

LATE IRON AGE/ROMAN CHARCOAL PROCESSING IN THE NEW FOREST: EXCAVATION OF A PLATFORM SITE AT LEADENHALL, GODSHILL, 2015

By ANTHONY C KING
 with contributions by ZOË HAZELL, STEVE MOODY and
 SUERC RADIOCARBON LABORATORY

ABSTRACT

As part of its survey work in the Open Forest, the New Forest History and Archaeology Group located a circular feature terraced into the valley side at Cockley Bushes, Leadenhall (NGR SU 198155). This appeared to be similar to later prehistoric house platforms, but was a single example rather than the groups of such monuments as usually found. The site was excavated in August 2015, with the unexpected result that the platform was not for habitation, but appeared to be linked to charcoal-processing. Finds were very few, being limited to a small number of struck flakes and a quantity of fire-affected flint. Large pieces of charcoal were also recovered, and radiocarbon dated to 2046 ± 35 BP and 1939 ± 35 BP, placing the site into the Late Iron Age to Early Roman period. A second platform was surveyed, c. 100 m to

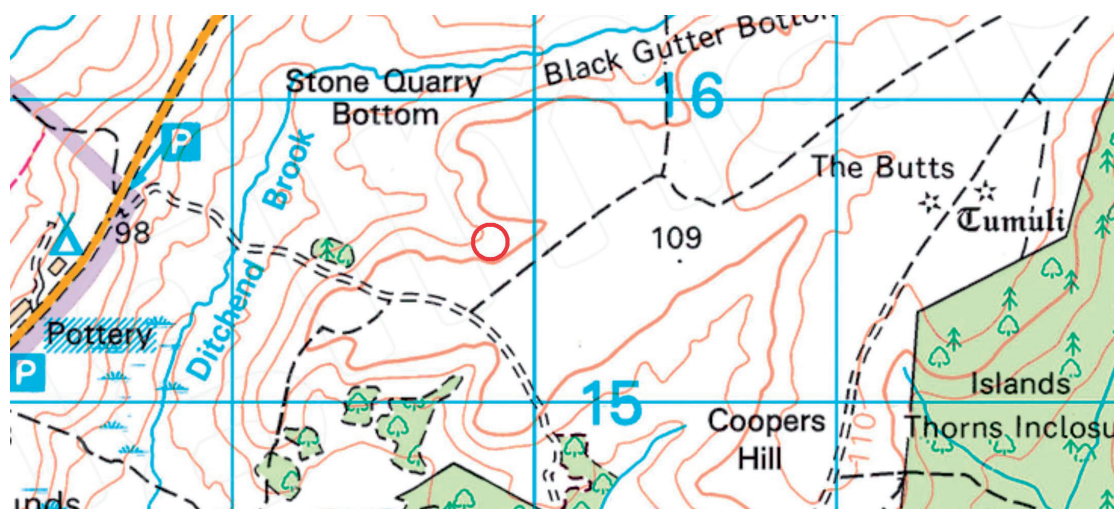


Fig. 1 Leadenhall: location plans. The general location is indicated by a circle on the outline map of Hampshire, and the site is indicated by a circle on the detailed map, located at NGR SU 198155. Scale of kilometre squares given on the lower map. OS data reproduced in accordance with NFHAG OS licence

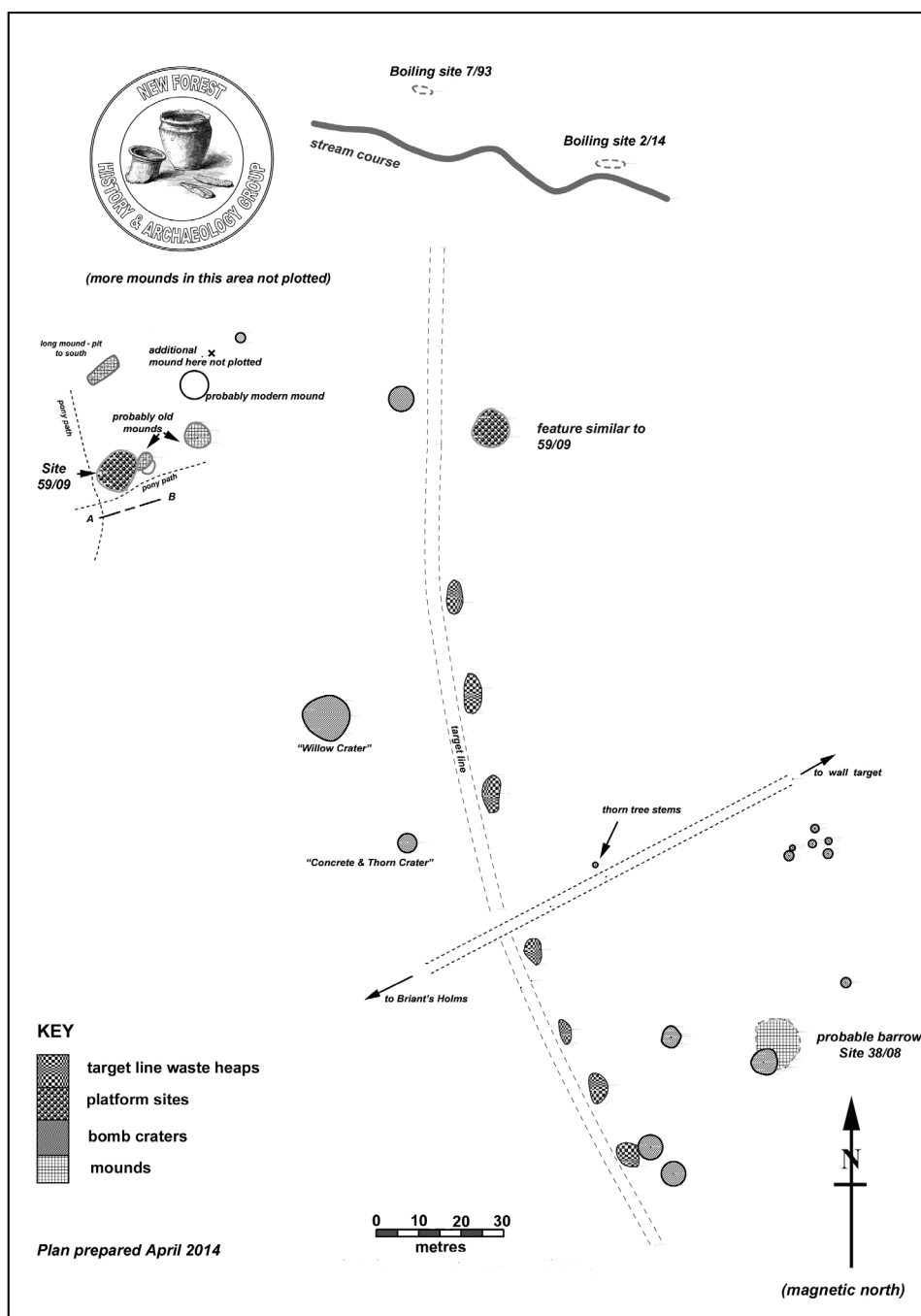


Fig. 2 Detailed survey of archaeological sites at Leadenhall, showing the Platform Site (59/09; NGR SU 198155). The second Platform Site is also indicated to the west of 59/09. A probable Bronze Age tumulus site (38/08; NGR SU 199153) is shown in the south-east sector of the plan. Other archaeological features are marked in grey. WW2 bomb craters, and low mounds associated with the target features of Ashley Walk no. 2 target are also indicated. A-B is the NFHAG survey base-line marked by wooden pegs hammered down to ground surface level. Drawing A. Pasmore



Fig. 3 View of the platform site prior to excavation (foreground), the valley and Cockley Bushes, from the SE. Godshill Ridge is in the background. Photo A. C. King

the east, and a third identified in the Cockley Bushes area, but not surveyed. These 'Platform Sites' are a new monument type for the Forest, and suggest that charcoal preparation and processing was the primary activity associated with them. The excavation also uncovered an earlier pit-and-mound feature which was similar to the many examples now known across the Forest, and which have been the subject of a separate research project by NFHAG.

