

AN INVESTIGATION INTO CIRCULAR FEATURES FOUND ON BELLINGTON HILL, THULSTON

By MIKE BUTLER

ALAN PALFREYMAN

The late DR CHRISTOPHER SALISBURY

AND

PAT TINKLER

INTRODUCTION

Whilst researching for his book *In the Shadow of a Castle*, John Morrell (2001, 94) learned of a series of circular features in a field on the side of Bellington Hill in Thulston, to the south of Derby (SK 423314). Having looked at them, he felt that they merited investigation and passed his thoughts on to the Derbyshire Archaeological Society. At the beginning of May 2003, the Archaeological Research Group of the Society began the work of trying to identify and date these earthworks (Pl. 1)



Plate 1: Bellington Hill circles: the four main circles looking west.

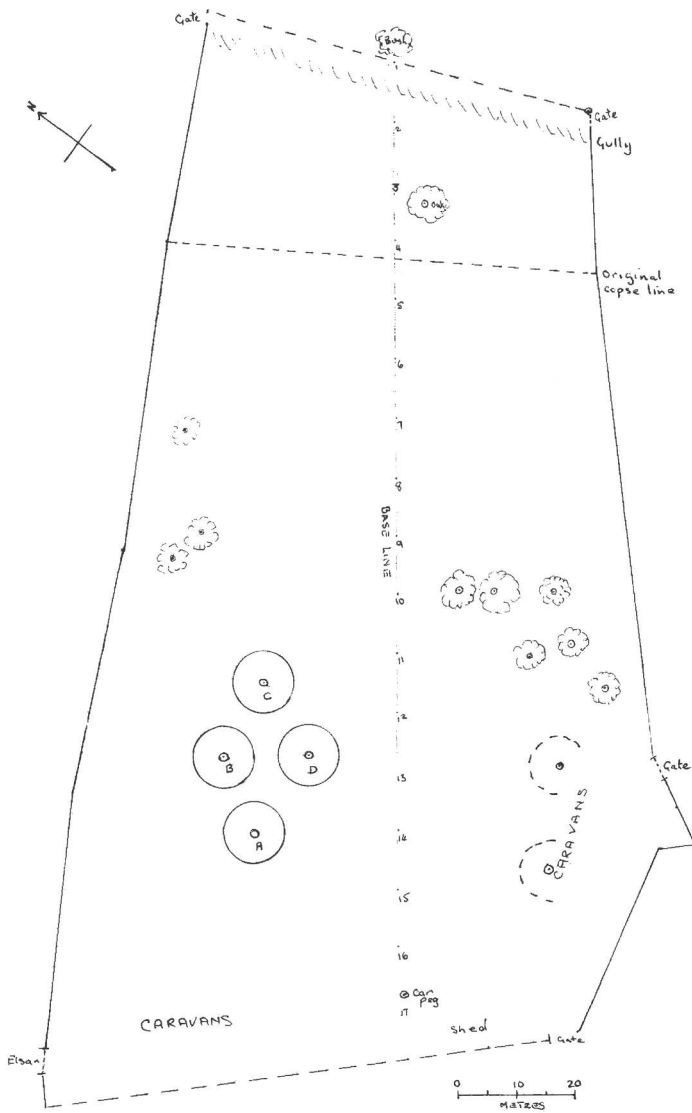


Fig. 1: Bellington Hill circles, field survey.

LOCATION

Bellington Hill rises to a height of 46m above the flood plain between the Rivers Trent and Derwent (SK 423314) about 3.5km east of Derwent Mouth and 2km from Elvaston Castle. A surface examination of the field in which the circles are to be found shows evidence of a ridge-and-furrow ploughing system indicating that it has been the site of farming since at least medieval times when the land formed part of the estates of the Earls of Harrington. There have been barns on the adjoining land since around 1750, giving their name to the existing Bellington Barn Farm.

