing durable sequences can be obtained for minimal investment and limited damage to the monuments in question. However, despite this significant track record there is still a reluctance to accept the value of such work. The Hillforts of Strathdon project was intended as a stress test of the methodology prior to applying it to larger projects, where significant numbers of sites over a period of years could be characterised by this approach (Cook & Cook in press).

DUNNIDEER

The remainder of this article will deal with the keyhole excavation on Dunnideer, Insch (illus 1). Dunnideer comprises a complex

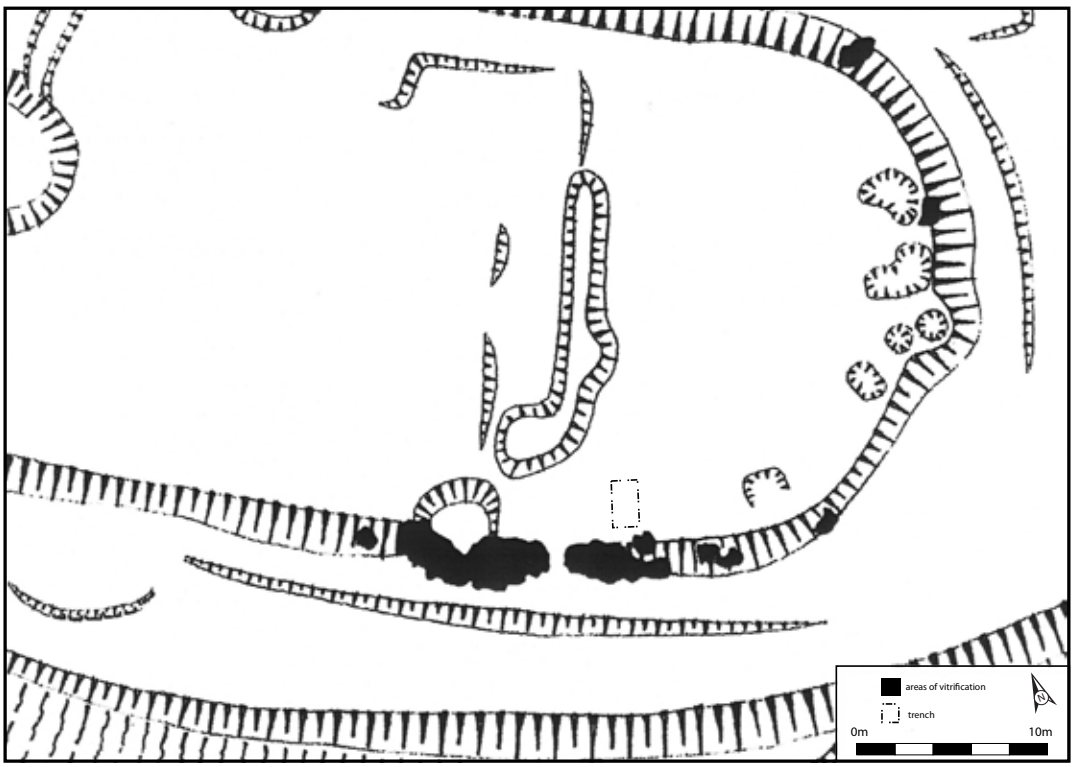


ILLUS 1 Site location plan

hillfort which sits on top of a prominent domed hill. The inner enclosure (the oblong fort) is extensively vitrified and measures 67m by 27m. It appears as if much of the vitrified material has moved from its original position. The outer two defences lie lower down on the slopes of the hill and are visible as slight terraces. The outer enclosure covers an area of *c* 290m by 183m, with probable entrances in the east and west (RCAHMS 2007: 96–103). Substantial quantities of vitrified stone from the oblong fort have been used in construction of a later tower house (Feacham 1963: 105). While no previous excavation has taken place on site, the site was surveyed in detail by the CFA (Badger & Dunwell 2005, 2006).

Dunnideer is one of only two oblong forts within the Strathdon study area, the other being Tap o'Noth, which is at a much higher altitude and is considerably better preserved. The truncation of Dunnideer was the determining factor behind the choice of site, as any excavation could reach primary deposits without removing tonnes of stone, which has proved a problem for previous excavations (Small & Cottam 1972).

A single trench measuring 2.5m by 1.5m was opened on the inner edge of the vitrified rampart on the northern side of the site in July 2008 (illus 2). The work was undertaken in collaboration with local volunteers and students during the author's holidays. The trench location was explicitly chosen as it