INTRODUCTION

During systematic topographical survey work in the Open Forest, the New Forest History and Archaeology Group survey team located a circular feature terraced into the valley side at Cockley Bushes, Leadenhall (Site 59/09; NGR SU 198155). This appeared to be similar to later prehistoric house platforms, of the sort well-known from hillforts, such as Hod Hill,

Dorset (Richmond 1968, fig. 2; Stewart 2008), but was a single example rather than the usual grouping. The site was excavated in August 2015, because it was deemed to be of sufficient interest to warrant detailed dating and characterisation, but the hypothesis of a house platform was discarded, in favour of a platform for charcoal processing.

Location and topography

The site is on open forest heathland, where a plateau at 105 m OD is dissected by shallow stream valleys running west towards the Avon. The site lies on a north-facing slope of one of these valleys, halfway up the slope from the stream level to the plateau, at 98 m OD (Figs 1–3). The valley is sheltered and relatively narrow at this point, with the opposite slope located only some 150 m to the north.

The underlying geology is the Selsey Sand

LEADENHALL 2015

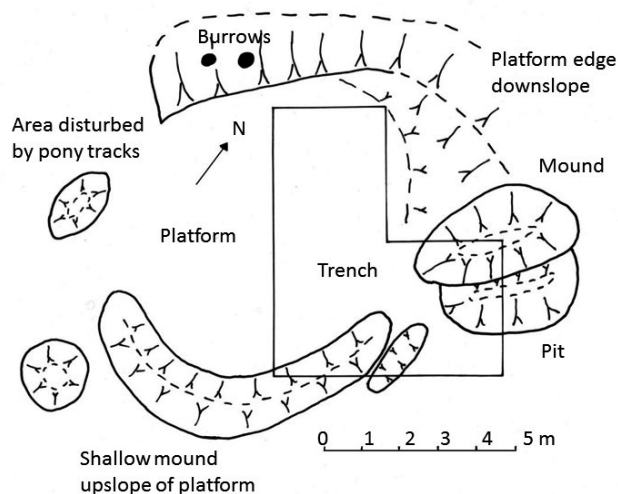


Fig. 4 Plan of the earthworks forming the platform site and the pit-and-mound feature, indicating the trench position. Drawing A. C. King

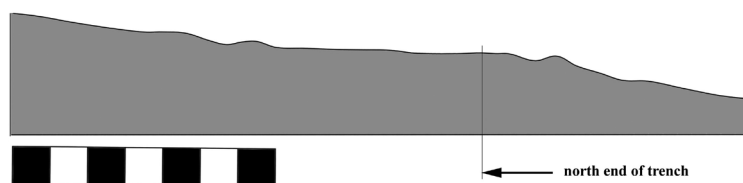


Fig. 5 Profile of the ground surface along the west side of the excavated trench, with continuation north and south to give a complete cross-section of the platform site earthwork. North is to the right-hand side of the profile. Scale in metres. Grid co-ordinates for arrow marking north end of trench: NGR 419780.3 115459.9 Height: 99.631 OD at ground surface. Drawing A. Pasmore

Formation, consisting of poorly-drained acid to very acid sands, silts and clays, locally variable in composition. This zone is of poor to medium agricultural potential (Soilscape type 18 grading to type 15; Soilscape website), consistent with its current status as heathland, grazed by cattle and horses, with extensive clumps of bracken growth. The site itself is largely covered by heather, with limited bracken.

THE EXCAVATION

Detailed survey showed that the platform was terraced into the valley slope, so that its southern, upslope side had a semi-circular low

bank surrounding it, with a poorly preserved gully on its exterior margin (Figs 4–5). On the northern, downslope side, a bank similar to a lynchet had been formed to create the platform at a higher level than the local ground surface. Animal burrows had disturbed this bank to a limited extent.

On its western side, pony tracks had dissected the bank on the upslope side, while to the east, a sub-rectangular mound occupied much of the margin of the platform, together with a depression to its south. This seemed to be identical to the pit-and-mound features investigated in previous NFHAG excavations (King 2014a), and the trench included this feature, to establish the relationship between it and the platform. The pre-excavation survey also

LEADENHALL 2015 Trench Plan

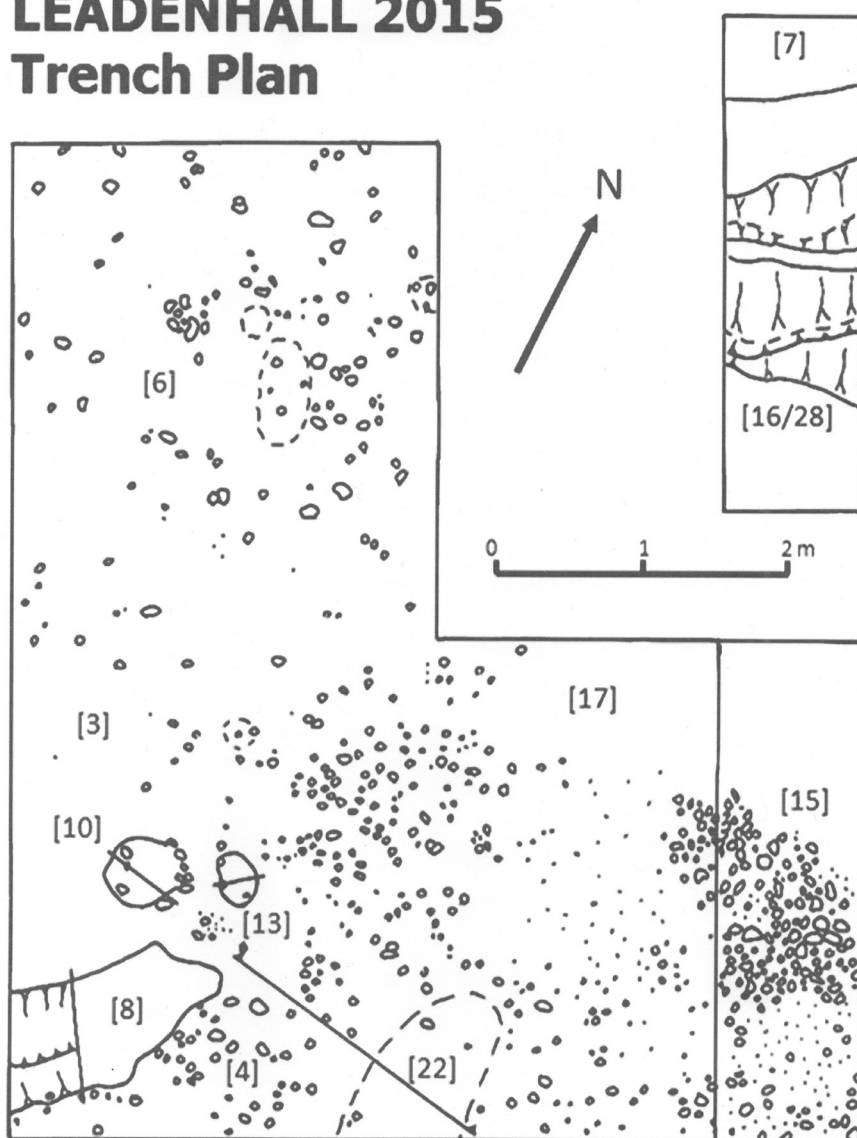


Fig. 6 Plan of excavated features. The inset at top right is the lower plan of the deeper section on the eastern side of the trench, through the pit-and-mound feature. Grid co-ordinates for south corner of trench: NGR 419783.7 115453.7; height 100.135 OD at ground surface. Drawing A. C. King

recorded further mounds and other features to the east and north, but these were not investigated by excavation.