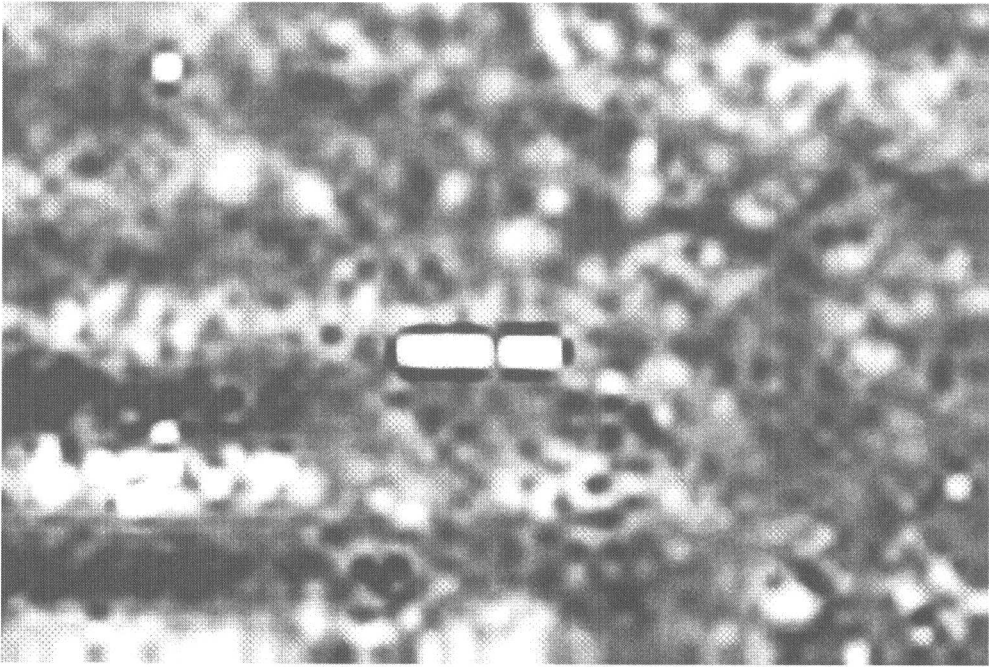


Fig. 2: Bellington Hill circles, resistivity survey. The white rectangles are the locations of the excavation and the marker posts.

During the 18th century high quality gypsum was mined at the top of the hill, and in 1885 what was left became part of the Chellaston gypsum mining operations (Turbutt 1999,1481). Signs of this activity are still visible at the top of the field where a gully runs from side to side between workings done in adjacent areas.

Currently the field is used as pasture for grazing sheep and as a caravan park.

SURVEY

Under the guidance of Mike Butler, who directed the survey, a plan of the field was drawn up (Fig. 1). This shows the relationship of the circles to each other and to other aspects of the area. Figure 3 is a plan of the four main circles indicating a close similarity between them. They are between 9.5m and 10m in diameter and consist of a shallow outer ditch with depressions, an inner circle of depressions and a central depression. Two more stand some 50m away but these run under parked caravans which made them inaccessible.

A resistivity survey carried out by Keith and Barbara Foster (Fig. 2) confirmed the presence of an established ridge-and-furrow system and shows the circles embedded in this.

It was decided to excavate a trench across one of the circles with the aim of dating the earthworks and to find evidence of their purpose. Alan Palfreyman set up and supervised the excavation, assisted by a team of volunteers from the Society

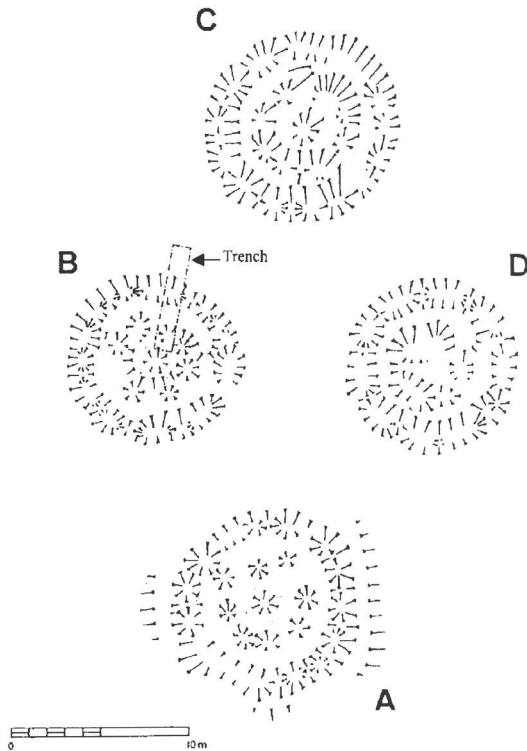


Fig. 3: Bellington Hill circles: plan of the four main circles showing their relationship with each other, the depressions and the position of the excavation.

