



ARO34: Past the Cemetery Gates: A multiperiod site at Kirkton of Fetteresso, Stonehaven, Aberdeenshire

by Robert Lenfert and Alison Cameron

with contributions from Laura Bailey, Torben Bjarke Ballin, Paul R J Duffy, Tim Holden and Julie Lochrie

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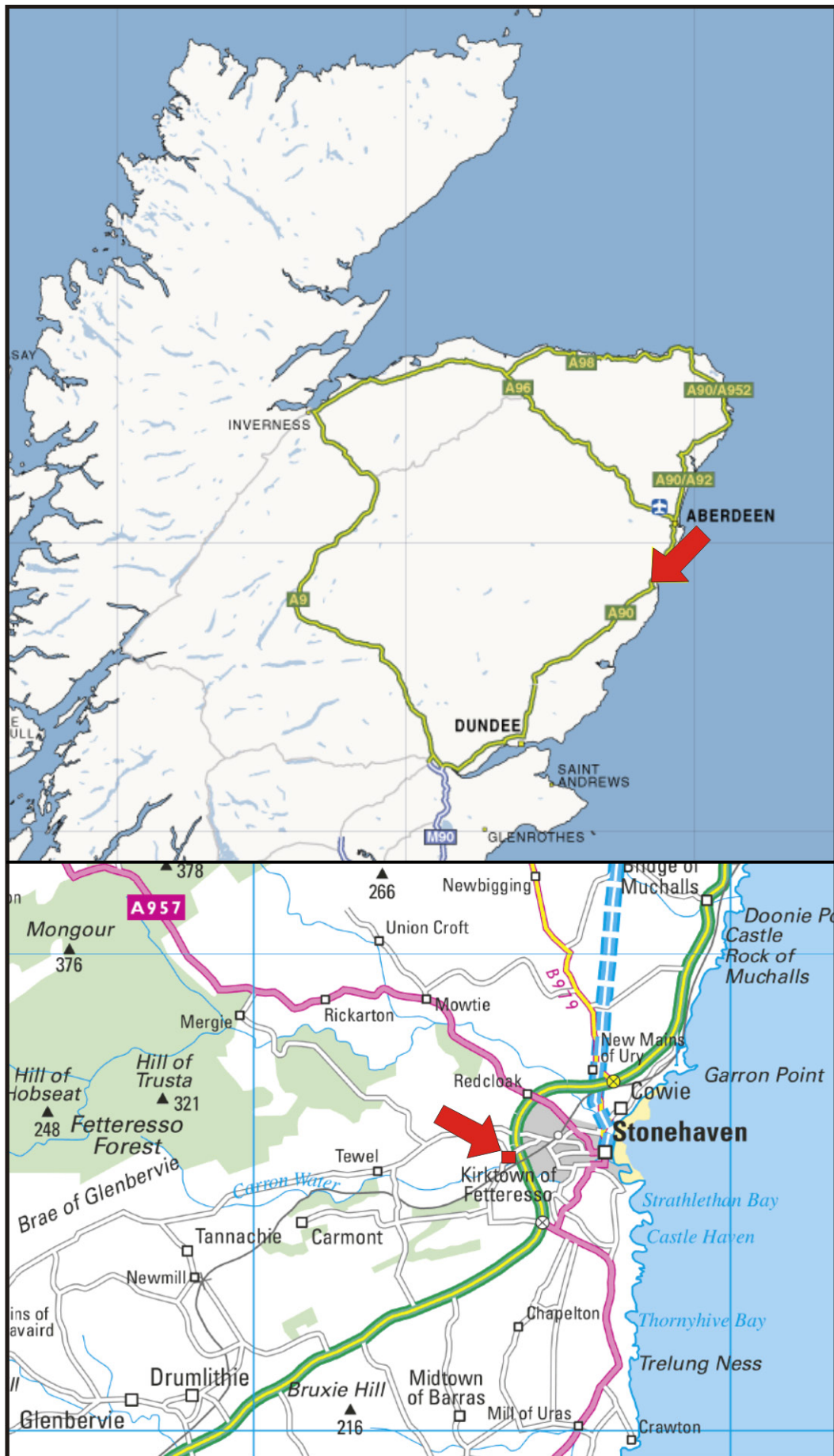


Figure 1: Kirkton of Fetteresso location plan (Contains Ordnance Survey data © Crown copyright and database right 2018).

Summary

Archaeological excavations at Kirkton of Fetteresso, Stonehaven, revealed a palimpsest of human occupation and activity spread over at least four and a half millennia from the early Neolithic to the early medieval period. Despite often heavy truncation, extensive rabbit burrowing and agricultural damage, a total of 25 features were identified, including a partial ring ditch, pits, postholes and at least one human cremation burial in addition to two other possible cremations and lithic artefacts. Most notably, a single pit contained 306 sherds of early Neolithic pottery was discovered.

Introduction and background

A seven per cent archaeological evaluation was carried out at Kirkton of Fetteresso from 6 to 7 June 2013, followed by a watching brief and subsequent excavations that took place from 28 October to 6 November 2015 in advance of new housing construction.

The site (Figures 1 and 2) is centred on NGR: NO 85377 85884, and was situated 2.2 km due west of Stonehaven and immediately west of the modern A90 trunk road. It lay within a valley,

which extends 9 km inland from the coast, before reaching a range of hills throughout Durriss and Fetteresso Forests, which isolates the coastal areas around Stonehaven from the Dee Valley to the north. The watching brief area was positioned upon a small hillock at c. 50 m OD adjacent to the modern cemetery overlooking the Cheyne Burn to the south. The site was near its confluence with the larger Carron Water, which flows into Stonehaven Bay. The bedrock of the area is sandstone of the Cowie Sandstone Formation with superficial deposits of clay, silt sand, gravel and boulders (British Geological Survey 2019).

Prior to the archaeological evaluation, the prehistoric landscape surrounding Kirkton of Fetteresso was known to contain a relatively dense distribution of prehistoric features, including a pit alignment, souterrain, an unenclosed settlement, linear cropmarks, an enclosure, prehistoric pottery including urns, at least one cremation burial, unknown quantities of human bone and at least two cist burials – all within c.400 m of the site. Directly adjacent to the north-west cemetery wall, four hectares of fields are listed as a Scheduled Monument (SM5449), while the remaining sites from the National Record of the Historic Environment surround the cemetery in all cardinal directions.

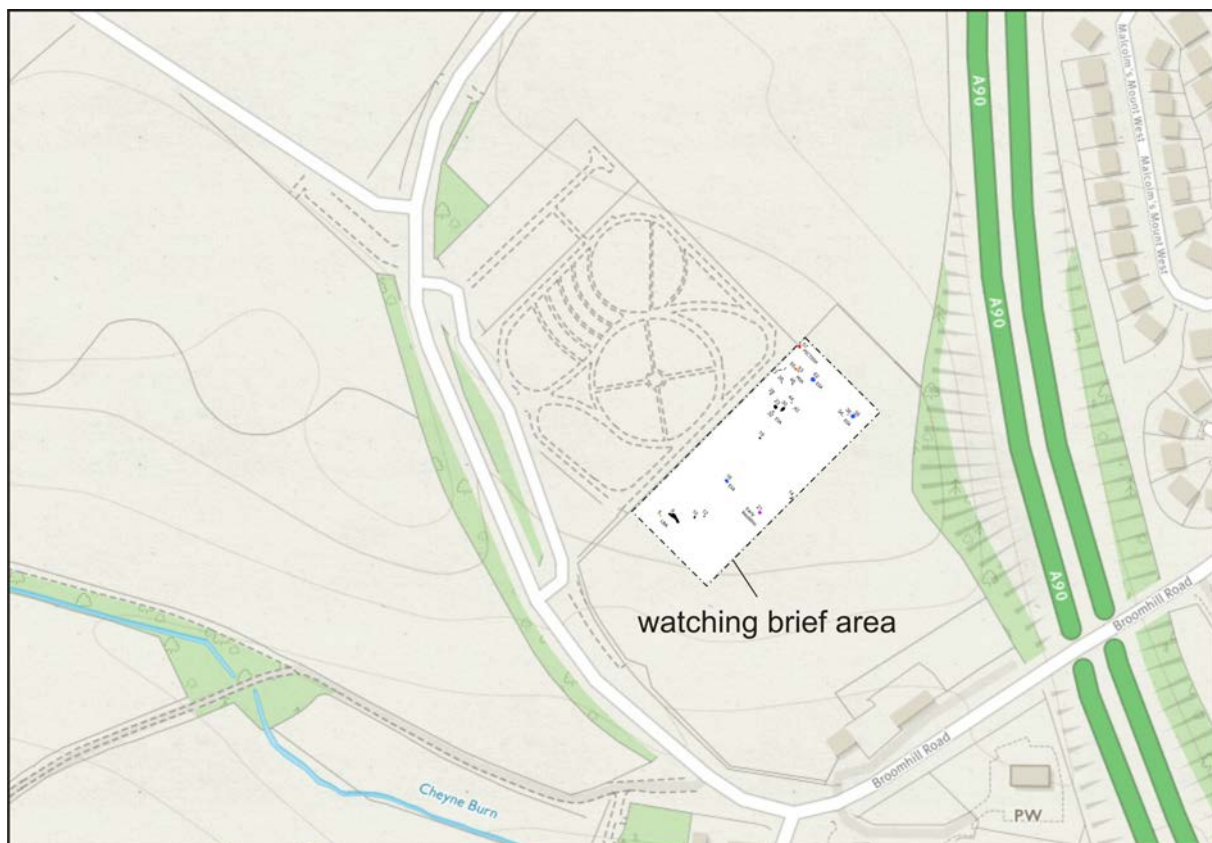


Figure 2: Kirkton of Fetteresso watching brief detailed location (Contains Ordnance Survey data © Crown copyright and database right 2018).

Unfortunately, modern construction over the past century has taken a heavy toll on large portions of this prehistoric landscape, although several intact pockets remain, particularly to the west and north. Construction of the modern cemetery at Kirkton of Fetteresso, sometime around the end of the nineteenth century, sits on top of the central and most prominent portion of the hillock, thus placing the cemetery directly within this substantial and significant prehistoric landscape. The construction of the A90 and modern housing to the east also appears to have destroyed a prehistoric burial ground containing an unknown number of urns, cist burials and human bones. Beyond the three cists noted on the 1892-1905 25-inch OS map, 'Camp Hill' (now the A90 and the Malcolm's Mount housing estate to the east) is annotated with the following remarks: "Human bones and urns found in various places on the south side of this hill".

The excavations, which covered an area 50 m by 120 m (aligned NW/SE by NE/SW, revealed a total of 25 features, with many heavily truncated by rig and furrow, modern ploughing or extensive rabbit burrowing. Despite this, a number of intact features were identified. Collectively, the pits, postholes and possible hearths appear to represent at least three structures, as well as several outlying ones, which may be trace remains of additional structures. Artefacts included 306 sherds of very early (late fourth century millennium BC) date, Neolithic carinated pottery sherds from a single pit (F21), in addition to three early Neolithic tools: a scraper/knife, a large blade and a microblade. Elsewhere, coarse, undecorated Iron Age pottery sherds were recovered, along with additional lithic artefacts primarily in the form of small flakes and chips.

Heavily cremated bone was recovered from five features: one (F57, Pictish period) contained cremated human bone, while two others (F21 and F62, early Neolithic and early Iron Age respectively) contained possible human bone. The bone in the other two features was cremated to such a degree that identification as animal or human bone was not possible. Carbonised cereal grains were also present, particularly in three early Iron Age pits (F34, F36 and F38) and also the fill of a sub-rectangular pit (F57), which was radiocarbon dated to the middle sixth to the middle seventh centuries AD. Radiocarbon dating alongside analysis of the pottery and

lithic artefacts recovered from the excavation has revealed something of a palimpsest, with sporadic activity dating to the early Neolithic, late Bronze Age, early and middle Iron Ages, and the early Medieval/Pictish Periods, followed by the development of later Medieval rig and furrow cultivation. Considering the relatively small size of the site this repeated use indicates that this area was of some significance to the prehistoric and early medieval inhabitants of the area.

The excavation

from the identification and excavation of two middle Iron Age pits (F1 and F3) by the cemetery wall during the evaluation, a further 23 features were located and subsequently excavated (Figure 3). The extensive rig and furrow cultivation across the whole excavated area accounted for the generally poor preservation of features. However, some survived to a greater depth on the south-east side of the watching brief area where the soils were deeper.

The excavated features are described chronologically below.

Early Neolithic: Pit F21

Neolithic site activity was represented by a solitary pit (F21) which was 1.25 m in diameter and survived to 0.4 m in depth (Figure 4, Plate 1). Its lower fill consisted of a dark grey sandy loam which contained 306 sherds of early Neolithic carinated pottery. In addition, two flints (SF6 and SF7) and several small fragments of burnt bone were also present within the fill including a possible human tooth. The thin upper layer filling the pit was sterile stony subsoil and sand, which was likely redeposited by the agricultural activity that spread material across the upper layers of the site.