Excavation took place for a week; the trench was laid out in an L-shape (Figs 6–7), with its

western edge placed along the mid-point of the platform, creating a N-S cross section. The eastern side was also laid out so that it sectioned the mid-point of the pit-and-mound feature.

A test-pit dug in the northern sector revealed



Fig. 7 General view of the excavation, with the platform in the foreground, from the SW. Scale 2m. Photo A. C. King

that the greyish natural sand was underlain at 20 cm depth by an iron-pan layer 15 cm thick. Under this, yellowish/brown clay at 35 cm depth formed the natural deposit (also seen in the lower part of pit 28). The clay continued to at least 1 m depth within this pit section, but was not investigated further.

The archaeological sequence starts with the construction of the pit-and-mound feature (Table 1; Phase 1a). The core of the mound was composed of sandy silty clay, solid and compact, and almost certainly dug out from the pit immediately adjacent to the south. The mound at this stage is estimated to have measured 3×1.5 m, fairly small by comparison with others previously investigated. The pit was only observed to the south, and did not run under the mound, again unlike some of the previously observed stratigraphies (cf. King 2014a). The maximum depth of the pit was 1 m below present ground surface (Figs 8 & 9) and

it presented a steep V-shaped profile. A thin primary silt [27] formed at the base, rapidly covered on the south side by a clean sandy dump probably derived from the mound [25]. The main part of pit was then filled by a dark humic layer [26], which had some evidence of iron-pan formation.

In a secondary phase (Phase 1b), the feature was enlarged by a brown sandy dump [18/23], to reach its full dimensions of 4×2 m, and the pit probably recut to make a shallower, more rounded profile (the upper line of 25 and 26 on Fig. 8). The shape of the recut was not uniform, however. A possible post-hole was observed in the base of 16 during excavation [20/21], but was ultimately considered not to be one (not on Figs 6 or 8).

The final activity associated with the pit-and-mound feature was a thick grey sandy fill [24], with many flints up to 150/200 mm in length, some well packed-in, as if deliberately placed to

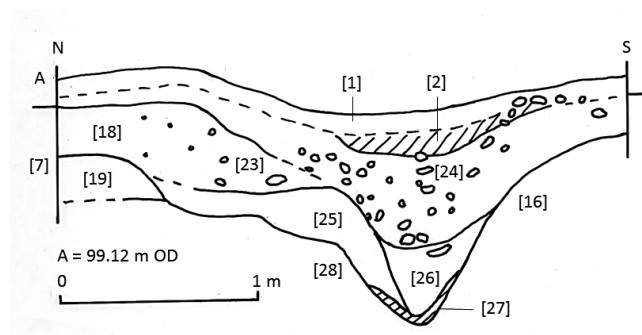


Fig. 8 Section drawing of the east side of the cut through the pit-and-mound feature. Drawing A. C. King

form a solid footing within the pit. This activity has been phased as 1b/2a, on the basis that it could belong with the pit, or be part of the primary activity associated with the construction of the platform. Two radiocarbon samples were taken from this context, but neither yielded enough carbon for a viable result.

Expansion of activity across the whole area is seen in Phase 2a, when the platform was constructed to the west of the pit-and-mound feature. The slope was transformed into a level platform, by truncation on the southerly, upslope side, and the formation of a curved shallow mound [4] around the perimeter.



Fig. 9 The section cut through the pit-and-mound feature, from the NW, showing the mound [7] (left) and the pit [16/28] (centre). Photo A. C. King



Fig. 10 Oval features [10] (right) and [13] (left), possibly very shallow post-holes, within the platform area, from the N. Gully [8] and the perimeter upslope mound [4] are behind. Scale 1m. Photo A. C. King

Inside this, a shallow gully [8], slightly lower than the surface of the platform, was probably created as a surface-water control feature to prevent the platform from becoming too wet. Similarly, a gully was created on the exterior of the perimeter mound [22] which ran out close to the eastern margin of the filled-in pit [16]. This implies that any water diverted around the platform would be channelled into the pit and away from the platform site. Rounded flints up to 250 mm [15] (not on Fig. 8) had been placed in the top of 24 in the upper pit fill, apparently to stabilise it and form a working surface.

The down-slope margin of the platform was, in effect, a miniature curving lynchet (Fig. 3). It was not sectioned and it was not possible to detect any change in the sandy soil matrix of the platform itself, so the dump of soil used to create the level platform was almost certainly simply effected by scraping soil from upslope

and dumping it downslope. The platform had an effective working area of 6 m diameter, with access easiest on the east and west sides where the platform and the natural ground surface coincided. The mound of the pit-and-mound feature was still in existence, however, which may have constrained access on the east side.

Features within the platform area included two areas of dark, charcoal-rich fill [10/11 and 13/14], which were initially identified as post-holes, located on the east side of the platform and conceivably part of an entrance feature (Fig. 10). However, on excavation it became apparent that they were simply slightly deeper (c. 20–50 mm) parts of the platform and had no structural function. Elsewhere, small groups of flints and dark sandy patches were planned (Fig. 6), which did not form any clear pattern, and were probably random concentrations within the platform matrix.

The final ancient phase of activity (Phase



Fig. 11 The surface of the platform, showing the dark charcoal-rich layer that covered it, from the NW. Scale 1 m. Photo A. C. King

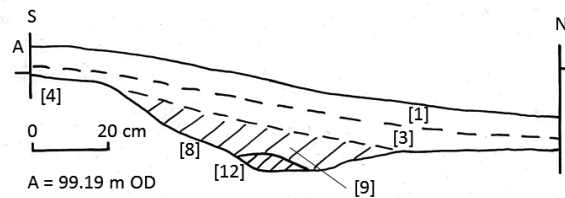


Fig. 12 Section drawing of curving gully [8]. The section is positioned along the west edge of the trench, in the SW corner. Drawing A. C. King

2b) marked the use of the platform site, and was formed of a relatively uniform fill layer [2, 3, 5, 6] covering the platform, the gullies and the pit to the east (Fig. 11). This layer was not found on the apex of the mound, but covered its lower perimeter [17]. The fills [11, 14] of

features 10 and 13 were also indistinguishable from the general fill layer. The characteristics of all these fill layers were dark sandy silt, with many pieces of charcoal and a scatter of flints up to 150 mm in length. One of the radiocarbon samples was selected from this layer,

Table 1 Phasing. For full context information, see King 2017b, App. 1

- 1a Pit-and-mound feature: initial digging of pit and construction of mound. Composed of contexts 7, 19, 25, 26, 27, 28.
- 1b Pit-and-mound feature: secondary recut of the pit/hollow and enlargement of the mound. Composed of contexts 7, 16, 18, 20, 21, 23, 24 (could also be phase 2a).
- 2a Platform: construction of the platform and dumping within the pit/hollow of the pit-and-mound feature, intended to ease access to the platform from the east side. Composed of contexts 4, 8, 10, 13, 15, 22, 24 (could also be phase 1b).
- 2b Platform: use of the platform, and accumulation of charcoal-rich layers covering it and surrounding areas, such as over the pit-and-mound feature. Composed of contexts 2, 3, 5, 6, 9, 11, 12, 14, 17.
- 3 Modern: topsoil and turf. Context 1.

specifically from [6] in the northern sector of the platform.

The interior gully [8] also had a fill [9] that was effectively identical to the layers over the platform. Under it was a narrow curving primary layer [12] (Fig. 12), again more-or-less identical with the overlying layers, but having a more mottled brown/grey sandy appearance. This sealed layer provided a charcoal sample for a radiocarbon date (see below).

Above the Phase 2b layers was modern topsoil and turf (Phase 3). No features were found, and it seems that the activity of the World War 2 bombing range had little effect on the site, save the recovery of a small piece of shrapnel in a pre-excavation metal-detector scan.