Of particular interest were the indentations so a 1m × 6m trench was marked out in circle B taking in a quarter of the centre depression, an inner depression and the outer ditch (Fig. 3). The object was to look for infill, stratification, soil staining and any dating evidence. Digging was done progressively and detailed records made at each stage. Finds, such as they were, were plotted in context.

EXCAVATION REPORT by Alan Palfreyman

17th/18th May

Trench set out in earthwork B (Figs 4, 5).

Feature F1

Context 01

Topsoil consisting of fine 'turfy' loam, mid brown in colour and free of pebbles and other inclusions.

Context 02

Ditch infill consisting of mid brown loam with inclusions of pebbles and charcoal and flints which were naturally fractured. An occasional flint had reddish discoloration (possibly fire affected).

BELLINGTON HILL CIRCLES

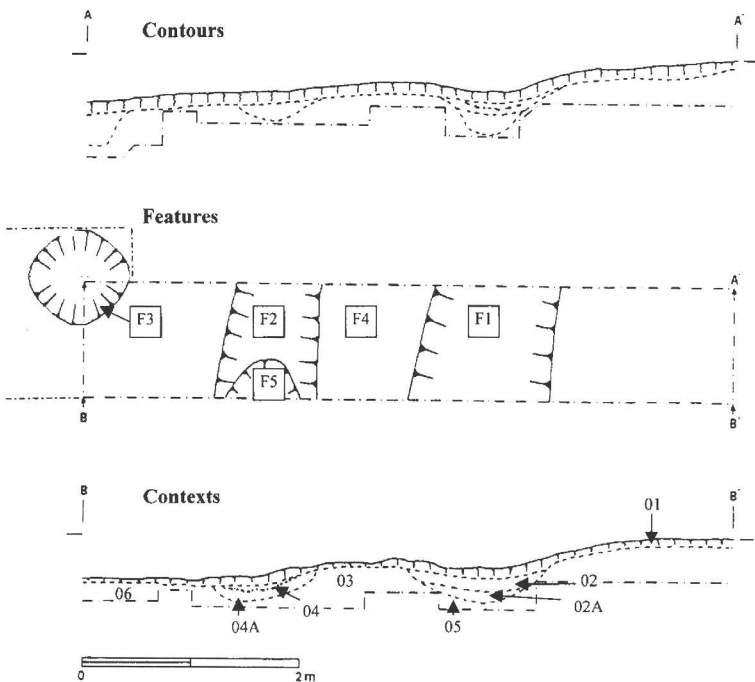


Fig. 4: Bellington Hill circles: Circle B excavation plan and sections with feature and context numbers.

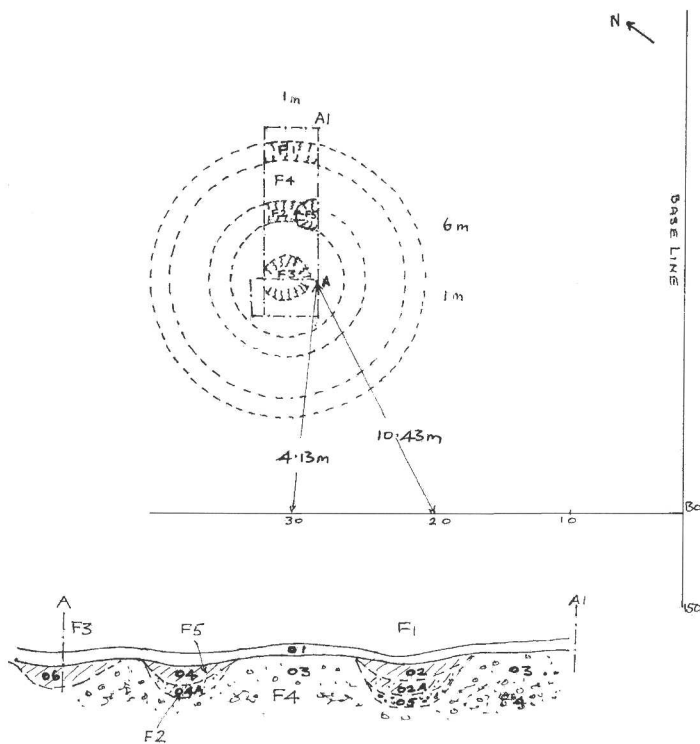


Fig. 5: Bellington Hill circles: sketch plan and section of Circle B (not to scale) showing positions of selected finds.