Plate 1: Early Neolithic pit F21 during excavation showing pottery finds.

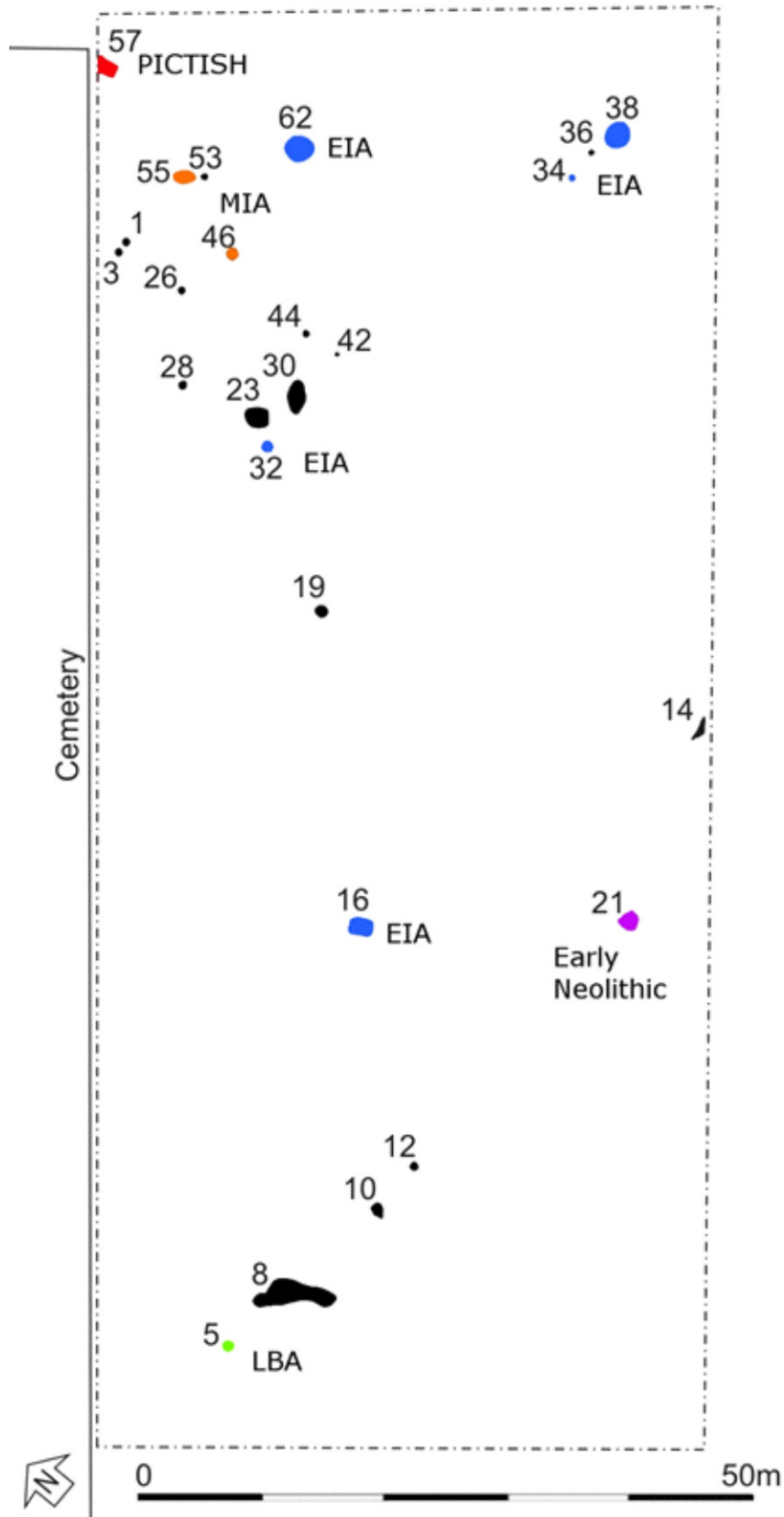


Figure 3: Kirkton of Fetteresso site plan.

Coloured features have radiocarbon determinations placing them in the following groups: purple – early Neolithic, blue – early Iron Age, orange – middle to later pre-Roman Iron Age, red - early Medieval/Pictish. Black features are undated.

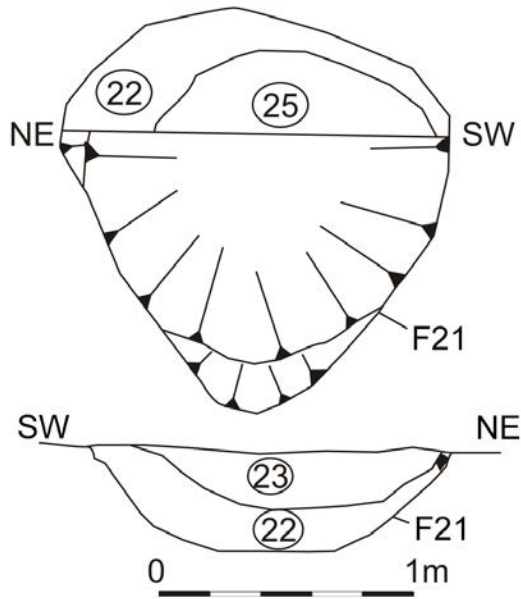


Figure 4: Plan and section of early Neolithic pit F21.

Late Bronze Age: Feature Group 2 - F5, F8, F10 and F12



Plate 2: Ring ditch fragment F8 pre-excitation; facing NW.

A fragment of ring ditch F8 (Plate 2) was revealed as a shallow, heavily truncated hollow 6.6 m

long, with a maximum width of 1.7 m. The ditch survived to a maximum depth of just 0.18 m while the remaining associated structure consisted of stones bedded into the sandy natural subsoil. A small quantity of charcoal and dark grey loam trapped between several of the stones survived ploughing and was sampled. Another possible fragment of ring ditch, F10 (Figures 5 and 6) measured 0.9 by 0.7 m and consisted of rounded stones set into the subsoil to a maximum of 0.1 m depth. As with F8, a small quantity of black sandy loam was sampled from around the stones.

Posthole F5 (Figures 5 and 6) measured 0.8 by 0.9 m, and survived to a maximum depth of 0.22 m. It had a flat base and steep sides with packing stones and charcoal-rich grey loam in its centre. The possible posthole base (F12) was round-bottomed, 0.7 m in diameter and survived to 0.2 m in depth. F12 was also filled with the same type of black loam and charcoal noted above.

Early Iron Age: F16, Feature Group 3 - F34, F36 and F38 (Figure 7 and 8) and Feature Group 1 – F19, F23, F28, F30, F32, F42, F44, and F62 (Figures 9 and 10)

Pit F16 (Figure 3) was a solitary, sub-circular area of topsoil and charcoal with extensive animal burrowing. It measured 1.4 by 0.7 m with a maximum depth of 0.14 m. Its central circular area c. 0.55 m diameter was filled with mostly charcoal (17) and surrounded by topsoil (18). An environmental sample containing charcoal was dated to 406–591 cal BC (SUERC-67580).

Two postholes F34 (Plate 3) and F36 and a pit F38 (Plate 4, Figures 7 and 8) appear to be structural remains. They were dug into the sand at the east corner of the watching brief area on an area of slightly raised ground which sloped down to the north and east. Posthole F34 was 0.61 m in diameter and survived to 0.65 m in depth, while F36 measured 0.5 m in diameter and 0.6 m in depth. They both had in situ packing stones and the remains of burnt posts (60/52). Pit F38 was 1.1 m wide and 1.98 m long and 0.25 m deep. It was filled with grey brown sandy loam and charcoal with lenses of sandy gravels washed in from the side (Figures 7 and 8). Four sherds of prehistoric pottery were found in posthole F34, but no other finds were recovered from these features.

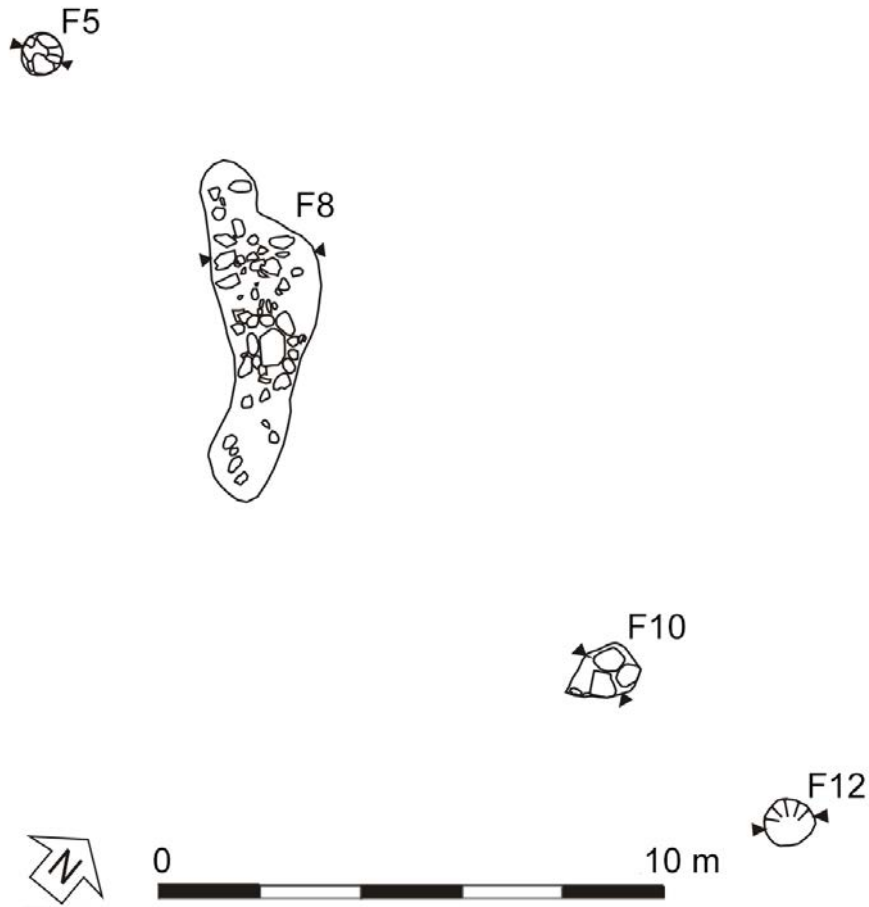


Figure 5: Plan of Feature Group 2 - F5, F8, F10 and F12.

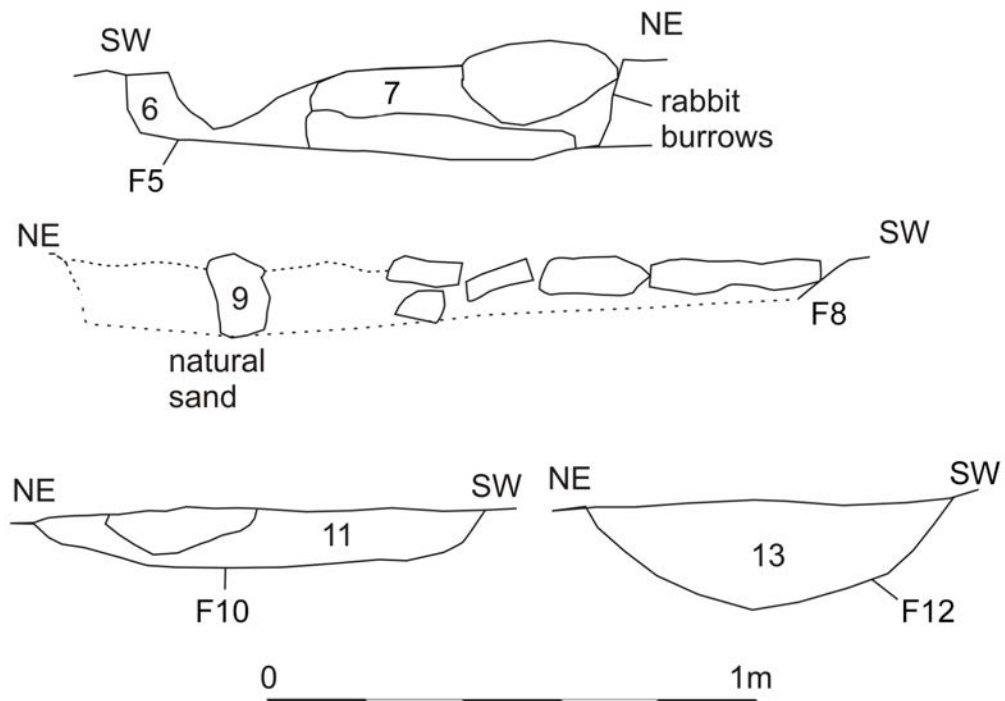


Figure 6: Sections Feature Group 2 - F5, F8, F10 and F12.



Plate 3: Pit F38 (left) and posthole F34 (right) pre-excitation; facing NE.



Plate 4: Pit F38 half-sectioned; facing NW.