RADIOCARBON DATING based on a report by SUERC

Four samples were sent for radiocarbon dating at the Scottish Universities Environmental Research Centre AMS Facility (SUERC). Two, from [24] in the upper fill of the pit (Phase 1b/2a) had too little carbon for dating, due to humification, with the consequence that the pit-and-mound feature remains effectively undated. This type of feature seems to be late prehistoric, possibly Neolithic/Bronze Age, to judge from the general lithic assemblage, and also the findings from other sites investigated by NFHAG.

The other two radiocarbon samples produced dates of 2046 ± 35 BP (SUERC-65053 (GU39611)) from context 12, and 1939 ± 35 BP (SUERC-65054 (GU39612)) from context 6. For the sample from 12 there is 68.2% probability of the calibrated date lying between 104 BC and AD 3, and 95.4% probability of it lying between 168 BC and AD 25 (AM 1 online). For the sample from 6, the calibration is a little more complex, but overall, it gives a 68.2% probability of a calibrated date lying between AD 23 and 120, and 95.4% probability of a date between 36 BC and AD 130 (AM 2 online). Stratigraphically, 12 underlies 6, and it should be noted that the date is a little earlier. However, the statistical overlap in the dating results means that the dates should be regarded as representing the same phase of activity.

These dates fall into the Late Iron Age and Early Roman period, with a focus on the early 1st century AD. Given that the two samples are from relatively large pieces of charcoal, probably from oak heartwood, and therefore from mature tree branches/trunks rather than small roundwood, there is the possibility that the wood was old at the time of its conversion into charcoal. The radiocarbon age represents the date of the living timber, so it is conceivable that the charcoal-burning was taking place in the Early Roman period, using timber that had been felled somewhat earlier. However, the time lag between felling and burning was possibly not very long.

FINDS

Most of the finds were lithic. There was a small quantity of burnt or heat-crazed flint, approximately 250 g, but not enough to suggest that the charcoal present on the platform was heated in association with a boiling/burning mound.

Five pieces of non-local-stone (NLS) were found (90 g), including a shaped and worn piece of grey sandstone from [6] that may have been a whetstone (cf. King 2017b, App. 2), together with seven local flints that showed signs of surface wear, including a round and dimpled fossil from [6], probably a sea urchin (510 g). These may have been used in a processing activity on the site.

There was no pottery, and a single modern piece of ironwork, probably a fence post. During a pre-excavation scan using a metal-detector, another piece of modern metal was found, probably shrapnel from the nearby World War 2 bombing range (Pasmore & Parker 2006). The finds and site archive will be housed with the Hampshire Cultural Trust.

Lithic assemblage by Steve Moody

There is a very small assemblage of five flints. An unusually high percentage of these are tool types and utilised flints with only one waste flake. Two of the tools and the waste flake are tertiary flakes and all except one tool type retain a certain degree of cortex. No blades or other indicators of an earlier context are present.

Of the utilised and retouched flakes, one retains the appearance of a deliberately

fashioned point. The secondary flake is narrow and corticated to a large degree on the distal end and dorsal side but the proximal has been removed to take off the thick bulb and for a thin rounded point to remain. There are fine utilisation signs on the right edge of the point.

The tools are both knives and make use of tertiary flakes that have not necessarily been fashioned for the purpose but have fortuitously lent themselves to that use. Neither are finely retouched flakes but are sharp thin flints that have been utilised for that purpose. Interestingly they both appear to have had the opposite side to the sharp edge removed or partially removed to create a blunting of that edge.

The first knife is a broad thin grey flint with a platform butt and a small area of cortex on the distal (Fig. 13a). The right edge shows signs of having been utilised. Part of the left edge appears to have a flake scar originating from the core it was struck from and an adjoining scar that is possibly from a deliberate action. Combined, the two act to blunt the left edge. The second knife is smaller with a platform butt and of a dark brown flint (Fig. 13b). The left, cutting, edge has slight retouch and signs of having been utilised. The right edge has been deliberately removed to create a blunted edge.

Catalogue

1. Knife on broad tertiary flake, platform butt, corticated distal. Thin flake with a utilised right edge. Possible deliberate removal of part of the left edge to blunt it. Light grey. Context 2 Small Finds 6 (Fig. 13a).

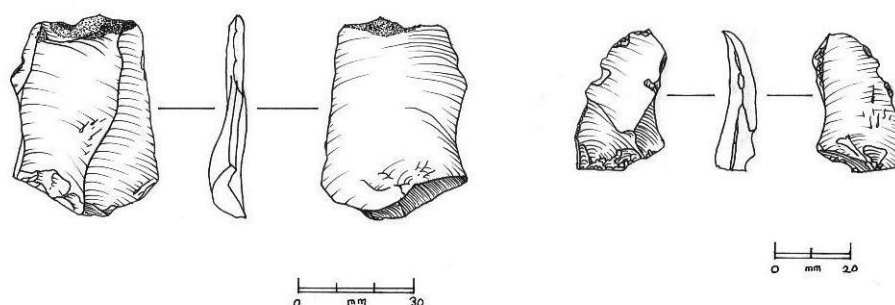


Fig. 13 a) (left) Flint tool, App. 3 no. 1; b) (right) Flint tool, App. 3 no. 2. Drawings S. J. Moody

2. Knife on tertiary flake. Removed right edge. Retouch and utilisation on left edge to dorsal. Platform butt. Dark brown. Context 26 Small Finds 8 (Fig. 13b).
3. Utilised corticated secondary flake. Corticated distal to dorsal. Removed proximal to form point. Utilised on right edge of point. Brown. Context 6 Small Find 2.
4. Utilised corticated primary flake, corticated butt. Cortex on most of dorsal except distal left edge which has signs of utilisation. Brown. Context 6.
5. Tertiary flake, removed left edge and distal, platform butt. Cortex on left edge distal. Brown. Context 23 Small Find 7.

Summary

It is hard to draw firm conclusions from a small sample of lithic artefacts. The lithics were manufactured from poor raw material, quarried from New Forest upper gravels and are probably Bronze Age in date. The waste to tool type ratio is unusual but with just five flints is probably meaningless. The tools are basic and just functional; no special knapping skills or core design are present and with so little waste no conclusions can be drawn concerning production techniques.

Analysis of wood charcoal remains by Zoë Hazell

Introduction

Charcoal remains were recovered from the platform and its associated features, some of which were radiocarbon dated to the Late Iron Age – Early Romano-British period (see above). The charcoal-rich deposits had initially been taken to be an indication of the site's use for charcoal production. All ten samples examined here were from Phase 2b (AM 3 online). The samples were from Contexts 2, 5, 6, 9, 11, 14 and 17, and three were duplicates from Contexts 2, 5 and 9.

Methods

The samples were air-dried slowly at room temperature. The volume of charcoal was recorded (ml) using a 250 ml beaker. Where samples had ten or fewer fragments, all the fragments were analysed. For samples with more than ten fragments, only ten were recorded in detail, and the remaining (with all planes >4 mm)

were examined briefly (without breaking) to determine likely wood type.

Wood identifications

Wood identifications were carried out using a combination of the descriptions and keys by Schweingruber (1990) and Gale and Cutler (2000). Samples were snapped and the fresh planes examined under high-power light-reflecting microscopy (using an Olympus BHM) between magnifications of x50 to x500). For most of the samples, it was only necessary to look at the transverse section (TS), but where necessary, the other two sections (radial section (RS) and transverse longitudinal section (TLS)) were examined. All floristic interpretations follow Stace (2010).