Other inclusions were fragments of clay pigeons and a cartridge percussion cap directly below the turf, thumbnail-sized chippings of hand-made brick with gypsum inclusions and abraded Romano-British and medieval sherds.

Context 02A

Brown soil infill below charcoal line down to pebble concentration with brown silty soil.

Context 05

Packed pebbles and brown silty soil. Believed to be medieval plough soil merging into natural hill wash deposits. Finds included an abraded Midland Purple ware sherd

Feature F2

Context 04A

Infill closely resembled that found in F1 and was cut into the underlying medieval plough soil, context 03.

Finds included a piece of Tudor/ Stuart purple glazed fine paste pottery found at depth of 40cm and a small piece of medieval green glazed, dark grey cored, pottery found at 50cm depth.

Feature F4

Context 03

Consisting of reddish brown loam with many inclusions of pebbles, naturally fractured flints and some specks of charcoal. Contains burnt(?) flecks of alkaline material, possibly chalk fragments derived from glacial till.

Believed to be medieval and post-medieval ridge plough soil (on ridge-and-furrow system).

Composed of hill wash material from glacially derived till, forming northern mound in field (Oadby till?) and from the adjacent field.

Alkaline fragments now believed to be chalk since large quantities of chalk lumps and flint nodules have been discovered in upcast from a recently dug cable trench cutting across the mound at northern edge of field and adjacent field to the east.

Sherds in this context consisted of small abraded medieval and Roman pottery.

Feature F5

Context 04

Shallow pit, 60cm diameter, cut into the underlying feature F2. Its infill (04) consisted of charcoal, burnt clay and small stones, with many natural white coloured flint fragments.

Finds included 2 cartridge percussion caps in upper levels and associated with charcoal and other burnt materials. 2 worked flint fragments came from the lower infill boundary but are thought to be intrusive.

August 16th/17th

A second visit was made in an attempt to gain more information with the additional assistance of Dr Chris Salisbury of the Trent and Peak Archaeological Unit. Two small excavations (1.5m × 1.5m) and a shallow trench were dug out on the centre feature of

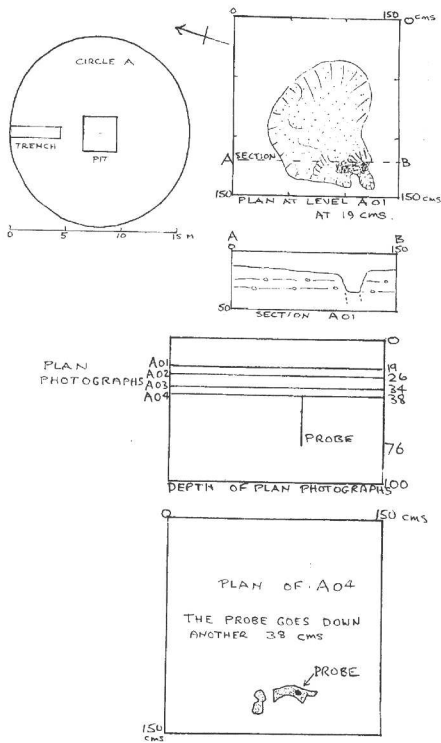


Fig. 6: Bellington Hill circles: sketch plans of Circle A excavation.

circle A and further work was done on B. Sadly these only served to confirm the lack of useful evidence.

Circle A

(Chris Salisbury) (Fig. 6)

The subsoil was a yellow/brown gravelly alluvial deposit. This was eccentrically stained by a root spread of grey friable humus.

In the middle of this was a tap root void that could be probed to a depth of 76cms.

No artefacts or gypsum.

Circle B

(Alan Palfreyman)

Feature F3 (Fig. 5)

A shallow pit, 60–80cm diameter. Infill, context 6, consisting of brown loamy material with plentiful pebbles. No charcoal, burnt daub or similar infill or any signs of silting. Finds consisted of 2 small sherds of Staffordshire slipware from the junction with ploughsoil (03), a piece of cabinet glass and a fragment of brick.

This feature was cut into the underlying medieval plough soil consisting of a reddish earth with many pebbles.

Finds (Table 1)

An initial sweep by metal detectorists picked up five pieces, including a horse chain attachment, all of which were relatively modern. Similarly, there was evidence of modern sporting activity, both clay pigeon shooting and archery.

The plough soil forming the medieval ridges contained the small collection of abraded sherds of pottery which included both medieval and Roman pieces.