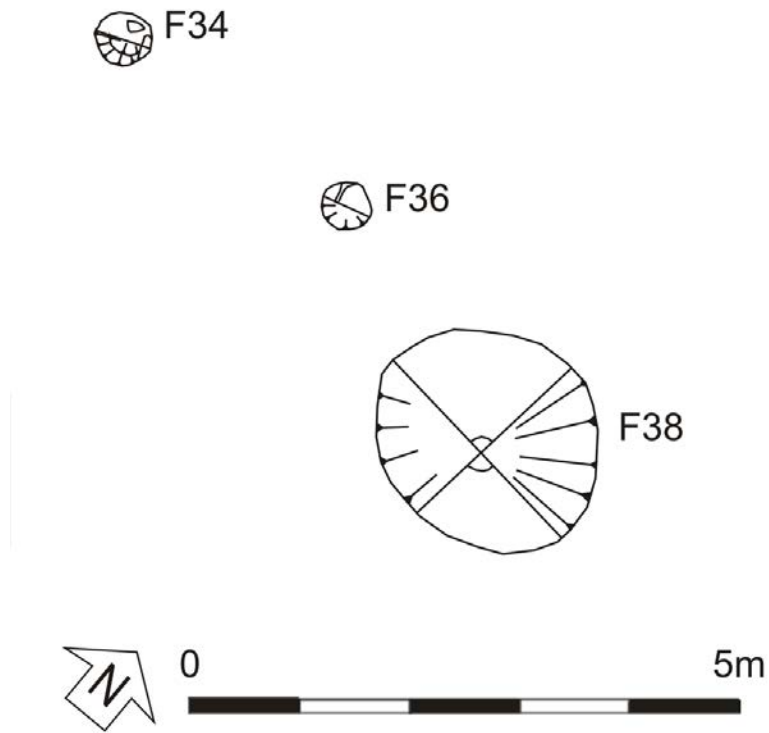


Figure 7: Plan of Feature Group 2 F34, F36, F38.

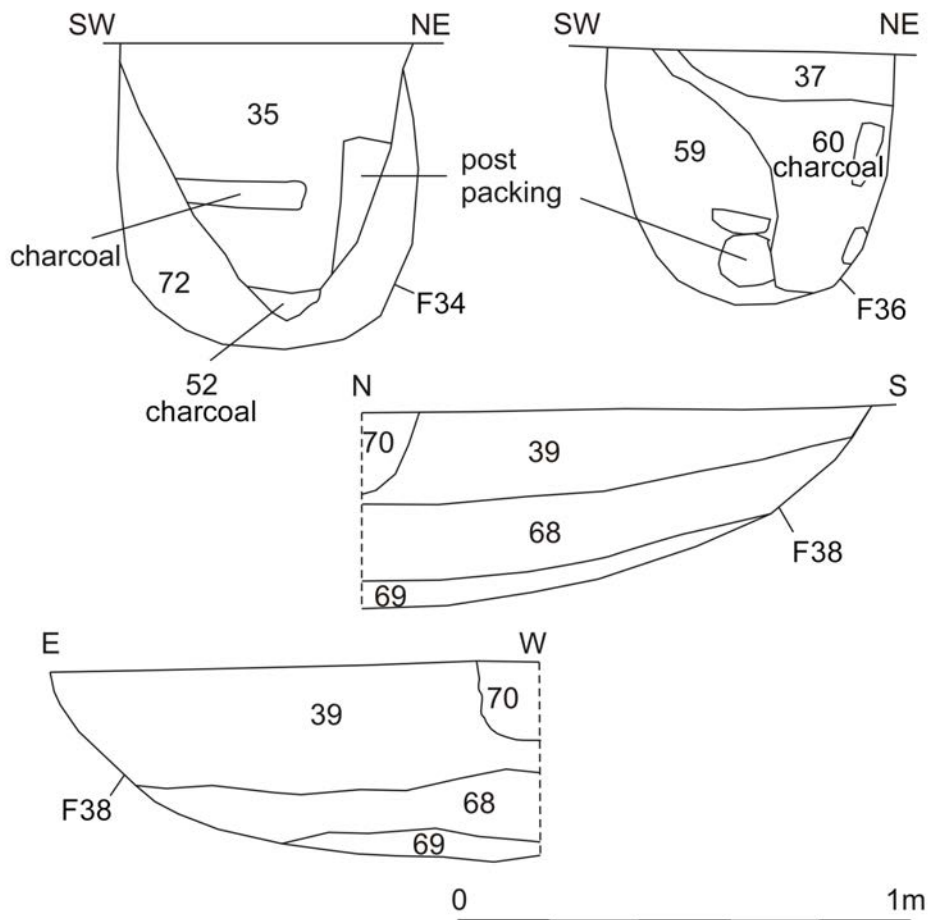


Figure 8: Sections of Feature Group 2 F34, F36, F38.

F62 (Plate 5, Figure 9) was a circular area of large flat stones at the NW end and a shallow circular depression to the SE where it is likely that stones were ploughed out. There was a thin layer of dark grey loam between the stones and this was sampled. A fragment of burnt animal bone and a possible human long bone fragment were recovered. F62 presents some challenges in interpretation as it sits relatively close to the middle Iron Age cluster of features (below). A sample of charcoal was dated to 541–695 cal BC (SUERC-67582).

F19 existed as a steep-sided circular but flat-based pit or posthole base 1 m in diameter and 0.15 m deep and filled with grey sandy gravel. There were very slight traces of possible metalworking residue along with lithic chips and charcoal inclusions. This feature is isolated in relation to others of similar date, so it remains something of an anomaly – although given the possible metalworking residue, it is most likely related to F32, 15 m to the north. F23 was a pit 1.75m wide and 0.5 m deep with steep sides and a rounded base, which was filled with rounded small- to medium-sized stones. There was little soil and no charcoal or finds in the fill.

Pit F28 was a shallow scoop filled with charcoal fragments up to 40 mm across, in addition to trace quantities of hazelnut shells. The feature

measured 0.3 m in diameter by 10 mm deep. Pit F30 existed as a shallow deposit of charcoal, with individual pieces ranging up to 30 mm across. There were also very slight, residual traces of iron slag in the fill. Posthole F42 contained small traces of charcoal, posthole F44 contained very small fragments of burnt bone and nutshell, along with small pieces of charcoal under 9 mm across. Posthole F53 contained slight traces of cremated bone with occasional nutshell and charcoal fragments, under 15 mm across. Effectively, F42, F44 and F53 (below) appear to be the bases of round postholes with burnt wood in situ, though their relationship is difficult to ascertain as the first two appear to be more closely aligned with F32 and its early Iron Age date, while F53 is located very close to F55, which returned a middle Iron Age radiocarbon determination.



Plate 5: Circular stone-filled feature F62 half-sectioned; facing SW.

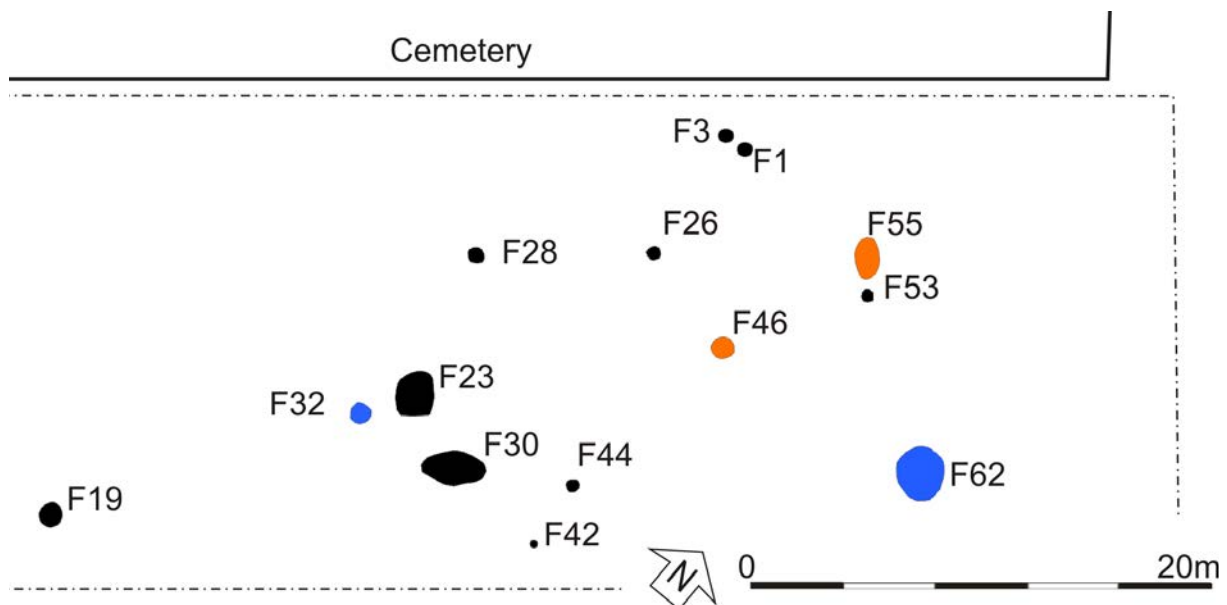


Figure 9: Plan of Feature Group 3 F23, F28, F30, F32, F42, F44 and F62.

Middle to Late Iron Age: F46 and F55, possibly F1, F3, F26 and F53 by association

Pit F55 and posthole F46 (Figures 9 and 10, Plate 6) both returned radiocarbon dates placing them in the middle Iron Age or on the cusp of the late Iron Age in a pre-Roman context. Pit F55 (Plate 7) contained charcoal dated to 51–205 cal BC (SUERC-67588) and F46 charcoal dating to 351–401 cal BC (SUERC-67583).



Plate 7: Posthole F53 (left) and pit F55 (right); facing NE.



Plate 6: Pit F46 half-sectioned; facing SE.

Clustered in the immediate vicinity were pits F1, F3, F26 and posthole F53 (Figure 9). F1 and F3 existed as single context pits at the NE end of the evaluation but were discovered to be heavily truncated by ploughing the shallow topsoil. Their fills contained a reddish-brown silty-sand with one fragment of burnt animal bone (see bone report below) recovered from each feature. These pits were located the highest point of the

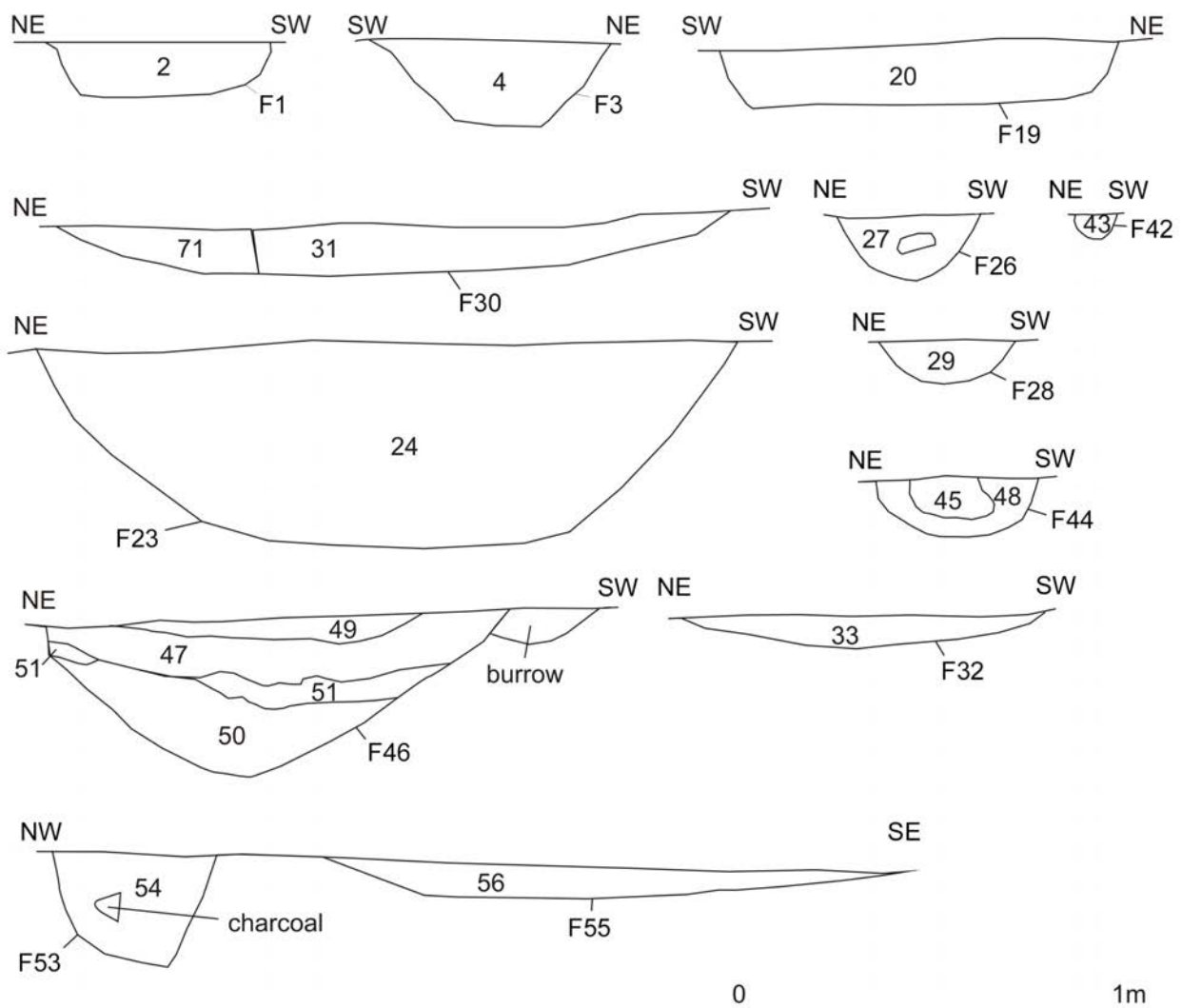


Figure 10: Sections of Feature Groups 1 and 3.

flat-topped hill at 54.5 m OD. Finally, a gently rounded pit F26, was discovered to be 0.30 m in diameter and 0.25 m deep, containing both a reddish-brown silty-sand and a dark grey loam lens which suggests that the pit was either left open for some period of time or subject to rabbit burrowing (not immediately evident) at some point post-abandonment.