Other characteristics

The following characteristics were recorded for the (up to) ten fragments that were examined in detail from each sample. Measurements were made using Mitutoyo digital callipers (CD-8°CW), recording lengths in mm to 2 decimal places. The size of each fragment was measured on the cross-section face (the TS) along the longest axis (i.e. maximum) and that perpendicular (i.e. minimum), and the length of each fragment. Other features and characteristics were recorded where possible, based on Marguerie and Hunot (2007). These included: growth ring counts, radial measurements, radial cracks, ring curvature (none, weak, moderate, strong), degraded/fungal matter, degree of vitrification (I = low, II = strong and III = total fusion) and the presence/absence of tyloses. Average ring widths were calculated using the growth ring counts and radial measurements.

Results (Table 2 & AM 4 online)

Only one wood taxon was identified: *Quercus* sp. (oak) (Fagaceae). From the flame-like patterning of the latewood, it is possible to say that they are from deciduous oak, and within the British Isles only *Q. robur* (pedunculate oak) and *Q. petraea* (sessile oak) (Gale & Cutler 2000, 204) are native. Three fragments were indeterminate, i.e. unidentifiable; two of these were knotwood and all three were highly vitrified.

Table 2 Sample details and charcoal identifications for the fragments examined in detail from each sample (up to 10 fragments)

Sample number	Charcoal volume (ml)	Total fragment count	Wood identifications (fragment count)			
			Quercus	<i>cf</i> Quercus	<i>Indet.</i>	<i>Total</i>
2 (a)	75	6	6	–	–	6
2 (b)	175	29	8	1	1	10
5 (a)	125	41	9	1	–	10
5 (b)	20	6	1	4	1	6
6	50	7	6	1	–	7
9 (a)	175	56	9	1	–	10
9 (b)	425	64	8	2	–	10
11	25	10	9	1	–	10
14	25	2	2	–	–	2
17C	25	6	3	2	1	6

‘Total fragment count’ is the total of the 10 recorded, plus additional fragments >4mm that were picked out of the sediment. Labels (a) and (b) were allocated here to distinguish between multiple samples from the same context.

Growth rings

No fragments were complete radial sections (i.e. including both the pith and bark) and so none of the ring counts represent an ‘age at death’. On the assumption that the growth rings are annual (although false rings and missed rings can occur) the oldest piece of intact wood charcoal is at least 51 years. The average ring widths calculated range from 0.3 to 6.4 mm for the site as a whole. Some of the growth rings were so narrow, suggesting very slow growth, that it was not possible to distinguish between them, resulting in some level of uncertainty.

Ring curvatures were generally Weak-None, indicating older, mature wood, probably from larger tree elements e.g. trunk. Only a few fragments with moderate curvature were recorded, suggesting they came from smaller tree elements (i.e. branch).

Possible working

Some fragments from Contexts 2, 5, 9 and 17 seemed to be cuboid, with a degree of perpen-

dicularity at some/all of their corners. Five of these nine fragments came from Context 2 – the charcoal fill from the upper level of the pit. Although there is some variability in their size, most had edges (on cross-section) within the range 10 to 15 mm long. One of the two fragments from Context 14 – the fill of a shallow circular feature – had a curved, worked edge, and a fragment from Context 9 – the fill of the curved gully – had a flat, obliquely-angled face.

Wood condition

Vitrification was common within the assemblage as a whole, and where it was most extreme it meant that certain features were destroyed. It often resulted in the fusing of the multiseriate ray cells, and caused splits (i.e. radial cracks) along the line of these rays too. The mechanism/s responsible for causing charcoal to vitrify are not fully understood, but McParland *et al.* (2010) have discounted both reburning wood (i.e. using charcoal as fuel) and high temperature burning.

The wood structure on some fragments from Contexts 2, 5, 9 and 11 was deformed; in particular the large early wood vessels were compressed, indicating poor wood condition (i.e. some degree of decay) prior to burning. Four of the seven fragments noted as such were from Context 11 – the fill of a shallow circular feature.

A fragment from Context 2 appeared to show evidence of damage to the wood; tyloses were present in the youngest rings (rather than in the oldest rings, as would be expected in normal wood growth).

Additional fragments

The other fragments were all examined quickly to check whether any other taxa were present; but it was concluded that no other wood types were present, and that those fragments consisted of cf. *Quercus*. Overall, the fragments showed the same characteristics as those recorded in detail – notably the dominance of weak/none ring curvature, including evidence of very slow growth (very narrow growth rings), vitrification and the presence of tyloses (heartwood).

Summary

Overall, the wood charcoal remains at the site were dominated by mature cf. *Quercus* (oak) wood (including both heartwood and sapwood) which likely came from larger calibre tree elements, and which at times was extremely slow growing. Vitrification was common, and often severe, sometimes resulting in the complete destruction of certain wood features and characteristics.

Discussion and conclusions

The predominance of oak in the samples is not unusual, as it is commonly found in archaeological contexts within Britain. However, charcoal recovered from charcoal burning platforms typically includes remains of small diameter roundwood elements, because straight stems of wood (often from coppicing) were most-commonly used (see Edlin (1949) and Rollinson (1987, 142–145) for details on the traditional manufacturing process). Analysis of charcoal from charcoal burning platforms from Brede High

Woods (East Sussex) (Challinor 2014) and Barbon (Cumbria) (Hazell *et al.* in press), for example, have recorded such remains, also with strong ring curvatures (*ibid.*). At Leadenhall, most of the wood charcoal's characteristics are not like that; instead, remains are dominated by mature wood (indicated by the weak/no curvature of the growth rings) on fragments that included neither pith nor bark. Many of the fragments also had tyloses (i.e. heartwood) suggesting that the charcoal remains come from older wood (in England and Wales oak can have up to 46 sapwood rings (Historic England 1998, 13)).

That only a single taxon is represented at Leadenhill is rare: charcoal production sites usually have a greater taxonomic diversity. The synthesis of wood types recovered from charcoal burning platforms across the British Isles (Hazell *et al.* in press) indicates that whilst oak is recorded at most of the sites, it is always associated with at least two other wood types. In addition, this platform feature is reportedly not typical of known (younger) charcoal production sites from the New Forest, where charcoal was made in pits ('pitsteads') (Pasmore 2016).

These differences in the Leadenhall material, together with the finds of burnt flints in the deposits, may require the reappraisal of the platform as a site of charcoal production – at least in terms of what is commonly understood to be the typical production process (i.e. turf-covered 'clamps'/stacks using roundwood). The value of charcoal analysis has been demonstrated by the additional interpretative information that the charcoal remains have provided.

DISCUSSION

A significant finding was the establishment of a stratigraphic relationship between the platform and the pit-and-mound feature. The latter had two stages; an initial phase of mound construction and pit digging (Phase 1a), followed by an enlargement of the mound, possibly as a result of recutting the pit (Phase 1b). The subsequent filling of the pit by layers of sandy soil with many pieces of flint

may represent a final episode in Phase 1b, but it is also possible that it was the first activity linked to the platform (Phase 2a). Dumping of material to consolidate the upper fill of the pit was associated with the platform, as a possible cobbled surface sloped down into the western side of the feature. It seems likely that access to the platform from the east necessitated this levelling operation. It is clear that the pit-and-mound preceded the platform, though by how long has not been resolved. A best estimate is that the pit-and-mound feature is Bronze Age, whilst the radiocarbon results indicate a Late Iron Age/Early Roman date for the platform.

This is now the fourth pit-and-mound site to be excavated by NFHAG in recent years. It conforms with earlier results, and can be seen to have similar characteristics. It is not part of a group, however, and in some respects is smaller and simpler in structure. As before, a funerary function seems unlikely, and an as-yet unknown material processing system is the most likely interpretation (cf. King 2014a; 2017a). The location of this site, in a valley with other traces of activity in the form of burnt (boiling) mounds (Fig. 2), suggests that these sites may not be far from settlement areas of the same general date. To the immediate south of the site lies a plateau area with Bronze Age funerary monuments (cf. King 2017b, App. 4 and 5).