Soil Samples

Augur samples to 90cm deep were taken from circle D, which was undisturbed by any excavation. Figure 7 shows where the bore holes were made, C in the centre depression, O in one of the outer depressions and N in the natural plough soil

The results can be seen in Table 2 and show no obvious difference, level for level, between the depressions inside the circle and the area outside.

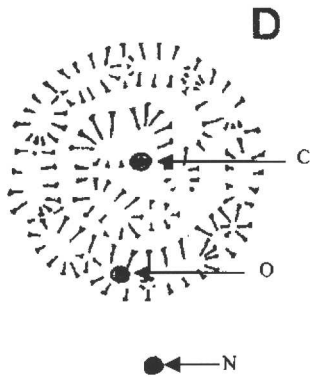


Fig. 7: Circle D, soil sampling positions.

Maps

Sanderson (1835) shows a small copse at the north-east end of the field which appears to match the dip marked 'original copse line' on the field plan (Fig. 1). By the time of the 1881 OS map the whole field had become a Fox Covert, whilst the 1913 revision shows the covert to have extended into the adjoining field north-west and names it Bellington Wood. This is also evident in the 1944 OS map.

History

By the 13th century the lands in Elvaston, Thulston and Ambaston were a part of the estates of the Earls of Harrington and the Bellington fields appear to have been passed round the family over time. Excerpts from the estate papers in the Derbyshire County Records Office (Parish Records) make reference to Bellington under various names

- | | |
|------|--|
| 1316 | Grant by Geoffrey de Bernetoft in Thurleston to Alice his wife and legitimate heirs of her body, remainder to Geoffrey and his heirs of half a place with a building on it half and acre in Westcroft, half an acre among Belidon Hills in Thurleston for 1d silver per annum. (T11) |
| 1410 | Grant by Richard Bulhow of Eyton and Alice his wife --- 2 ro in le Belydenfeld. . .(T61) |

Code	Context	Find	Comments
AAA	02	2 flint pieces – 1 worked. pottery fragments: terracotta, white glaze. 2 terracotta chips Green plastic arrow nock Clay-pigeon fragment and percussion cap.	Roman/medieval(?) Victorian
AAB	03	4 pottery fragments 2 pieces 'fired' clay.	Including a piece of a lid from a Roman castor ware box.
AAC	02	2 fragments black glazed pot. 6 'fired' clay pieces 4 pieces of charcoal 15 fragments of clay-pigeon	C18th/19th black glaze Directly above burned charcoal layer
AAD	04A	Piece of charcoal	In post hole(?) area around 50cms from baseline
AAE	05	Fragment pot	Medieval Midland Purple ware C16th On top of stone, 63cms below baseline
AAF	02	2 pieces of flint, 1 worked (?)	Edge of
AAG	02	1 fine brown glaze, 1 blue and white chip.	Ticknall ware, C16/17th C18th 48cms along 5cms down
AAH	03	2 pieces 'fired' clay	
AAI	03 or 04	Clay-pigeon fragment 2 small animal bones	More likely 03
AAJ	04	Small flint chip ? worked. Pot chip – cream glaze	Edge of feature
AAK	03	1 fragment cream and brown pot.	Staffordshire slip ware C17th Just under turf
AAL	02A	Brick fragment? 'Fired' clay piece	Above pebbles. under charcoal
AAP	04	Fragment green glaze pot 5 flints 'Fired' clay piece	Medieval sherd, grey/black core, green glaze, body sherd of jug
AAQ	04A	Fragment pottery Cartridge percussion cap Wood pieces.	Post-medieval sherd. C16/17th (?) Body sherd, purple glaze on finer fabric than typical Midland Purple ware.
AAS	06	2 fragments pot	Modern glaze
AAT	06	Piece thin flat glass	Cabinet glass?

Table 1: Bellington Hill Circles: finds.