Early medieval Period: pit F57

F57 (Figure 11, Plates 8 and 9) is a sub-rectangular pit 1 m long and 0.6 m wide and a maximum depth of 0.25 m. Its upper fill was topsoil and the bottom fill of charcoal and loam extended over its flat base and up its east side. Fragments of burnt bone (SF12) were found in the lower fill including a cremated human rib and a proximal end of a first metatarsal, as well as burnt animal bone. A copper alloy buckle fragment (SF11) was found in the topsoil just above the feature but it dates to a later period. The feature was heavily disturbed by rabbit burrowing but it returned a radiocarbon date of 559–653 cal AD (SUERC-67589). Its sub-rectangular shape may suggest that it may be the remains of a burial, but a fuller interpretation is not possible given its poor preservation, the removal of any structure, and disturbance of its fill.



Plate 8: Rectangular pit F57 pre-excitation; facing NE.



Plate 9: Rectangular pit F57 post-excitation; facing NW.

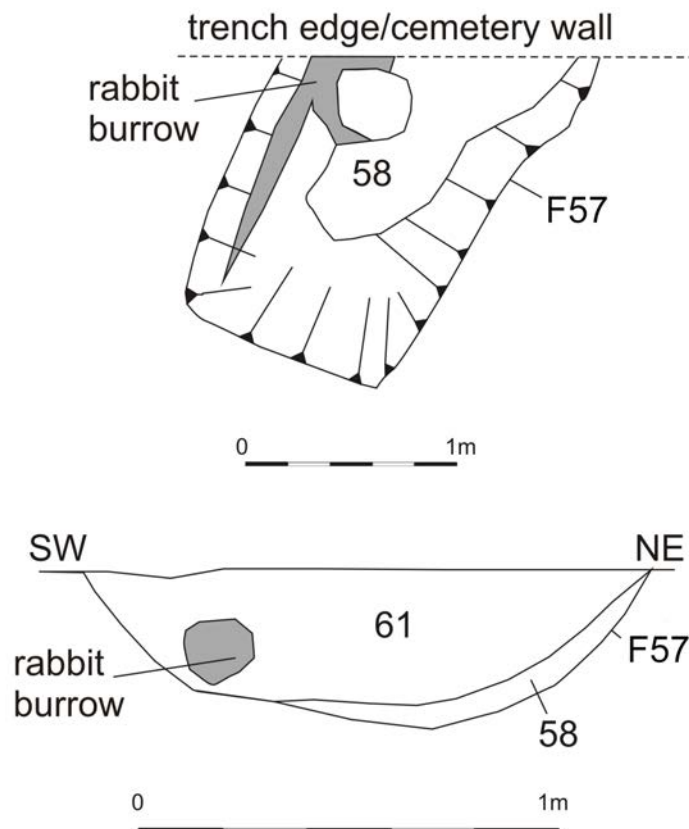


Figure 11: Pit 57 plan and section.

Feature 14

At the SE edge of the trench (Figure 3) was a shallow depression F14 (Figure 12, Plate 10), which measured 1.2 by 0.4 m with a maximum depth of 0.09 m filled with charcoal residue. There were a small number of stones in the fill, but no observable structure, e.g. packing stones. As a result, given the constraints of the post-excavation budget and the remote location of F14 in relation to the other features, it was not subjected to radiocarbon determinations.

Medieval or post-medieval rig and furrow

Rig and furrow cultivation ran NW/SE across the watching brief area, surviving 1 m in width and c. 8 m apart, though only up to 40 mm in depth. They had cut through and truncated many features, and together with later agricultural activity and associated rabbit burrowing, severely damaged the archaeological remains.

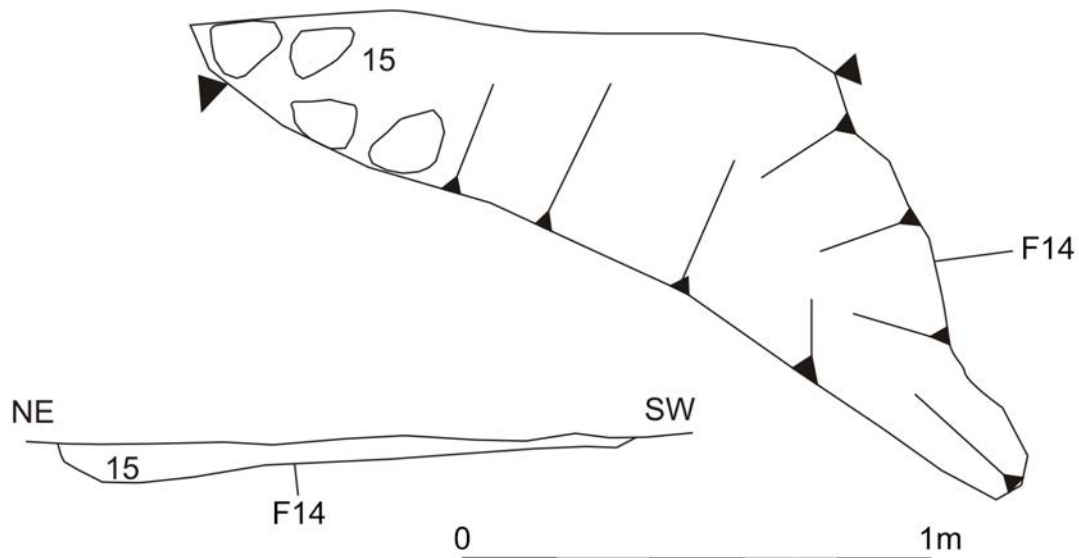


Figure 12: Plan and section F14.



Plate 10: Charcoal patch F14; facing SE.

The specialist reports

Environmental assessment

by Julie Lochrie, Laura Bailey, Tim Holden

Introduction and methodology

Thirty-two soil samples were received for palaeoenvironmental assessment from the site which comprised the remains of a prehistoric settlement. The samples were from the fills of pits, postholes and possible hearths and ranged in volume from 5 to 20 litres. The aims of the assessment were to assess the presence, preservation and abundance of environmental remains in the samples and to characterize the assemblage as far as possible.

Bulk samples were subjected to flotation and wet sieving in a Siraf-style flotation machine. The floating debris (the flot) was collected in a 250 µm sieve and once dry, scanned using a binocular microscope. Any material remaining in the flotation tank (retent) was wet-sieved through a 1 mm mesh and air-dried. All samples were scanned using a stereomicroscope at magnifications up to x45. Identifications, where provided, were confirmed using modern reference material and seed atlases including Cappers et al. (2006) and Zohary et al. (2012).

Results of the assessment are presented in Table 2 (retent samples) and Table 3 (flot samples). Samples with material suitable for AMS (Accelerated Mass Spectrometry) radiocarbon dating are indicated in the tables. Ten samples were submitted for dating and results are included in Table 1.

Wood charcoal

Almost all samples contained wood charcoal. Significant concentrations of charcoal were present in the fill (058) of pit (057), the fill (047) of posthole (046), the fill (022) of pit (021) and hearth deposits (016) and (017). The charcoal was generally well preserved, although in some cases it was heavily fragmented. Where preservation allowed, charcoal from the flots was categorized as either oak or non-oak. Both oak and non-oak were identified.

Cereal grain and chaff

Cereal remains were present in 16 samples. Both hulled (*Hordeum vulgare*) and naked barley (*Hordeum vulgare* var. *nudum*) were identified in the samples together with a small number of oat grains (*Avena* sp.). Naked barley was the most commonly identified grain, present in 11 samples. Generally, the cereal was well-preserved and relatively unabraded. In some samples,

Lab Code	δ13C	Context	Description	Material	Radiocarbon Age BP	94.5% probability
SUERC-67581	-27.6 ‰	6	Fill of posthole 5	Charcoal: <i>Corylus avellana</i>	2838±29	1107–1102 cal BC 1087–915 cal BC
SUERC-67580	-26.7 ‰	17	Deposit in hearth 17	Charcoal: <i>Salix</i> sp.	2433±29	750–683 cal BC 668–638 cal BC 591–406 cal BC
SUERC-67591	-25.3 ‰	22	Fill of pit 21	Charcoal: <i>Corylus avellana</i>	5042±29	3952–3766 cal BC
SUERC-67590	-25.9 ‰	33	Fill of pit 32	Charcoal: <i>Corylus avellana</i>	2453±29	755–680 cal BC 671–607 cal BC 596–413 cal BC
SUERC-67584	-25.9 ‰	35	Fill of posthole 34	Charcoal: <i>Alnus glutinosa</i>	2506±29	788–701 cal BC 696–540 cal BC
SUERC-67583	-27.9 ‰	50	Fill of posthole 46	Charcoal: <i>Salix</i> sp.	2272±29	401–351 cal BC 301–210 cal BC
SUERC-67588	-26.8 ‰	56	Fill of pit 55	Charcoal: <i>Corylus avellana</i>	2118±29	342–327 cal BC 205–51 cal BC
SUERC-67589	-22.7 ‰	58	Fill of pit 57	Cereal grain: <i>Hordeum vulgare</i>	1448±32	559–653 cal AD
SUERC-67582	-28.4 ‰	64	Fill of feature 62	Charcoal: <i>Alnus glutinosa</i>	2514±29	792–727 cal BC 718–706 cal BC 695–541 cal BC
SUERC-67579	-22.0 ‰	70	Post in posthole 38	Cereal grain: <i>Hordeum vulgare</i> var. <i>nudum</i>	2487±29	776–509 cal BC 498–494 cal BC

Table 1: Radiocarbon dates.



Context	Sample	Feature	Sample Vol (l)	Pottery	Stone / lithics	Industrial Waste		Burnt bone		Charred cereal grain	Charred nutshell	Charcoal		Material for AMS dating	Cinders	Comments
						Fe slag	Mag res	Mammal	Unburnt bone			Quantity	Max Size (mm)			
2	1	Fill of pit F1	10					+	+		+	++	8	No		Nutshell <0.1g. Bone <0.1g
4	2	Fill of pit F3	10		+	++		+			+	+	8	No		Nutshell <0.1g. Bone <0.1g
6	7	Fill of posthole 5	20		+							++++	23	Charcoal		Charcoal oak and non-oak
9	25	Fill of ring ditch 8	5		+						+	++	18	Charcoal		Nutshell <0.1g. Charcoal oak and non-oak
11	9	Fill of ring ditch 10	10					+				+++	23	Charcoal		Charcoal oak and non-oak
13	11	Fill of posthole 12	15		+			+				+++	20	Charcoal	+	Charcoal oak and non-oak
15	5	Deposit in hearth 16	15		+			+				++++	16	Charcoal		Bone <0.1g. Charcoal oak and non-oak
17	4	Deposit in hearth 17	5		+							++++	20	Charcoal	+	Charcoal oak and non-oak
20	8	Fill of posthole 19	10		+						+	++	11	Charcoal		Nutshell <0.1g. Charcoal non-oak
22	22	Fill of pit 21	10	++++	+++				+++		++	++++	15	Charcoal and nutshell		Nutshell 2g. Bone 2g. Charcoal oak
22	24	Fill of pit 21	10	++	++				++		++	+++	15	Charcoal		Nutshell <0.1g. Bone 3.7g. Charcoal non-oak
24	17	Fill of pit 21	5					+			+	++	5	No		Nutshell <0.1g. Bone <0.1g
27	18	Fill of pit 26	5	+		++		+	+			+	5	No		Nutshell <0.1g. Bone <0.1g
29	26	Fill of pit 28	5					+			+	+++	40	Charcoal		Nutshell <0.1g. Charcoal oak and non-oak
31	21	Fill of pit 30	15			+						+++	30	Charcoal		Charcoal non-oak
33	27	Fill of pit 32	10		+							+++	27	Charcoal	+	Nutshell <0.1g. Charcoal non-oak
35	16	Fill of posthole 34	5		+					++++	+	+++	20	Cereal and charcoal		Nutshell <0.1g. Charcoal oak and non-oak
35	31	Fill of posthole 34	10		+					++++	+	+++	28	Charcoal and cereal		Charcoal oak and non-oak. Barley

Table 2: Retent sample results.