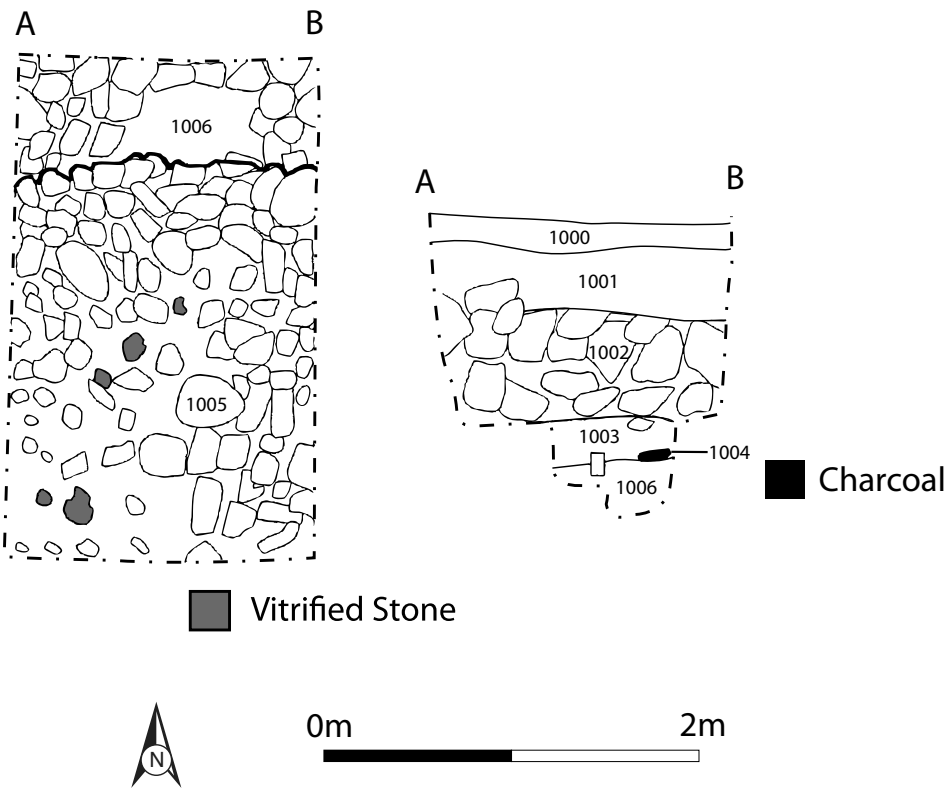


ILLUS 2 Trench location plan

appears to be one of the few points where the vitrified rampart material survives in situ. If this was the case, it would be possible to estimate the minimum size of the rampart, and it was assumed that the base of the inside face of the rampart would contain sufficient in situ charcoal from which to obtain a date. As the explicit objective of the project was to date the inner rampart, it was not felt necessary to excavate a larger trench (and indeed there were insufficient resources within the project budget for such an undertaking).

The excavation removed 1.4m depth of collapsed rampart (C1002) and topsoil (C1001) and demonstrated that the rampart survived to five courses (1.1m) high (illus 3 and 4) without any obvious indication of beam holes. It was at least 4m wide (the outer face was not identified) and is of a comparable scale to the excavated ramparts at Finavon, *c* 5–6.5m (Alexander 2002: 52), and Craig Phadrig, *c* 6 m (Small & Cottam 1972: 15).

The collapsed rampart comprised two distinct contexts (illus 3). The upper context (C1002) was mostly loose stone and associated with medieval pottery (Derek Hall pers comm). The lower context (C1003) was more compact and contained large quantities of charcoal and no medieval pottery. Under context 1003 was a substantial charcoal rich deposit (C1004; illus 3), which in turn lay upon the natural clay (C1006). There was no



ILLUS 3 Trench plan and section

indication of internal features, although the internal area exposed was very small.

It is argued that the upper rampart collapse may be connected with the robbing of the rampart to the build the later tower house. The lower two layers (C1003 and C1004) are argued to be primary material deriving from the vitrification of the rampart. The lower layer (C1004) is assumed to represent a solid mass of fuel placed on the inside of the rampart, while the upper layer (C1003) is a mixture of collapsed rampart and fuel.

It is hypothesised that the wood from which the charcoal derived may have been either fuel gathered for the vitrification process or some form of collapsed wooden structure to the interior of the rampart, but explicitly not timber used to lace the rampart. The presence of the hazel rods within the assemblage may be explained as the remains of wickerwork structures, perhaps walling or roofing. Of course, it is also possible that this material may already have been on site and its location within and under the collapsed rampart is a product of residuality; however, it is argued that there was simply too much charcoal for it to be anything but in situ.

A piece of hazel charcoal from C1004 was radiocarbon dated (at 2 sigma) to 370–160 cal BC, while a second piece of charcoal from C1003 was dated (at 2 sigma) to 390–190 cal BC (Table 1). The dates are statistically

Sample	*Material*	*Context*	*Description*	*Depositional Context*	*Uncal BP*	*Calibrated 1-sigma*	*Calibrated 2-sigma*	*Delta-^{13}C %*
SUERC-28730	charcoal	1003	Burnt wood within collapsed rampart	Primary	2210 ± 35	330–270 BC (28.0%) 260–200 BC (32.1%)	390–190 BC	–25.0
SUERC-22161	charcoal	1004	Burnt wood at base of collapsed rampart	Primary	2180 ± 30	360–280 BC (44.7%) 240–160 BC (23.5%)	370–160 BC	–25.9

TABLE 1
Radiocarbon dates from Dunnideer. The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal3 http://www.rlaha.ox.ac.uk/oxcal/oxcal.htm)

indistinguishable. They do not date the destruction of the fort but rather the point at which the wood source of the charcoal was chopped down; thus they predate the firing of the fort. However, it is likely that the hazel was cropped within 10 years of its combustion (Anne Crone pers comm) and may be considered as a *terminus post quem* for the destruction of the ramparts. In addition, assuming that the source of the dates represents material from structures to the inside of the rampart, this may give a broad date for the internal use of the site.