Element	C1 (0-18cm)		C3 (36-54cm)		C5 (72.90cm)		O1 (0-18cm)		O3 (36-54cm)		O5 (72-90cm)		N1 (0-18cm)		N2 (36-54cm)		N3 (72-90cm)		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Ag	0	0	0	0	0	0	0	0	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Al	5769	7126	8021	8021	8021	8021	6126	6126	6184	6184	9375	9375	6360	6360	8583	8583	8263	8263	8263
As	6	4	3	3	3	3	5	5	5	5	4	4	5	5	5	5	5	5	5
B	21	25	27	27	27	27	22	22	22	22	33	33	23	23	33	33	40	40	40
Ba	135	144	156	156	156	156	127	127	120	120	160	160	137	137	142	142	139	139	139
Be	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bi	03	4	2	2	2	2	2	2	2	2	3	3	3	3	4	4	3	3	3
Ca	7807	6785	1311	1311	1311	1311	1823	1823	1302	1302	1321	1321	3155	3155	4124	4124	2879	2879	2879
Cd	1	2	2	2	2	2	1	1	1	1	1	1	1	1	2	2	2	2	2
Co	8	9	13	13	13	13	9	9	9	9	12	12	13	13	9	9	10	10	10
Cr	12	14	15	15	15	15	13	13	13	13	17	17	16	16	16	16	16	16	16
Cu	12	6	12	12	12	12	20	20	20	20	9	9	12	12	8	8	9	9	9
Fe	14779	16774	19550	19550	19550	19550	15709	15709	16459	16459	20364	20364	16805	16805	18473	18473	23795	23795	23795
K	1048	1415	1553	1553	1553	1553	1445	1445	1099	1099	2096	2096	895	895	1787	1787	1531	1531	1531
Li	-17	-20	-18	-18	-18	-18	-17	-17	-17	-17	-47	-47	-16	-16	-22	-22	-21	-21	-21
Mg	6775	7652	4320	4320	4320	4320	4252	4252	4650	4650	4819	4819	5067	5067	6013	6013	5324	5324	5324
Mn	623	645	1042	1042	1042	1042	585	585	737	737	970	970	656	656	630	630	717	717	717
Mo	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0
Na	81	160	105	105	105	105	198	198	53	53	46	46	60	60	114	114	98	98	98
Ni	13	15	15	15	15	15	12	12	16	16	16	16	14	14	16	16	16	16	16
P	692	359	428	428	428	428	976	976	583	583	446	446	576	576	382	382	471	471	471
Pb	35	23	22	22	22	22	60	60	64	64	28	28	37	37	24	24	29	29	29
SO	1046	425	237	237	237	237	918	918	422	422	250	250	726	726	374	374	303	303	303
OSb	0	1	0	0	0	0	0	0	-1	-1	-1	-1	-1	-1	0	0	0	0	0
Se	3	6	7	7	7	7	7	7	8	8	7	7	7	7	8	8	10	10	10
Sn	4	4	4	4	4	4	5	5	4	4	5	5	4	4	5	5	4	4	4
OSr	15	12	8	8	8	8	3	3	6	6	8	8	10	10	11	11	9	9	9
Ti	129	128	139	139	139	139	139	139	127	127	137	137	121	121	134	134	125	125	125
V	17	19	21	21	21	21	18	18	18	18	23	23	19	19	21	21	24	24	24
Zn	88	63	86	86	86	86	105	105	107	107	86	86	96	96	76	76	88	88	88
Phosphate	NR	3.60	5.80	5.80	5.80	5.80	6.00	6.00	7.20	7.20	6.80	6.80	3.20	3.20	6.60	6.60	6.20	6.20	6.20
Nitrate	NR	4.20	0.66	0.66	0.66	0.66	2.00	2.00	2.20	2.20	2.00	2.00	3.44	3.44	2.80	2.80	0.54	0.54	0.54
NR:	No result																		
Munsell	4/2	4/4	4/6	4/6	4/6	4/6	4/2	4/2	4/4	4/4	4/6	4/6	4/2	4/2	4/4	4/4	4/6	4/6	4/6
	4/2:	Dark reddish-grey					4/4:	Reddish-brown					4/6:	Yellowish-red					

BELLINGTON HILL SOIL SAMPLES — OTHER RESULTS

Table 2: Bellington Hill Circles Soil Samples from Circle D

1498 --- ½ acre at Bellydenes (T77)
 1623 & 1637 Bargain sales in Bellytonfield (T106) (T107)
 1651/2 ---- Billington (T117)

By 1966 the covert had become overgrown. At this point the father of the present farmer cleared the land, including killing of weeds, and reseeded the area for use as pasture. It was then that the rings became evident.

Discussion

Possibilities which have been suggested are:

- horse gins - gypsum mining
- defence - emplacements
- horticulture - possibly related to the Elvaston Castle estate
- agriculture - either animal husbandry or crop management
- sporting - related to foxhunting activities

A major stumbling block in identifying a use is that, whilst three of the rings are reasonably flat, one of them (C) is on the hillside at an incline of roughly 10 degrees top to bottom. There is also no indication that the depressions were post holes – no timber remains, no soil staining, no stone packing.