Context	Sample	Feature	Sample Vol (l)	Pottery	Stone / lithics	Industrial Waste		Burnt bone		Unburnt bone		Charred cereal grain	Charred nutshell	Charcoal		Material for AMS dating	Cinders	Comments
						Fe slag	Mag res	Mammal	Mammal	Quantity	Max Size (mm)							
37	32	Fill of posthole 36	5									+++		++++	20	Charcoal and cereal		Charcoal non-oak. Barley
39	28	Fill of pit 38	10		+								+	++	11	Charcoal		Nutshell <0.1g. Charcoal non-oak
43	6	Fill of posthole 42	2											++	9	No		
45	19	Fill of posthole 44	5					+					+	++	5	No		
47	29	Fill of posthole 46	10		+									++++	17	Charcoal		Charcoal non-oak
50	13	Fill of posthole 46	15											++++	20	Charcoal		Charcoal oak and non-oak
52	10	Fill of posthole 34	5									++	+	+++	19	Charcoal		Nutshell <0.1g. Charcoal oak and non-oak. Barley
54	30	Fill of posthole 53	5					+					++	++	15	Charcoal		Nutshell 1.4g. Bone <0.1g. Charcoal non-oak
56	20	Fill of pit 55	5					+					++	++	20	Charcoal		Bone <0.1g. Charcoal oak and non-oak
58	23	Fill of pit 57	15		+		+	+++				++	+++	++++	15	Charcoal, nutshell and cereal		Nutshell 2.9g. Bone 2.7g. Charcoal non-oak. Barley
63	14	Fill of feature 62	10											++	5	No	+	
64	12	Fill of feature 62	12					+					+	++	15	Charcoal	+	Nutshell <0.1g. Bone <0.1g. Charcoal oak
69	15	Fill of pit 38	5											++	5	No		
70	3	Post in posthole 38	10		+							++		+++	5	Cereal		Charcoal oak. Naked barley

Key:

+= rare (0-5)

++ = occasional (6-15)

+++ = common (15-50)

++++ = abundant (>50)

NB charcoal over 1cm is suitable for identification and AMS dating

Table 2 (continued): Retent sample results.



Context	Sample	Feature	Total flot Vol (ml)	Oat	Barley	Cereal indet.	Chaff	Hazel nutshell	Other charred plant remains	Charcoal Quantity	Charcoal Max size (mm)	Material available for AMS	Comments
2	1	Fill of pit F1	5			+				+	5	No	
4	2	Fill of pit F3	5							+	1	No	
6	7	Fill of posthole 5	600							+++	20	Charcoal	Charcoal oak and non-oak. Roundwood fragments.
9	25	Fill of ring ditch 8	50							+++	10	Charcoal	Charcoal non-oak
11	9	Fill of ring ditch 10	5			+				++	10	Charcoal	Charcoal non-oak. Cereal puffed and vesicular
13	11	Fill of post-hole 12	50			+				+++	10	Charcoal	Charcoal non-oak, contains small twigs
15	5	Deposit in hearth 16	100							+++	10	Charcoal	Charcoal non-oak
17	4	Deposit in hearth 17	10							++	10	Charcoal	Charcoal oak
20	8	Fill of post-hole 19	5							+	5	No	
22	22	Fill of pit 21	50			+				+	10	No	Charcoal oak and non-oak. Indeterminate cereal grain.
22	24	Fill of pit 21	100					+		+++	5	No	Charcoal oak and non-oak.
24	17	Fill of pit 21	5							+	1	No	
27	18	Fill of pit 26	5							+	1	No	
29	26	Fill of pit 28	100		+					+++	30	Charcoal	Charcoal non-oak. Broken hulled barley grain
31	21	Fill of pit 30	100							+++	30	Charcoal	Charcoal non-oak, abraded
33	27	Fill of pit 32	10		+					++	10	Charcoal	Charcoal non-oak
35	16	Fill of post-hole 34	200		++++				+	++	10	Cereal and charcoal	Charcoal oak. Contains naked barley. Chaff includes glume base and spikelet fork. Weed seeds include Brassica nigra, Polygonum sp. and Stellaria media.
35	31	Fill of post-hole 34	250	+	++++				+	++	10	Cereal	Charcoal non-oak. Contains hulled barley, oats. Chaff includes spikelet fork. Weed seeds include Bromus sp. and Polygonum sp.

Table 3: Flotation sample results.

Context	Sample	Feature	Total flot Vol (ml)	Oat	Barley	Cereal indet.	Chaff	Hazel nutshell	Other charred plant remains	Charcoal Quantity	Charcoal Max size (mm)	Material available for AMS	Comments
37	32	Fill of post-hole 36	200	++	++++		+		+	++	10	Cereal	Contains hulled and naked barley, oats. Glume base. Also contains Bromus sp.
39	28	Fill of pit 38	5		+	+			+	+	10	Cereal	Charcoal non-oak. 5 naked barley and Polygonum sp.
43	6	Fill of post-hole 42	5		+					+	1	No	
45	19	Fill of posthole 44	5							+	5	No	
47	29	Fill of post-hole 46	400						+	++++	20	Charcoal	Charcoal oak and non-oak. Chenopodium sp.
50	13	Fill of post-hole 46	100							+++	10	Charcoal	Charcoal non-oak
52	10	Fill of post-hole 34	5		+++					++	5	Cereal	Contains hulled barley and naked barley. Some cereal is puffed and abraded
54	30	Fill of post-hole 53	50		+				+	+++	5	No	1 grass seed and 1 barley
56	20	Fill of pit 55	5		+	+				+	5	Cereal	Charcoal oak. 3 indeterminate cereal grains
58	23	Fill of pit 57	300	+	++++		+		+	++++	10	Cereal and charcoal	Cereal includes oats, naked barley. Chaff includes a glume base. Weed seeds include Galeopsis tetrahit and Chenopodium sp.
63	14	Fill of feature 62	5							+	5	No	
64	12	Fill of feature 62	5							+++	10	Charcoal	Charcoal non-oak
69	15	Fill of pit 38	0									No	Archaeologically sterile
70	3	Post in post-hole 38	5		++++					+	5	Cereal	Naked barley

Key:

+ = rare (0-5)

++ = occasional (6-15)

+++ = common (15-50)

++++ = abundant (>50)

NB charcoal over 1cm is suitable for identification and AMS dating

Table 3 (continued): Flotation sample results.

however, the grains were heavily abraded and broken, or puffed and highly vesicular. This is likely to have been caused by combustion at high temperatures. Cereal grain was particularly abundant in six samples, from the fill (070) of pit 038, the fill (052) of posthole 034 and the fill (037) of posthole 036, features located in close proximity to one another. Cereal grain was also abundant in the fill (058) of pit 057. A small amount of indeterminate cereal chaff was found in three samples.

Hazel nutshell

Heavily fragmented hazel (*Corylus avellana*) nutshell fragments were recovered from eighteen samples. The nutshell was weighed as part of the assessment and is quantified in Table 2. Hazel nutshell was most abundant (2.9 g) in the fill (058) of pit 057.

Other charred plant remains

A small number of 'weed seeds' (here used to include seeds, fruits, achenes, caryopses etc) were present in the assemblage. The weed seeds included brome grass (*Bromus* sp.), common hemp nettle (*Galeopsis tetrahit*), knotweed (*Polygonum* sp.), fat hen (*Chenopodium* sp.), chickweed (*Stellaria media*) and small grass seeds. These weed taxa are all species common in arable fields and disturbed ground (Stace 2010). Brome grass is a regular weed of cereal crops.

Burnt bone

A small amount of heavily fragmented burnt mammal bone was present in 14 samples. The bone was weighed as part of the assessment. No identifiable elements were present as all were heavily fragmented.

Dating of charred remains

Twenty-four samples contained charred material suitable for dating (Table 2). Where both wood charcoal and grain are available for AMS dating, it was recommended that grain was used as this would provide a more refined date.

Ten samples were submitted for dating, the results ranging from early Neolithic to late Iron Age (Table 1).

Discussion

The earliest feature identified was pit (21/22), with both pottery and radiocarbon dating agreeing an early Neolithic date. Material within this pit was dominated by pottery (3.4 kg), with a little daub, charcoal, burnt bone, hazel nutshell and indeterminate cereal. The presence of burnt bone, hazelnut shell and cereal grain together with pottery is characteristic of domestic hearth sweepings and refuse. No other features could be definitively dated to this period thus it is unclear how extensive this activity was.

There appears to have been a hiatus after this. The next period of activity is later prehistoric, as evidenced by a number of radiocarbon dates. There was a particular cluster of dates in the early Iron Age (SUERC-67580, SUERC-67590, SUERC-67584, SUERC-67582, SUERC-67579) and middle Iron Age (SUERC-67583, SUERC-67588) with outlying late Bronze Age (SUERC-67581) and late Iron Age (SUERC-67589) dates. Various pits and postholes were dated to this period. They contained little in the way of artefactual evidence, with only a few poorly preserved sherds of pottery and some fragments of vitrified material indicating burning in the area.

The environmental remains however provided some insight into agricultural practices and crop choices in the vicinity of the site. The abundance of cereal grains in pit 038 and postholes 034, 036 and 057 suggests that it was being processed or stored on site. Naked barley was the most abundant taxon. This was the dominant cereal crop cultivated in Neolithic Scotland (Bishop et al 2009) largely being replaced by hulled barley in the Bronze to Iron Ages. The finding of so much material associated with Iron Age dates is unusual but with one grain directly dated to the early Iron Age (SUERC-67579) does appear to reflect a genuine occurrence rather than residuality.

A small number of oats were also recovered associated with Iron Age dates. The first evidence for the cultivation of oats in Scotland was in the Iron Age (Boyd 1988) although they probably did not become a staple crop at this early stage. Before the Iron Age they are much less common and may have been tolerated weeds in fields of wheat and barley. The low frequency of cereal chaff and crop weeds suggest that cereals had been winnowed and sieved prior to being charred (Jones 1990).

The finds analysis

by Julie Lochrie, Laura Bailey, Tim Holden

Introduction & methodology

Hand collected prehistoric pottery and daub assemblage derived from two contexts, fill (22) of pit 21 and fill (35) of posthole 34.

Soil sample processing revealed further artefactual material from a total of 15 contexts, see Table 4. None of these contained prehistoric pottery. One is a modern pottery fragment from fill (27) of pit 26 while the other 14 contained small vitrified fragments (02, 04, 13, 17, 20, 22, 27, 29, 31, 33, 56, 58, 63 and 64). The small quantities of industrial waste all weigh under a

gram and are probably the product of burning and natural silicas in the soil. The modern pottery and industrial waste are included in Table 4 but the report concentrates on the prehistoric pottery and daub.

The pottery analysis was carried out using a hand-lens and stereomicroscope where necessary. It was noted during assessment that the pottery assemblage included sherds from multiple vessels with many sherds conjoining. An estimate of how many vessels are represented has been provided but the pots were not reconstructed in detail. Where conjoining groups were noted they have been wrapped in acid-free tissue paper in their packaging. Measurements are in millimetres (mm) and grams (g) unless stated otherwise. For

Context	Sample	Quantity	Weight (g)	Material	Object	Description
2	1	-	0	Industrial Waste	Slag	small vitrified fragments
4	2	-	0	Industrial Waste	Slag	small vitrified fragments
13	11	-	0	Industrial Waste	Slag	small vitrified fragments
17	4	-	0	Industrial Waste	Slag	small vitrified fragments
20	8	-	0	Industrial Waste	Slag	small vitrified fragments
20	8	-	0	Industrial Waste	Mag Res	possible hammerscale amongst some magnetised gravel
22		302	3285	Pottery	CB	remains of at least 9 vessels. One is a small uncarinated cup, the others are open, round-based carinated bowls. Rims are most commonly rolled and carinations are of mixed shape. Extensive surface treatments and evidence of toolmarks and grass marks. Fabric is fine and walls are thin
22		22	66	CBM	Daub	small abraded fragments of fired clay. Some have concave impression, one has probable finger impression
22	24	-	0	Industrial Waste	Mag Res	appears to be magnetised gravel
22	24	15	32	Pottery	CB	small sherds and fragments from pit 21, see other entry
22	22	89	82	Pottery	CB	small sherds and fragments from pit 21, see other entry
27	18	-	0	Industrial Waste	Slag	small vitrified fragments
27	18	-	0	Industrial Waste	Mag Res	appears to be magnetised gravel
27	18	-	0	Pottery (modern)	whiteware	small fragment of modern pottery
29	26	-	0	Industrial Waste	Mag Res	appears to be magnetised gravel
31	21	-	0	Industrial Waste	Slag	small vitrified fragments
33	27	-	0	Industrial Waste	Slag	small vitrified fragments
35		4	22	Pottery	Coarseware	four small body sherds. Sandy fabric with very coarse rock temper. Three of the sherds have one original surface while the fourth has lost both. Interior shows gentle curvature and there is some interior organic remains adhering which may be suitable for dating
56	20	-	0	Industrial Waste	Slag	small vitrified fragments
58	23	-	0	Industrial Waste	Slag	small vitrified fragments
63	14	-	0	Industrial Waste	Slag	small vitrified fragments
64	12	-	0	Industrial Waste	Slag	small vitrified fragments

Table 4: Finds summary.

the purposes of this report the following sizes were used: small, 1-40; medium, 40-80; large, >80. The term fragment is applied to any sherd below 10mm. A catalogue of vessels is included as Table 5.