The main outcome of the excavation, however, was the defining of a new monument type for the New Forest, the 'Platform Site'. The terminology is deliberately non-functional, since it is still not entirely clear what purpose the platform served. The working hypothesis was that it was for a house, but the lack of structural post-holes led to this interpretation being discarded, in favour of a charcoal-processing platform. Possible post-holes, 10 and 13, were so shallow (less than 5 cm) and vague in outline as to be unlikely as post-bearing features, whilst the quantities of charcoal and dark sooty sandy soil favoured the burning of wood for charcoal, either *in situ* on the platform, or elsewhere and then brought into the site area for secondary processing. Pieces of charcoal were up to 40 × 30 × 20 mm, derived from quite substantial oak

heartwood. It seems likely that the platform was constructed to provide a level working surface, either for a roughly circular wood stack, up to 6 m in diameter, which was fired to create charcoal, or as a circular processing area, perhaps for selection and use of oak charcoal after burning elsewhere. The small number of burnt flints were probably on the ground surface at the time of firing. However, no traces of burning were detected in the sandy matrix of the layers covering the platform, so it remains possible that firing took place elsewhere. The worn flints (see finds report, above) may be relevant to this processing activity, but their exact usage was not established.

In terms of morphology, this type of circular Platform Site, with its charcoal-processing association, is unlike the medieval and post-medieval charcoal-burning pits found in the Forest (see Hazell's report, above; Pasmore 2016; inf. R. Reeves, A. Pasmore, C. Read), and therefore represents an earlier system that did not use pits. It is more likely that clamps or stacks were utilised. The Leadenhall site demonstrates that different parameters were followed in the Late Iron Age and Early Roman periods, and that the conclusions drawn for later periods may not necessarily apply, in terms of the selection of wood species, etc.

The positioning of the site in the landscape is reinforced by the finding of a second platform 150 m to the east (Fig. 2) and the probable existence of a third to the west. Topographical survey during the excavation established the plan and profile of the second site (Figs 14 & 15). It had a similar location, on a north-facing slope, but was a little nearer the head of the small valley, and lower down the valley side. Both sites have the characteristics of being sheltered from prevailing westerly winds by a protective spur of land about 400 m to the west; also their position between the valley bottom and the plateau to the south affords additional protection. It is apparent that the sites did not need to be very close to a water source. Charcoal was noted in a subsoil exposure of the upslope curvature of the second platform.

A putative charcoal-processing function for

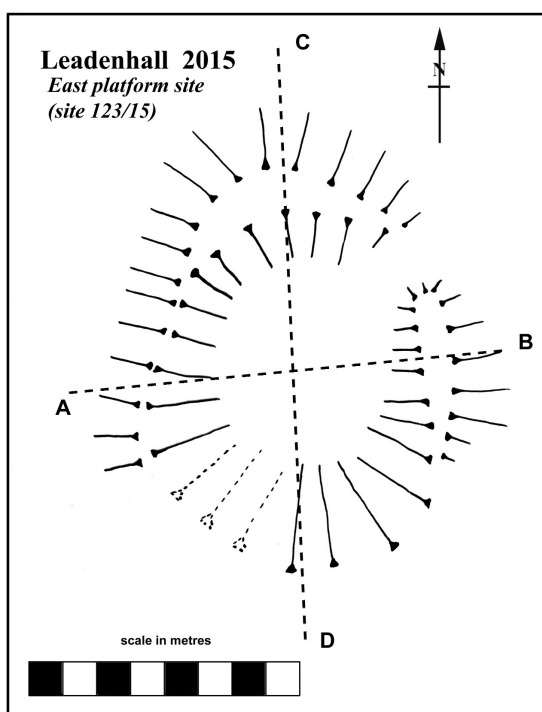


Fig. 14 Plan of the second platform site (123/15) (see Fig. 2). Drawing A. Pasmore

the platform implies woodland management on the part of those operating the site. Sites in the Southampton Basin show that oak, elm, hazel and ash were all present in charcoal

analyses from hearths (cf. Dowd's Farm, Hedge End: Pelling 2012; Clelland 2012, 156–7), and pollen analyses indicate widespread oak, hazel and elm mixed woodland being gradually cleared during the 1st millennium BC in favour of oak, beech and holly dominant woods (Tubbs 2001, 65; cf. also Barrow Moor: Silva & Phillips 2015, 71–2; Grant & Edwards 2008; Dowd's Farm: Grant 2012). The absence of beech in the Leadenhall samples is of some interest, in view of the association of this species with woodland management in the historic period (Grant *et al.* 2011, 402; Tubbs 2001, 67), but it is possible that the exclusively oak samples from the site are a result of selection during processing rather than implying any absence of other species in the local landscape. A final observation is that the current open aspect of the site is somewhat illusory, since the sparse tree cover of Cockley Bushes, just to the west of the site, is in fact a relict of more extensive medieval and post-medieval woodland in the valley (inf. R. Reeves).

The radiocarbon dates have revealed that the platform site was functioning in the Late Iron Age into the Early Roman period, with more emphasis on the latter period. This would fit with the notion of Roman charcoal production for export out of the New Forest, for use in furnaces or braziers, probably linked to metal-working. It seems unlikely that these activities were taking place in close

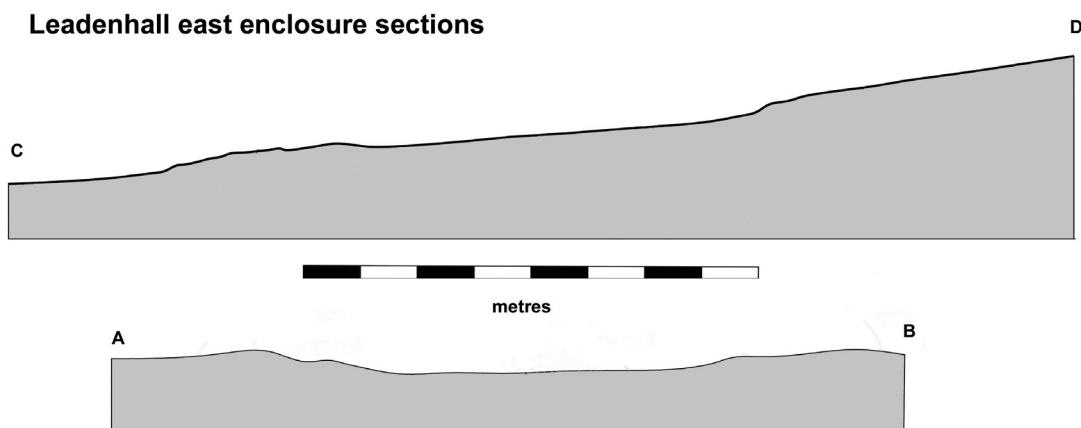


Fig. 15 East-west and north-south profiles through the second platform site. Drawing A. Pasmore

vicinity to the excavation site, in view of the complete absence of any indicative evidence, either artefactual or topographical. As such, the economic model in operation was probably one of small-scale and relatively impoverished charcoal production, exploiting the wooded marginal land of this part of southern Britain. Export was probably regional, to towns such as Winchester (*Venta Belgarum*) or Old Sarum (*Sorviodunum*), and to villas and other settlements within the Iron Age territories and Roman *civitates* of the Durotriges and the Belgae. It is probably no coincidence that Leadenhall is close to the New Forest Late Roman potteries (Fulford 1975; Smith 1999, fig. 24), which exploited this landscape in a similar fashion, albeit more intensively. The lack of any Late Iron Age or Early Roman finds such as pottery from the site indicates that charcoal production was taking place in isolation from contemporary settlements, and may have been an itinerant activity conducted by low-status individuals, or dependent labour, such as slaves or workers attached to an estate or villa located off the Forest. It is a valuable insight into an activity and a social group largely invisible in the archaeological record.