An original suggestion was that they might be horse gins connected to the gypsum mining which was carried out at the top of the hill from the 17th to the end of the 19th centuries. No evidence in the way of gypsum spoil was found to support this and, again, the incline of circle C makes it highly unlikely.

Similarly, thoughts of searchlights, gun or other emplacements seem improbable, not only the slope but their proximity argue against such use. Decoy structures were also mentioned. Reference to the Defence of Britain Project (www.britarch.ac.uk/projects/dob/), to Jeff Clifton, a local historian whose family farmed in the area at the time and to David Willis, the present farmer, has produced no record or remembrance of any placement of any kind in this field.

It is known that in the mid 19th century the then Earl was extremely keen on developing the gardens at Elvaston Castle and employed William Barron as his Head Gardener. One of Barron's claims to fame is that he grew specimen trees of some stature for instant effect (Derbyshire County Council, Elvaston Castle Country Park). A suggestion is that these circles may have formed part of his nursery. On reflection the size of the moving gear and the presence of a number of heavy booted labourers would make the survival of the remaining features improbable.

However, it is not unlikely that the circles might form the basis of some other horticultural structure.

Another likely origin could be connected to the use of the area for hunting. Discussion with Patrick Mountain of Broomfield College raised the possibility of them being enclosures for the raising or keeping of game birds. Soil samples have been analysed in the hope that traces of such use would come to light but the results have been inconclusive. There appears to be no significant build up of either phosphates or nitrates within the circles tested compared with the outer soil (Table 2).

Suggestions of agricultural uses such as stacking crops were discounted on the grounds that the dimensions and proximity of the features were inappropriate.

There is nothing to prove either way whether or not these features were made concurrently. The thought that they may have been some on-going part of the 1600s 'Bargain Sales' is tempting and we have, of course, had the expected offering of extraterrestrial activity

Dating

In terms of dating, the ridge-and -furrow system runs at least as far as Circles B and D. As can be seen from the geophysics (Fig. 2), these earthworks were constructed on top of the medieval system and therefore must post-date it, making a possible starting point around the 13th century. The acquisition of the land by the Willis family in 1939 and the subsequent clearance in the mid 1960s gives us a rather broad time span of around 700 years.

None of the finds has been any realistic help in the process of dating. Some of the flints show signs of having been worked but their presence is not unexpected in an area where early settlement on the gravel beds of the flood plain is frequently in evidence. The small amount of pottery found is no more than might be expected in such plough soil, showing signs of considerable abrasion.

The presence of small abraded Romano-British potsherds in the pottery assemblage indicates cultivation of the site during the Roman period up to the 3rd/4th centuries (Castor ware lid) and is indicative of the proximity of a farming settlement here during the Roman period.

The identity and purpose of the structure could not be defined by excavation due to lack of evidence. Similarly, it was not possible to closely date its construction. From the sparse finds associated with the structure and the plough soil into which it was inserted, a date somewhere between mid 17th century and mid 20th century AD is appropriate.

CONCLUSIONS

Looking at the wealth of evidence for settlement and land use throughout the area from prehistoric times and at the prominent location of Bellington Hill in the Trent/Derwent flood-plain, initial expectations of this site were high.

However, throughout this project it has been easier to demonstrate what the circles are not, rather than to develop any clear idea of what they are.

Appeals to a variety of experts including the MOD, Kew Gardens, and generally through the DAS Newsletter have produced no obviously viable solutions.

One is inclined to view the four main circles as a group in space and time but, given that there are another two, at least, which are hidden beneath parked caravans, and possibly another on the hillside above these, perhaps, there are other aspects which need to be explored.

ACKNOWLEDGEMENTS

Our thanks to David Willis, the farmer on whose land we dug, for his hospitality and for some of the modern history. Thanks also to: Jonathan Wallis, Principal Curator, Derby Museum and Art Gallery, Patrick Mountain, Lecturer, Broomfield Agricultural College and Jeff Clifton, Local Historian, Shardlow for their help in discussing possibilities; Sue

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Most of all, we are grateful for the introduction and background which came from the late John Morrell and to the 26 members of the Derbyshire Archaeological Society who took part in the project.

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