Prehistoric pottery

The prehistoric pottery assemblage numbered 310 sherds and derives from two features, pit 21 containing 306 sherds (3.399 kg) and four sherds (22 g) from posthole 34.

Vessel (V)	Sherd count	Weight (g)	Diameter (mm)	Description
22/01	20	219	c. 210-220	This is a conjoining group of sherds from the rim and neck area. The rim is thin and irregular, rounded but not rolled. The neck splays open and is long (c. 110 mm). There is a hint of the vessel rounding and forming a very subtle change of angle but no carination as such. No sherds lower than c. 160 mm could be assigned to this vessel. The coil joins on this vessel are shallowly oblique with slips to interior and exterior edge.
22/02	13	287	c. 205	This is a conjoining group of rim, neck and carination sherds. The rim is thick and irregular, rounded but not rolled. The neck splays open and the carination begins c.73 mm from the rim. The carination is rounded in some areas and more angular in others, it kicks out slightly on the upper 'neck' side but is more rounded on the basal curve. The coil joins on these sherds or flat but very irregular, the coil join runs through the carination.
22/03	7	115	c. 230	This is a group of three conjoining groups from the rim and neck. The vessel is thin with a rolled rim and splaying neck. A carination occurs c. 70 mm from the rim. The carination is very well pronounced but rounded. Between 30-40 mm from the rim is a coil join which is shallowly oblique and lipped on the interior.
22/04	4	149	c. 200-220	None of these sherds conjoin but the distinctive slip made it clear they were the same vessel. The rim is very irregular, thick and rounded, rolled at occasional points. The carination is well angled. The fabric is very gritty and it is likely the slip was applied to disguise this.
22/05	1	72	c. 290	This is a single rim sherd which has broken just after the carination. Rim is rolled and neck is splayed. Carination begins c. 83 mm from rim. The carination is well angle but rounded. A fingernail mark or fold is visible on the carination where it meets the belly. The sherd may be from a vessel of up to 290 mm in rim diameter, but a single sherd is not reliable.
22/06	1	12	not measured	Rounded everted rim sherd.
22/07	1	17	c. 130	This vessel is unique in the collection. It is an uncarinated cup. The rim is slightly lipped.
22/08	2	21	not measured	Two non-conjoining sherds of a P-shaped folded rim.
22/09	4	664	c. 285	A section of carination which is stepped and well angled. The coil joins on this vessel occur after the carination and are distinctively inverted U-shaped. Only two of these sherds conjoin but its distinctive form and joins identified two further sherds.
22/10	4	31	-	Three neck sherds and a carination sherd. Only two of these conjoin. The rim is not present. The carination is well angled and the walls are very thin, the interior has a crease along where the carination would have been.
22/11	3	140	-	Four large neck sherds with no other features. Two conjoining sets. Broken along probable coil join.
22/12	2	21	-	Two very finely made conjoining carination and belly sherd. broken along inverted U-shaped conjoin. Smooth and the best surface finish in the assemblage, burnishing facets visible. The carination is sharp.
22/13	3	42	-	Three carinated sherds, none of which conjoin. They are distinctive due to the fold at the edge of carination that suggest it has been applied, also visible in sherd section. Inverted U-shaped conjoins on two sherds.
22/14	9	187	-	Only two of these sherds conjoin but they are clearly from the same vessel. These sherds are comprised of lower body and carination sherds. The wall before the carination is thin, gradually thickening after, carination is well angled and almost stepped. Belly rounds quite quickly and would have been hemispherical. Two of the sherds have very oblique coil joins.
22/15	5	132.8	-	Five basal sherds, four of which conjoin, from the very base of vessel. Hemispherical, with a slight point and thickening at the very point of the base. These couldn't be associated with any carinations. The sherds have exterior grass marks.

Table 5: Neolithic pottery, summary of vessel forms.

Neolithic Pottery

The pottery from pit 21 and its fill (22) numbers 306 sherds and is the main focus of this report. The total number of vessels identified is 15. The vessels were all of similar fabrics making attribution to specific vessels difficult where sherd joins of distinctive forms were not apparent. In all 79 sherds could be assigned to these vessels. A further 227 sherds could not be matched to specific vessels but it is possible that they formed part of them. It is worth noting that several basal sherds were present in the assemblage but they did not conjoin to each other or the upper body sherds so could not reliably form 'vessel' profiles.

The vessels are described in greater detail in Table 5. Vessels 22/01, 22/02 and 22/03, are illustrated on Figure 13 and 22/05, 22/07, 22/08, 22/09, 22/12 and 22/15 are illustrated on Figure 14.

All but one of the vessels are carinated open vessels with splaying necks. Rim diameters are commonly 200-250 mm. The one exception is 22/07, the only uncarinated vessel in the collection. It is relatively small, with an estimated rim diameter of 130 mm. The similar sizes and similar characteristics of the carinated pottery suggest they are multi-use vessels with little extreme variation. The markedly smaller size and different form of vessel 22/07 suggests it may have been more suitable for serving rather than cooking or storage. The one major exception to carinated vessel sizes is rim sherd 22/05 which has an estimated diameter of around 290 mm. This vessel has the same form of the other carinated vessels but despite being rather thin-walled it is very large in size.

A high proportion of the vessels were identified by rim, neck or carinated sections. This is partly due to it being easier to match together rims and carinations; basal sherds are featureless and much more difficult to match. Vessel 22/15 is unusual in that it was identified by basal sherds only. Four sherds conjoin and have grass-marks on the underside, suggesting the vessel was air dried on grass before firing. The vessel has a slight dimple on the exterior at centre of the base. This could indicate that the first section of base construction was a small pinch pot which was then added to with coils or rings creating a hemispherical base.

The breakage patterns indicate that it is more likely for vessel to break into upper and lower sections. The carinated sherds were normally formed of part of a neck coil or ring; coil joins immediately below the carination were present on 22/09, 22/12, 22/13. This was not the case on Vessel 22/13 where the carination was seemingly formed from clay from the lower coil/rings. On vessel 22/02 the carination had a coil join through its centre.

While it is true that most of the coil joins are rather shallow and were commonly inverted U-shaped the joins from lower body sherds were very oblique. The shaping of the belly must have involved a different technique to the carination and neck. The basal joins indicate the clay was pulled in opposite directions between the interior and exterior. The upper body joins are interesting as the shallowly inverted U-shaped indicates that the clay was pushed down on the interior and exterior. This equality in how the clay was joined may have helped distribute weight and provide strength to a more upright neck following a structurally weak angle change. The flat joins were explained during the assessment as possibly supporting knife cutting of the surface (see project archive). This correlates to the thinner upper walls of the vessel where finishing the thin walls and even surface were of a higher priority than the rest of the vessel.

Early Iron Age pottery

The four sherds from posthole (34) are in rather poor condition, with only a single original surface surviving on three of the sherds and none on the fourth. There is little indication of vessel shape other than a slight interior curvature. The fabric is sandy and evenly fired but with the inclusion of some very coarse rock temper. Carbonised organic material adhering to the interior of the vessel was most likely caused through its use as a cooking vessel. As there is no indication of the form of the vessel the radiocarbon dated material provided a date of the early Iron Age, 788-540 cal BC (SUERC-67584), for this pot.

Ceramic building materials

Fired clay fragments, weighing 66g, were present amongst the pottery assemblage from pit (21). The fired clay takes the form of abraded lumps, often with one deeply concave face, suggestive

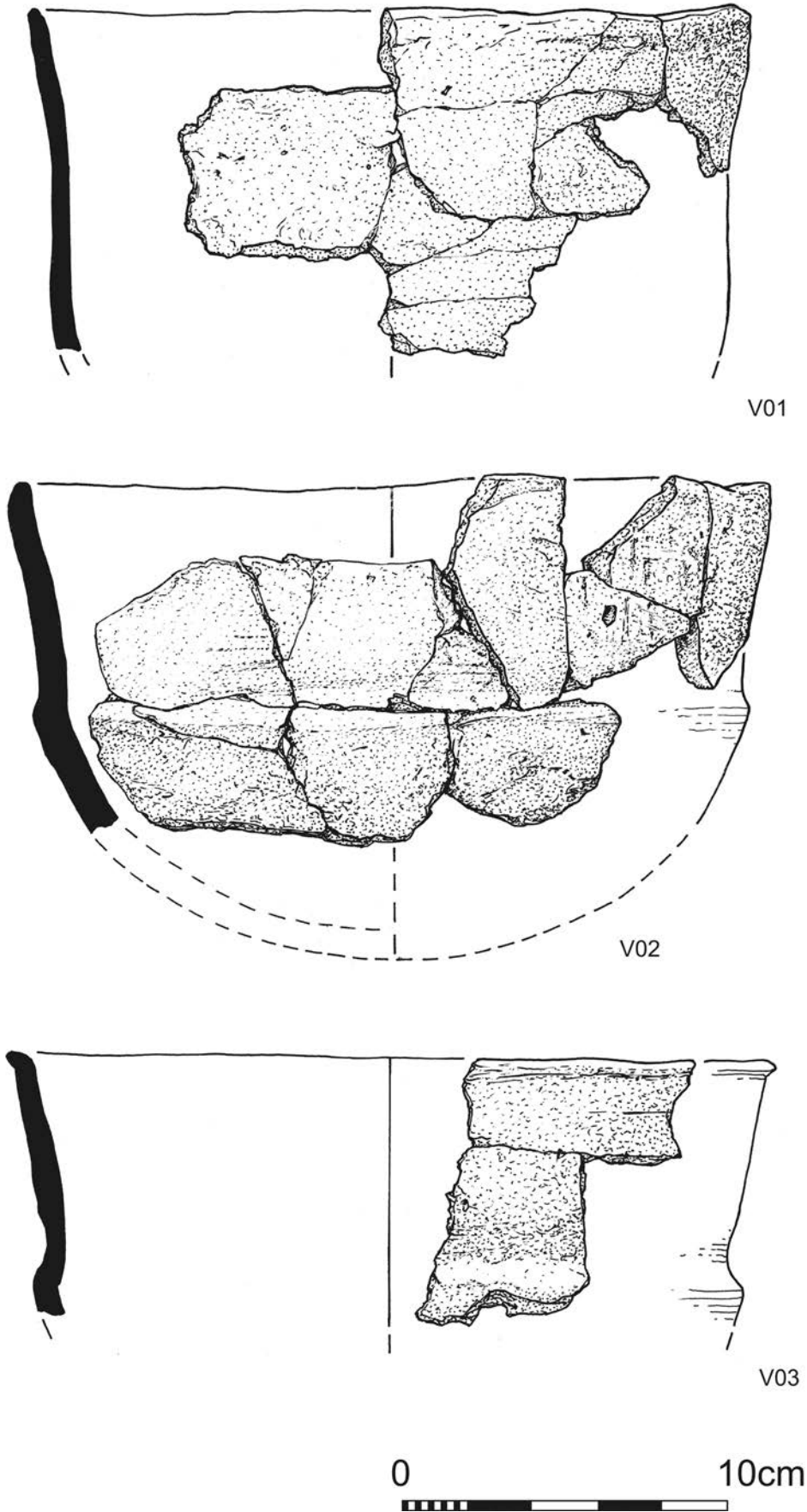


Figure 13: Early Neolithic carinated bowls from the fill (22) of pit (21) Vessels 01, 02 and 03.