ACKNOWLEDGEMENTS

As ever, the NFHAG digging team performed sterling work, despite wet and cool conditions. In particular, I would like to thank Maddie Andrews for driving her Land Rover onto site, towing the NFHAG equipment trailer. This was an essential logistical element without which no progress at all would have been made. It is invidious to single out individual contributions, but we must highlight the hard work of Harold Hanna and Senan Hennessy, as well as all those who volunteered: Peter Bloe, Stuart Bloom, Shireen Caals, Mike Craig, Rosemary Hart, Jenny Horner, Chris Read, Richard Reeves, Laura Swarbrooke and Brian Tovey. Anthony Pasmore and the NFHAG survey team did the detailed original survey work represented in Fig. 2, as well as additional survey of the second Platform Site during the excavation itself. Zoë Hazell and Steve Moody very generously contributed specialist reports. I would also like to thank Frank Green and Lawrence Shaw of the New Forest National Park Authority for their advice and input, as well as Marianne Bergin, Kathy Sterne and the staff of the Forestry Commission who handled the permit for the excavation.

REFERENCES

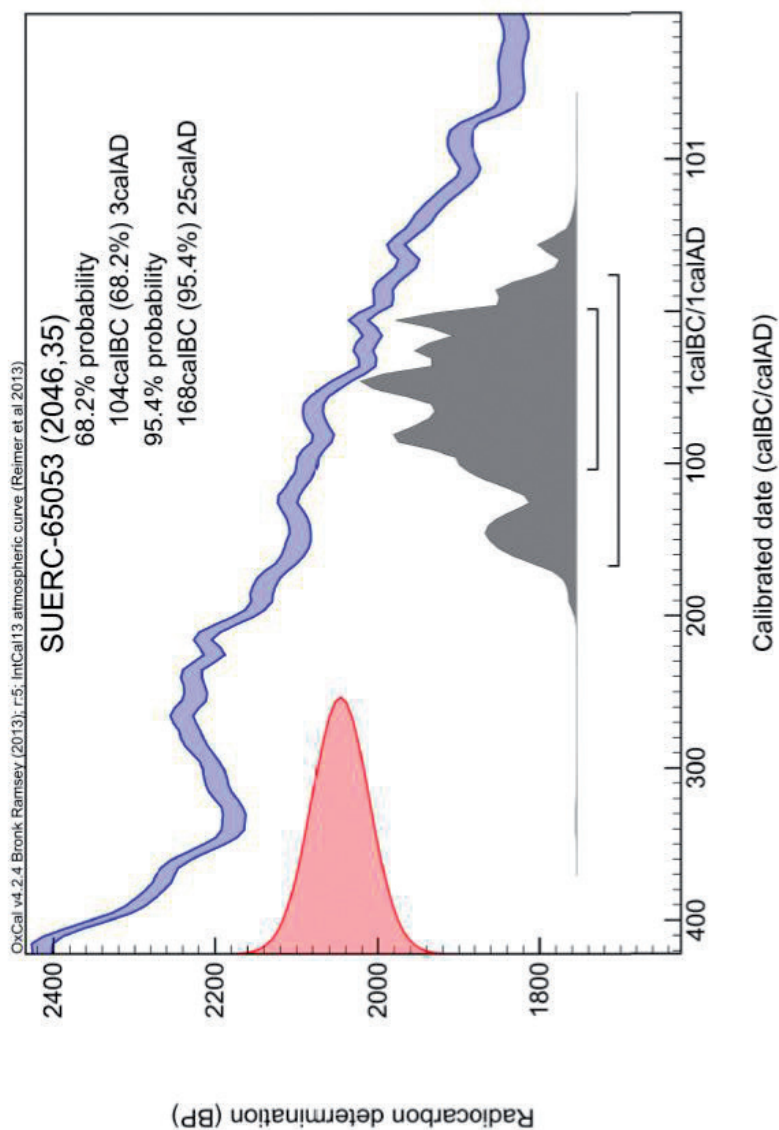
- Challinor, D 2014 Wood charcoal, in Butler, C, Russell, C, Bradshaw, A & Blandford, V (ed.) *An Archaeological Research and Community Project at Brede High Woods, East Sussex*. Appendix 8: the finds, 67–72.
- Clelland, S E 2012 Prehistoric to post-medieval occupation at Dowd's Farm, Hedge End, Hampshire, *Proc Hampshire Fld Club Archaeol Soc* **67.1** 142–73.
- Edlin, H L 1949 *Woodland Crafts in Britain: an account of the traditional uses of trees and timbers in the British countryside*, London.
- Fulford, M G 1975 *New Forest Roman Pottery* (BAR Brit Ser 17), Oxford.
- Gale, R & Cutler, D 2000 *Plants in Archaeology: identification manual of vegetative plant materials used in Europe and the southern Mediterranean to c1500*, Kew.
- Grant, M J 2012 Dowd's Farm, Hedge End, Hampshire. Supplement to publication: pollen analysis, online publication: <http://www.wessexarch.co.uk/62354/dowds-farm>.
- Grant, M J & Edwards, M E 2008 Conserving idealized landscapes: past history, public perception and future management in the New Forest (UK), *Vegetation History & Archaeobotany* **17.5** 551–62.
- Grant, M J, Waller, M P & Groves, J A 2011 The *Tilia* decline: vegetation changes in lowland Britain during the mid and late Holocene, *Quaternary Science Reviews* **30** 394–408.
- Hazell, Z, Crosby, V, Oakey, M & Marshall, P (in press) Archaeological investigation and charcoal analysis of charcoal burning platforms, Barbon, Cumbria, UK, *Quaternary International*, Proceedings of the anthraco2015 (6th International

- Anthracology Meeting), University of Freiburg, Germany, 30th August to 6th September 2015.
- Historic England, 1998 *Dendrochronology: guidelines on producing and interpreting dendrochronological dates*.
- King, A C 2014a The Pit-and-Mound Project episode 3: excavations at Ashurst Lodge, August 2013, *New Forest History & Archaeology Group Report* 6 26–37.
- King, A C 2014b *House-Platform Project: excavation at Leadenhall, SU 1915. Written scheme of investigation for an archaeological excavation*, unpublished paper for New Forest National Park Authority and the Forestry Commission.
- King, A C 2016 A new monument type for the New Forest: excavation of a Late Iron Age/ Early Roman ‘platform site’ at Leadenhall, Godshill, 2015 *New Forest History & Archaeology Group Report* 8 47–60.
- King, A C 2017a *The NFHAG Pit-and-Mound Project. 3: excavations at Ashurst Lodge, August 2013*, *New Forest History & Archaeology Group Archaeology Report* 1.
- King, A C 2017b *Late Iron Age/Roman charcoal-processing in the New Forest: excavation of a ‘Platform Site’ at Leadenhall, Godshill, 2015*, *New Forest History & Archaeology Group Archaeology Report* 2.
- Marguerie, D & Hunot, J-Y 2007 Charcoal analysis and dendrology: data from archaeological sites in north-western France, *J Archaeol Sci* 34.9 1417–33.
- McParland, L, Collinson, M, Scott, A, Campbell, G & Veal, R 2010 Is vitrification in charcoal a result of high temperature burning of wood? *J Archaeol Sci* 37 2679–87.
- Rollinson, W 1987 *Life and Tradition in the Lake District*, 2nd ed., Clapham.
- Pasmore, A 2016 Charcoal burning in the New Forest – the historical background and archaeological evidence, *New Forest History & Archaeology Group Report* 8 5–22.
- Pasmore, A & Parker, N 2006 *Ashley Walk. Its Bombing Range. Its Landscape and History*, New Forest Research and Publication Trust, 3rd ed., Lyndhurst.
- Pelling, R 2012 Dowd’s Farm, Hedge End, Hampshire. Supplement to publication: charcoal, online publication: <http://www.wessex-arch.co.uk/62354/dowds-farm>.
- Richmond, I A 1968 *Hod Hill II. Excavations carried out between 1951 and 1958*, London.
- Schweingruber, F H 1990 *Microscopic Wood Anatomy: structural variability of stems and twigs in recent and subfossil woods from Central Europe*, Swiss Federal Institute for Forest, Snow and Landscape Research, 3rd ed., Birmensdorf.
- Silva, B & Phillips, E 2015 (ed.) *UK Top Quaternary Sites: a compilation to celebrate the QRA’s semi-centennial year*, Quaternary Research Association, London.
- Smith, N 1999 The earthwork remains of enclosure in the New Forest, *Proc Hampshire Fld Club Archaeol Soc* 54 1–56.
- Soilscapes website <http://www.landis.org.uk/soilscapes/>.
- Stace, C 2010 *Flora of the British Isles*, Cambridge.
- Stewart, D A 2008 Hod Hill: “Too much wasted by cultivation for definite survey”, *Proc Dorset Natur Hist Archaeol Soc* 129 97–103.
- Tubbs, C R 2001 *The New Forest. History, Ecology and Conservation*, New Forest Ninth Centenary Trust, 2nd ed., Lyndhurst.