In October 2010, at the behest of the author, Dr Mark Houndslow of Lancaster University's Centre for Environmental Magnetism and Palaeomagnetism, together with Sam Harris of the University of Bradford, took six archaeomagnetic samples from the vitrified rampart material next to the author's excavation trench (Harris & Houndslow 2010). The combined samples give a date range of between 606–257 BC at 2 sigma (ibid), which represents a *terminus ante quem* for the destruction of the rampart.

Taken together, the radiometric and archaeomagnetic dates indicate that Dunideer's destruction most likely occurred in the third quarter of the 1st millennium BC (*c* 500–250). While this fits with the broader interpretation of destruction in the second half of the 1st millennium BC outlined above, it is clear that Gentles' (1993) evidence indicates a point of destruction in the last two centuries BC. While it is possible that one or other of the existing data sets are wrong, for the sake of argument it is assumed that both sets of dates are correct (and indeed anything other is beyond the scope of this current paper). We are left with two potential scenarios: the first, that oblong forts are constructed and destroyed across the closing four centuries BC; the second, that they have a much tighter floruit, which corresponds to the overlap

between the two sets of dates (ie *c* 300–150 BC). At present there is no way to distinguish between the two hypotheses, although on balance a tighter date range is preferred by this author.

DUNNIDEER AND THE HILLFORTS OF STRATHDON

It is not proposed to report the results of the Hillforts of Strathdon Project here and indeed at the time of writing the post-excavation programme is still ongoing. I intend to publish the key results from each of the sites individually and then to combine the overall results with those of the unenclosed sequence excavated by the author at Kintore (Cook & Dunbar 2008; Cook et al forthcoming). However, the interim results (Cook 2010) indicate that there are three periods of enclosure in Strathdon: the Late Bronze Age (*c* 1000 BC), the Middle Iron Age (*c* 500–200 BC) and the Early Historic Period (*c* AD 400–600). Within the Middle Iron Age Period there are in fact two patterns: a variety of locations of construction styles around 500 BC and then towards 400–200 BC a smaller number of site and locations of which the oblong forts of Tap o'Noth and Dunnideer are the only

ILLUS 4 Rampart inner face after excavation

examples. Indeed these are the latest hillforts constructed in Strathdon until *c* AD 400–600. It is also clear that there is no obvious chronological or geographical pattern to the proposed RCAHMS classification scheme. This same impression of complexity, without obvious pattern is also found in East Lothian (Haselgrove 2009).

At around *c* 400–200 BC, within the unenclosed settlement sequence at Forest Road, Kintore (Cook & Dunbar 2008: 345–6), there are clear indications of a transition from single isolated roundhouses to clusters of two or more structures showing different styles of architecture. In addition, at the end of the Middle Iron Age (*c* 200–50 BC), the unenclosed settlement sequence comes to an end and shifts to different locations in the wider area (ibid).

The precise circumstances and causes of enclosure have been discussed at length elsewhere (for example, Ralston 2006; Armit 2007; Brown 2009) and the appearance and/or increase in the presence of enclosure is put down to a variety of reasons from an increasingly unstable society to social competition and prestige.

If we compare the unenclosed settlement sequence from Kintore to the enclosed sequence from Strathdon it appears that in the Iron Age of Strathdon, hillforts most frequently occurs when households comprises individual isolated roundhouses. As the roundhouses begin to cluster, there is a decrease in the number of hillforts and a change in a dramatic change in their architecture. The construction and subsequent destruction appear of Dunnideer represent both a distinctive change in hillfort architecture and potentially an end to the practice of enclosure for the next 400–600 years. Certainly, elsewhere across eastern Scotland oblong forts are the final phase of enclosure on other sites (RCAHMS 2007: 101) and the nature of the change implied by the construction of the oblong, gateless enclosures has been highlighted by Dunwell and Strachan (2007: 93) in relation to the White Caterthun, Angus. It seems possible that the termination of hillfort construction in Strathdon and the shift in unenclosed settlement patterns at Kintore are connected, but in quite which way is uncertain and beyond the scope of this paper.

CONCLUSION

This is clearly not the final word on oblong forts, merely a further footnote in the centuries of research into these enigmatic sites. However, the Dunnideer results adequately demonstrate the benefits to be derived from targeted keyhole community excavation. If this approach were repeated across Scotland we could transform our understanding of the record in a generation.

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