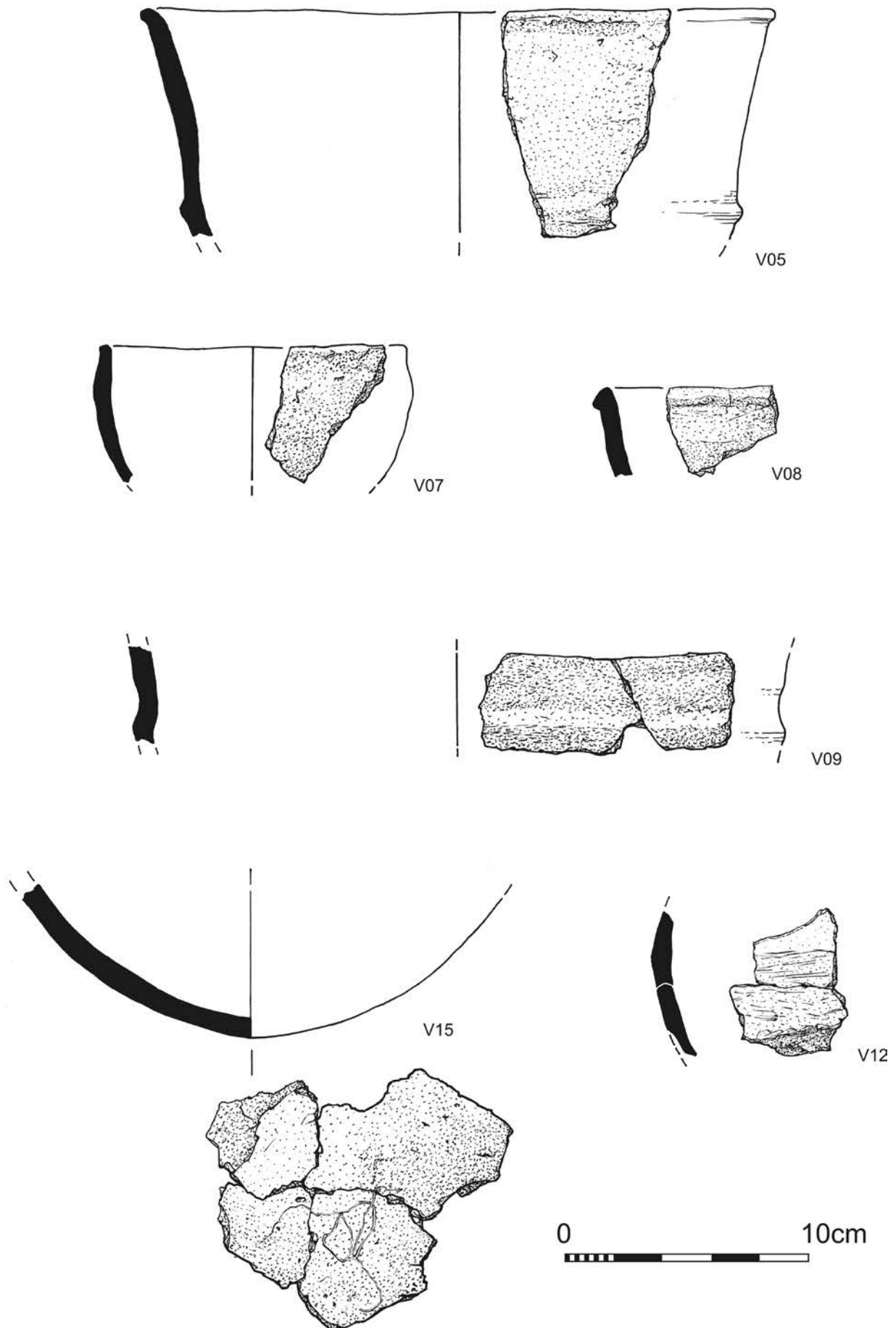


Figure 14: Early Neolithic carinated bowls from the fill (22) of pit (21) Vessels 05, 08, 09, 12 and 15. Vessel 07 is not carinated.

of a wattle superstructure. One fragment has a probable fingernail and fingertip impression. The fired clay points towards a structural element in the vicinity which came in contact with fire. It was most likely contemporary with the pottery and discarded at the same time.

The lithic artefact assemblage

By Torben Bjarke Ballin

Introduction and key definitions

The bases of two adjacent pits were excavated during the evaluation (Pits 016 and 021) and a further 23 features were identified during the watching brief and subsequently investigated. These features include the remains of the stone foundation of a ring-ditch, a pit and two post-holes, and a series of pit bases, possible hearths and cremation pits and other features which probably belong to several phases of occupation. Feature 062 was a circular area of large flat stones at the NW end of the site, with a burnt base. There was extensive rig and furrow cultivation across the entire watching brief area, which accounted for the poor preservation of features.

During the excavation, 67 lithic artefacts were recovered (Table 6). Most of these are chips and small fragments, but three larger pieces were recovered from Pit 021, with c. 306 sherds of prehistoric pottery and some burnt bone, and one large flake was found at the burnt base of Feature 062. The purpose of this brief report is to characterize the lithic artefacts in general terms, date and discuss the finds. The evaluation of the lithic material is based upon a detailed catalogue (Table 7) of the lithic finds from Kirkton of Fetteresso, and in the present report the artefacts are referred to by their number in the catalogue (CAT).

	Flint	Quartz	Agate	Total
Chips	37	15	1	53
Flakes	8	2		10
Blades	1			1
Microblades	2			2
Combined scraper-knife	1			1
TOTAL	49	17	1	67

Table 6: Lithic artefact list.

The definitions of the main lithic categories are as follows:

Chips: All flakes and indeterminate pieces the greatest dimension (GD) of which is ≤ 10 mm.

Flakes: All lithic artefacts with one identifiable ventral (positive or convex) surface, $GD > 10$ mm and $L < 2W$ (L = length; W = width).

Indeterminate pieces: Lithic artefacts which cannot be unequivocally identified as either flakes or cores. Generally, the problem of identification is due to irregular breaks, frost-shattering or fire-crazing.

Chunks are larger indeterminate pieces, and in, for example, the case of quartz, the problem of identification usually originates from a piece flaking along natural planes of weakness rather than flaking in the usual conchoidal way.

Blades and microblades: Flakes where $L \geq 2W$. In the case of blades $W > 8$ mm, in the case of microblades $W \leq 8$ mm.

Cores: Artefacts with only dorsal (negative or concave) surfaces – if three or more flakes have been detached, the piece is a core, if fewer than three flakes have been detached, the piece is a split or flaked pebble.

Tools: Artefacts with secondary retouch (modification).

Summary and discussion

Although all 67 lithic artefacts were recovered from postholes, pits, two hearths and one ring-ditch, it is almost certain that the vast majority of these generally small pieces represent residuality and that they were deposited in their features with the backfill, or in the case of the hearths, fell into the fireplaces during the manufacture or use of stone tools. Almost 80% of the finds are minuscule chips ($GD \leq 10$ mm), and apart from one piece (CAT 3) the flakes and flake fragments are so small that they only just qualify as flakes (10-13mm) (Table 6).

Only four pieces are so large that it is sensible to discuss whether they may have been deliberately deposited, namely CAT 1, CAT 2 and CAT 15 from pit 021, and CAT 3 from the burnt base of a circular

Context	Catalogue No	Description
006 fill of posthole 005	CAT 4	Tertiary indeterminate flake (GD 11 mm); fine-grained, red flint; burnt. Sample 007.
	CAT 5	Chip (≤ 10 mm); fine-grained, discoloured flint; burnt. Sample 007.
009 fill of possible ring ditch 008)	CAT 6	Chip (≤ 10 mm); fine-grained, red flint. Sample 025.
013 fill of possible posthole 12	CAT 7	Chip (≤ 10 mm); fine-grained, grey flint; burnt. Sample 011.
015 fill of possible hearth 014	CAT 8-9	Two chips (≤ 10 mm); fine-grained, grey flint. Sample 005.
	CAT 10	Chip (≤ 10 mm); fine-grained, red agate. Possibly natural. Sample 005.
017 fill of possible hearth 016	CAT 11	Chip (≤ 10 mm); fine-grained, light-brown flint. Sample 004.
020 fill of posthole 019	CAT 12-14	Three chips (≤ 10 mm); fine-grained, white, milky quartz. Sample 008.
022 fill of pit 021	CAT 1	Combined end-scrapers/scale-flaked knife on tertiary elongated flake/blade (21 by 13 by 5 mm); fine-grained, light-brown flint. Most of the platform remnant has broken off, but a tiny part of the bulb survives. This, however, does not allow the blank to be identified as a soft or hard percussion piece. Neat convex, steep scraper-edge at the distal end, combined with a fine scale-flaked cutting-edge along the right lateral side. Fine, flat use-wear along the scale-flaked edge, as well as along the unmodified, sharp left lateral side. Possibly slight gloss along the left lateral side. SF 007.
	CAT 2	Tertiary soft percussion microblade (27 by 8 by 3 mm); fine-grained, mottled, light-grey flint. SF 006.
	CAT 15	Secondary soft percussion blade (42 by 16 by 6 mm); medium-grained, mottled, grey flint. Sample 022.
	CAT 16	Medial-distal fragment of tertiary indeterminate microblade (17 by 7 by 2 mm); fine-grained, discoloured flint; burnt. Sample 022.
	CAT 17	Distal fragment of tertiary indeterminate flake (GD 12 mm); fine-grained, discoloured flint; burnt. Sample 022.
	CAT 18	Proximal fragment of secondary soft percussion flake (GD 11 mm); fine-grained grey flint. Sample 022.
	CAT 19	Tertiary flake with platform collapse (GD 11 mm); fine-grained grey flint. Sample 022.
	CAT 20-40	Twenty-one chips (≤ 10 mm); fine-grained flint, grey and light-brown colours/some discoloured; five burnt. Sample 022.
	CAT 41-42	Two distal fragments of indeterminate flakes (GD 10-12 mm); fine-grained, white, milky quartz; Sample 022.
	CAT 43-46	Four chips (≤ 10 mm); fine-grained, white, milky quartz. Sample 022.
	CAT 47	Medial fragment of tertiary indeterminate flake (GD 13 mm); fine-grained, grey flint. Sample 024.
	CAT 48-51	Four chips (≤ 10 mm); fine-grained flint, grey /some discoloured; two burnt. Sample 024.
033 fill of pit 032	CAT 52	Tertiary indeterminate flake (GD 11 mm); fine-grained, discoloured flint; burnt. Sample 027.
	CAT 53	Chip (≤ 10 mm); fine-grained, white, milky quartz; Sample 027.
035 fill of posthole 034	CAT 54	Chip (≤ 10 mm); fine-grained, white, milky quartz; Sample 016.
	CAT 55	Chip (≤ 10 mm); fine-grained, white, milky quartz; Sample 031.
039 fill of pit 038	CAT 56-57	Two chips (≤ 10 mm); fine-grained, discoloured flint; burnt. Sample 028.
047 fill of posthole 046	CAT 58	Chip (≤ 10 mm); fine-grained, grey flint. Sample 029.
058 fill of pit 057	CAT 59	Proximal fragment of tertiary soft percussion flake (GD 13 mm); fine-grained, discoloured flint; burnt. Sample 023.
	CAT 60	Chip (≤ 10 mm); fine-grained, grey flint. Sample 023.
	CAT 61-62	Two chips (≤ 10 mm); fine-grained, white, milky quartz. Sample 023.
064 burning at base of circular feature 062	CAT 3	Proximal segment of primary hard percussion flake (43 by 31 by 10 mm); medium-grained, slightly impure grey to pink flint. The pink colour is probably discolouration from exposure to fire. SF 008
069 fill of pit 038	CAT 63	Chip (≤ 10 mm); fine-grained, white, milky quartz; Sample 015.
070 fill of pit 038	CAT 64-65	Two chips (≤ 10 mm); fine-grained, grey flint. Sample 003.
	CAT 66-67	Two chips (≤ 10 mm); fine-grained, white, milky quartz. Sample 003.

Table 7: Lithic artefact catalogue.

stone-built feature (Feature 062). The three pieces from pit 021 are one combined scraper/knife (CAT 1), one large blade (CAT 15), and one microblade (CAT 2), and this feature also yielded c. 306 pottery sherds and some burnt bone. CAT 3 from Feature 062 is a large flake (Table 7).

The pottery from Pit 021 has been identified as pottery of the Carinated Bowl Tradition (Neolithic Pottery, above), dating the pit to the early Neolithic period (Sheridan 2007) (Table 8). As the blade (CAT 15) and the microblade (CAT 2) are both soft percussion blanks, these pieces certainly pre-date the middle Neolithic (the early/middle Neolithic transition is characterised by a switch in technological approach, from soft to hard percussion, and from narrow blades to broad blades; and the combination tool (CAT 1), with its scale-flaked cutting-edge, just as certainly post-dates the Mesolithic period (e.g. Butler 2005), all three pieces could be part of an early Neolithic ritual deposition related to the well-known Scottish depositions of pitchstone microblades, carinated pottery and, on occasion, other lithic/stone implements and burnt bone (Ballin 2015).

The scale-flaked knife is definitely a used piece, and both lateral edges – its modified edge as well

as its unmodified edge – have flat wear from use as a cutting implement. The unmodified edge may have slight *gloss*, which suggests use for the processing of vegetable matter. Analysis of scale-flaked knives with gloss from middle/late Neolithic sites near the Overhowden Henge in the Borders were analysed by use-wear specialist Dr Randy Donahue, University of Bradford, who carried out a cursory examination of the specimens (Ballin 2011). His verdict was the same in all cases that the knives had been used for cutting/sickling grasses or cereals. Although the present knife is considerably smaller, making it less useful as a sickle, it may still have been used for the processing of vegetable matter (Juel Jensen 1994).