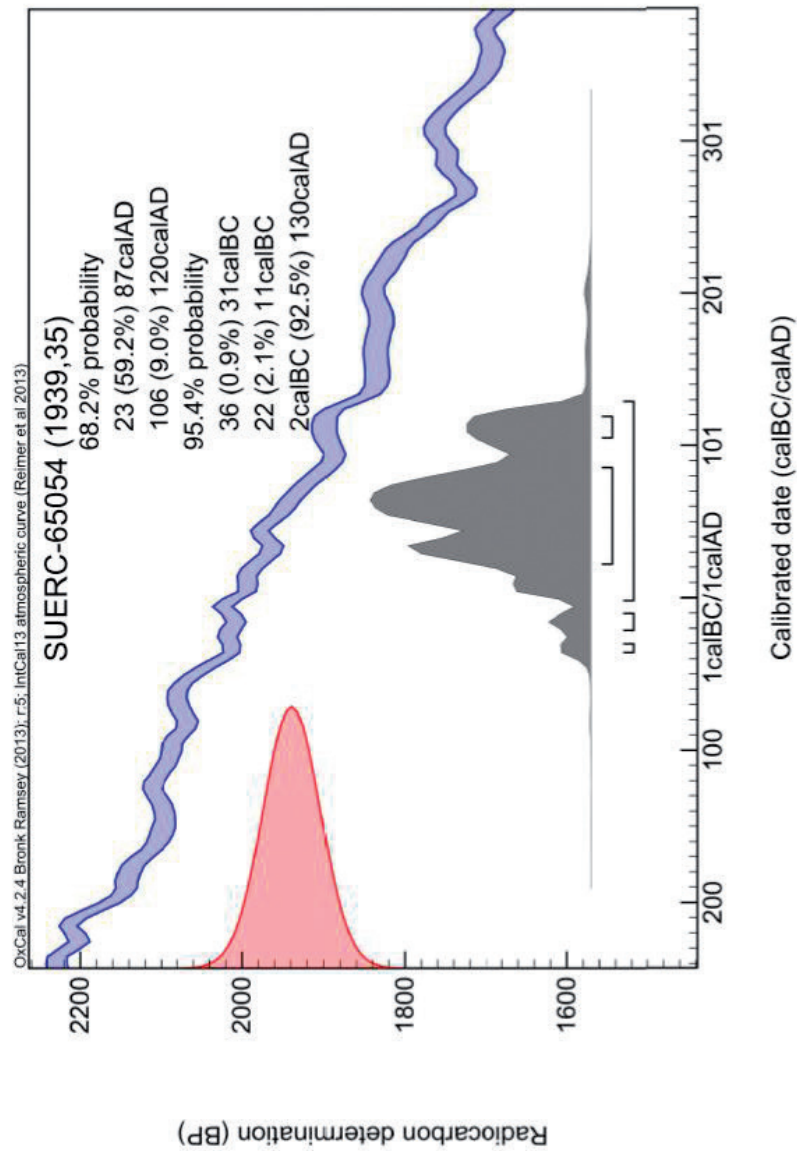
Author: Prof. A C King, FSA FRAI, Department of Archaeology, University of Winchester, Winchester, Hampshire, SO22 4NR. Email: tony.king@winchester.ac.uk

© Hampshire Field Club and Archaeological Society

The additional material (AM) can be found on the journal’s website: <http://www.ingentaconnect.com/content/hfcas/hs>.



AM 1 Calibration graph for radiocarbon sample SUERC-65053



AM 2 Calibration graph for radiocarbon sample SUERC-65054

AM 3 Samples and their associated contextual information

<i>Phase</i>	<i>Sample</i>	<i>Notes</i>	<i>Context description</i>
2b	2 (a)		Sandy charcoal-rich black fill in the hollow formed by pit [16] of the pit-and-mound feature
	2 (b)		Sandy charcoal-rich black fill in the hollow formed by pit [16] of the pit-and-mound feature
	5 (a)	Larger bag	Sandy charcoal-rich black fill (as 2) in gully [22] on the upslope exterior of [4] [<i>ridge forming the southern perimeter of the platform</i>]
	5 (b)	Smaller bag	Sandy charcoal-rich black fill (as 2) in gully [22] on the upslope exterior of [4] [<i>ridge forming the southern perimeter of the platform</i>]
	6*		Sandy charcoal-rich black fill (as 2) covering platform area in the north sector of the trench
	9 (a)		Dark charcoal-rich fill of [8] [<i>curved gully inside ridge, inner perimeter of platform</i>]
	9 (b)	With small bag inside containing an individual fragment	Dark charcoal-rich fill of [8] [<i>curved gully inside ridge, inner perimeter of platform</i>]
	11		Grey/black sandy fill of [10] [<i>possible posthole</i>]
	14		Dark charcoal-rich fill of [13] [<i>possible posthole</i>]
	17C	Small bag, labelled 17C	Grey/black charcoal rich dump of sandy fill over [7] [<i>mound of the pit-and-mound feature</i>]

* indicates the sample which was radiocarbon dated to 1939 ± 35 BP (SUERC-65054). Labels (a) and (b) were allocated here to distinguish between multiple samples from the same context.

AM 4 Summary, by context, of the additional characteristics recorded for the fragments examined in detail from each sample (up to 10 fragments)

<i>Context</i>	<i>No. of fragments</i>	<i>Characteristics</i>			<i>Working</i>	<i>Radial cracks</i>	<i>Vitrification</i>	<i>Decayed wood</i>
		<i>Ring count (maximum)</i>	<i>Average ring width (mm)</i>	<i>Maturity</i>				
2	16	c50	0.4 – 3.9	Mature; hw, sw, hw/sw boundary	✓	✓	I, II, III	✓
5	16	c20	0.4 – 6.4	Mature; hw, sw	✓	✓	I, II, III	✓
6	7	c50	0.5 – 4.1	Mature; hw, sw, indet., hw/sw boundary		✓	II, III	
9	20	c44	0.5 – 4.6	Mature, Branch; hw, sw, hw/sw boundary	✓	✓	I, II, III	✓
11	10	c30	0.5 – 1.8	Mature; sapwood, indet.		✓	II, III	✓
14	2	12	0.8 – 1.0	Mature; heartwood	✓	✓	I, II, III	
17	6	>51	0.3 – 0.8	Mature; heartwood, sapwood	✓	✓	II, III	

✓ = indicates presence recorded. The interpretation of heartwood/sapwood is based on the presence/absence of tyloses (although note that they can also occur in damaged wood). The 'Maturity' column is based on the ring curvature data and the presence/absence of tyloses – those listed within the category have been securely recorded within each context. hw = heartwood and sw = sapwood.