Flake CAT 3 appears to have been burnt in connection with activities around Feature 062 (early Iron Age) which involved the use of fire. The excavator (Cameron 2015, 19) suggests that the site may represent several phases of activity, and the lithic assemblage was clearly deposited in connection with domestic as well as ritual activities. Most of the finds are probably residual domestic waste, and the only element with some research potential is the small sub-assemblage from Pit 021 with lithic objects and carinated pottery.

Techno-complex	Period	Raw material	Target blanks	Percussion technique	Diagnostic microliths/arrowheads	Aberdeenshire sites
1	Early Mesolithic	Local red/brown flint	Broad blades	Soft	Broad microliths	Nethermills, Banchory
2	Late Mesolithic	Local red/brown flint	Microblades	Soft	Narrow microliths	Nethermills, Banchory
	Early Neolithic	Local red/brown flint	Microblades/broad blades	Soft	Leaf-shaped points	Garthdee Road, Aberdeen
3	Middle Neolithic	Exotic light-grey and local red/brown flint – frequently half-and-half	Broad blades	Hard (Levallois-like)	Chisel-shaped points	Stoneyhill, Peterhead
	Late Neolithic	Exotic dark-grey and local red/brown flint – frequently half-and-half	Broad blades	Hard (Levallois-like)	Oblique points	Midmill, Kintore
4	Early Bronze Age	Local red/brown flint	Flakes	Bipolar	Barbed-and-tanged points	Kingfisher Est., Aberdeen

Table 8: The techno-complexes of the east of Scotland and their diagnostic lithic elements (Ballin 2014).

The cremated bone

By Paul RJ Duffy

Introduction

Five separate deposits of cremated bone were presented for analysis from a watching brief and excavation. The bone was derived from a series of pits and a stone-lined feature. All had apparently been truncated by ploughing and potentially also suffered from burrowing activity.

Methodology

Cremated bone samples were received sorted and washed. Each sample was sorted into three fractions: under 5mm, 5-10 mm and over 10 mm. Fractions were examined and identified as human, non-human or unidentifiable. Where possible individual fragments were then identified to element level (Table 9).

Where bone was identified as non-human, or was unidentifiable, no further analysis was undertaken. Where bone was identifiable as human it was re-examined to understand whether any further information pertaining to age, biological sex, pathology or traumatic injuries could be understood.

Discussion

The majority of the bone examined from Fetteresso was either not identifiable to species, or was identified as animal. Three contexts did, however, contain elements identifiable as human. Context 58 contained an identifiable fragment of human rib and a fragment of a proximal end of a first metatarsal (MT1). Context 22 contained three eroded fragments of possible human tooth roots. Context 64 contained a fragment of possibly human long bone but identification was not conclusive.

The deposition of token deposits of both human and animal bone in pits is a well attested practice in a prehistoric context. Given the relatively small amounts of cremated bone recovered from the fill of pit 1, pit 3 and pit 62, it may be that much of the material originally deposited been lost as a result of the substantial truncation noted in the data structure report. Alternatively, it may be that this material has become accidentally incorporated into these deposits, either in antiquity or as a result of the significant ploughing and rabbit activity observed at the site.

The more substantial deposits of material contained within the fill of pit 21 and pit 57

Feature	Context	SF	Total Weight (g)	Type	Notes	<4 mm	4-10 mm	>10 mm
1	2	1	0.89	Animal	Well cremated; white; PM fragmentation	0.34	0.552	
3	4	2	0.07	Probable Animal	Well cremated; white; PM fragmentation	0.07		
21	22	2	35.99	Stone		2.583		
21	22			Unidentified	Well cremated grey white	6.674		
21	22			Animal	Well cremated grey white		3.434	15.779
21	22			Unidentified	Well cremated grey white		0.303	5.015
21	22			Unidentified	Well cremated; white;eroded			1.768
21	22			?Human tooth roots	Well cremated; white;eroded		0.458	
57	58	12	10.94	Unidentified	Well cremated grey white		0.615	1.401
57	58			Animal	Well cremated grey white			3.069
57	58			Probable Animal	Well cremated; white; PM fragmentation		0.193	
57	58			Animal				0.594
57	58			Human Rib Fragment				0.81
57	58			Human MT1 Proximal end	Well cremated grey white			3.763
62	64	9	1.88	Animal	Well cremated grey white			0.977
62	64			?human - ?longbone	Well cremated grey white			0.573

Table 9: Bone description.

would perhaps suggest with more certainty that the deposits of bone in these features were a deliberate act. The quantities identified were, however, small, and lacked diagnostic features to allow further deductions to be made about age, biological sex or pathological conditions. Beyond the identification of this material as human, therefore, little else can be deduced osteologically to widen our understanding of the choices engaged in the deposition of these mixed assemblages in the past.

Discussion and conclusions

Although the archaeological deposits at Kirkton of Fetteresso were subjected to considerable truncation and bioturbation, excavation of the remaining deposits nevertheless proved successful in obtaining radiocarbon determinations, ecofacts and artefacts, particularly the mass of early Neolithic ceramic sherds from pit F21.

In contrast to the other groups of features discovered under a thin topsoil layer, F34, F36 and F38 were buried under a substantial layer of overburden some 1.2 to 1.5 m in depth, which came as something of a surprise to the excavators. This layer appears to have been built up due to both inwashed, small-scale fluvial deposits making their way into this small natural gully, and what appeared to be later, modern levelling due to agriculture and quite possibly, roadworks associated with the construction of the A90. These groundworks have substantially bevelled the hillside only a few metres from the NE corner of the site (and therefore F34-38) down to the A90 motorway, likely destroying additional features extending towards the Malcolm's Mount area.

The carinated bowl pottery tradition

The pottery from pit F21 appears to predate the previous horizon given in Bonsall et al. (2009, 7) for the earliest Neolithic Pottery in Scotland (noted as not occurring 'significantly' prior to 3800 cal BC – depending on what qualifies as significant here), while 3840-3650 cal BC was recently given as the earliest dates from York Humber (another eastern British coastal area) for carinated Neolithic bowls (Griffiths 2014, 17).

Examination of the radiocarbon age BP (5042±29) for context 22 the fill of pit F21 (SUERC-67591),

the 1-sigma error (53.7% probability) indicates that the pottery was probably deposited sometime between 3937–3791 cal BC, while the 2-sigma error with its higher 94.5% probability, indicates that the pottery could have been deposited as early as 3952 cal BC to as late as 3766 cal BC. The possibility exists that the Neolithic pottery from Kirkton of Fetteresso was produced by (or imported by) one of the first few generations of pottery makers in, or arriving to, Scotland (Sheridan 2003, Brophy and Sheridan 2012). There are only one or two dates in Sheridan's radiocarbon inventory associated with the use of carinated bowls (Sheridan 2007, fig.6) which have earlier or very similar radiocarbon determinations: Coupland (Ox-A-6832 at 5090±60 BP and Ox-A-6833 at 5060±60 BP) and Eweford Pit (SUERC-5298 at 5045±35 BP) which corroborates the notion that the carinated bowl tradition first reached north-eastern Britain, primarily Scotland but also Northumbria, before becoming visible elsewhere, but does not correspond particularly well with the notion that it 'appears to follow major rivers' (Brophy and Sheridan 2012: 22) as the nearest water way to Kirkton of Fetteresso is the Cheyne Burn, a tributary of the minor Carron Water which empties into the well-protected Stonehaven Bay nearby, only 1 km downhill from the site. Given that a low but rugged range of hills lies between Fetteresso and the River Dee 13 km to the north-west (or the mouth of the River Dee 22 km to the north-east) it is more convincing to postulate that this technology - or those capable of producing it - arrived directly via sea-routes into Stonehaven Bay, further supporting the notion that this pottery is very early in the Neolithic period in Scotland.

Interpreting the relationship between features

Although the radiocarbon determinations reveal periodic activity at Kirkton of Fetteresso, the interpretation of possible structures and the relationship between undated features is difficult to ascertain with any degree of certainty. This holds especially true in the north-east corner of the site, where early and middle Iron Age features appear to be largely superimposed, with features such as F32 (early Iron Age) and F46 (middle to late Iron Age) similar in size and both within a possible structure. However, features F5 and F8 to the south-west at the lower end of the site may be labelled late Bronze Age with more

certainty. It is tempting to place the two outliers here – F10 and F12 within this group, but as we see with the relationship between F16 (early Iron Age) and F21 (early Neolithic), the horizontal and vertical relationships here can be deceptive.

Nonetheless, what is particularly striking about Kirkton of Fetteresso is the apparent repetitive yet episodic activity within this relatively small area over at least four millennia. Given the location of many of the features within the watching brief area, it is highly probable that a number of additional features, including cremation burials, lie within the modern graveyard. As mentioned above, the landscape surrounding the site contains numerous prehistoric features which span a similar timeframe, including Mesolithic pits and early Neolithic pits with carinated bowls at Spurryhillock (Alexander 1997, 22) in addition to the Scheduled Monument of Farrochie, which consists of a series of cropmarks, including a pit alignment, souterrain and finally, an unenclosed settlement in the adjacent field (NRHE: NO88NE 39). After a review of the radiocarbon determinations, they have revealed Kirkton of Fetteresso as a palimpsest of periodic activity covering the early Neolithic, the late Bronze Age, the early and middle to later Iron Ages (pre-Roman) and the early medieval or Pictish period. Later into the medieval or early post-medieval period, the site was then subjected to rig and furrow agriculture which eventually gave way to modern ploughing and finally, the construction of the graveyard adjacent to the western boundary of the site.

What seems clear is that the undeveloped landscape around the site undoubtedly contains more information which could help shed light on the activity at Kirkton of Fetteresso. Given the heavy development to the east with the A90 and modern Stonehaven housing, in the future particular attention should be paid to any groundworks within the fields immediately to the north (adjacent to the north-east cemetery wall) and west of the site.

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Bibliography

Alexander, D 1997 Excavation of pits containing decorated Neolithic pottery and early lithic material of possible Mesolithic date at Spurryhillock, Stonehaven, Aberdeenshire, *Proc Soc Antiq Scot* 127(1), 17-27.

Ballin, TB 2011 *Overhowden and Airhouse, Scottish Borders. Characterization and interpretation of two spectacular lithic assemblages from sites near the Overhowden Henge*. Oxford: Archaeopress. British Archaeological Reports British Series, 539.

Ballin, T.B. 2015 Arran pitchstone (Scottish volcanic glass): New dating evidence, *Journal of Lithic Studies* 2(1), 5-16. Available from: <http://journals.ed.ac.uk/lithicstudies/article/view/1166> [Accessed 15/05/2019].

Bishop, R R; Church, M J and Rowley-Conwy, P A 2009 Cereals, fruits and nuts in the Scottish Neolithic, *Proc Soc Antiq Scot* 139, 47-103.

Bonsall, C; Anderson, D E and Macklin, M G 2009 The Mesolithic-Neolithic transition in western Scotland and its European context, *Documenta Praehistorica*, Available from: <https://revije.ff.uni-lj.si/DocumentaPraehistorica/article/view/29.1> [Accessed 15/05/2019].

Boyd, W E 1988 Cereals in Scottish Antiquity, *Circaea* 5, 101-10.

British Geological Survey 2019. Available from <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> [Accessed 15/05/2019].

Brophy, K and Sheridan, A (eds.) 2012 *ScARF Neolithic Panel Report*. Available from: <http://tinyurl.com/d73xkvn> [Accessed 15/05/2019].

Butler, C 2005 *Prehistoric Flintwork*. Stroud: Tempus Publishing Ltd.

Cameron, A 2015 *Land at Kirkton of Fetteresso, Stonehaven, Aberdeenshire*. Unpublished data structure report.

Cappers, R T J; Bekker, R M and Jans, J E A 2006 *Digital seed atlas of the Netherlands*, Groningen.

Barkhuis Publishing and Groningen University Library.

Griffiths, S. 2014 A Bayesian Radiocarbon Chronology of the Early Neolithic of Yorkshire and Humberside, *Archaeological Journal* 171, 1, 2-29.

Jones, G 1990 The application of present-day cereal processing studies to charred archaeobotanical remains, *Circaea* 6, 91-96.

Juel-Jensen, H 1994 *Flint Tools and Plant Working. Hidden Traces of Stone Age Technology. A use wear study of some Danish Mesolithic and TRB implements.* Aarhus: Aarhus University Press.

Sheridan, A 2003 French connections I: Spreading the marmites thinly, in Armit, I; Murphy, E; Nelis, E and Simpson, D (eds.) *Neolithic Settlement in Ireland and Western Britain.* Oxford: Oxbow Books, 3-17.

Sheridan, A 2007 From Picardie to Pickering and Pencraig Hill? New information on the 'Carinated Bowl Neolithic' in northern Britain, *Proceedings of the British Academy* 144, 441-492.

Stace, C 2010 *New Flora of the British Isles* (3rd Edition). Cambridge: Cambridge University Press.

Zohary, D; Hopf, M and Weiss, E 2012 *Domestication of Plants in the Old World.* Oxford: Oxford University Press.

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