

Burnt Mounds of the New Forest

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Introduction

Heaps of fire-cracked stones have long been studied in the British Isles. The first to attract attention were the Irish examples, known as *'fulachta fiadh'*, but subsequent discoveries have shown that burnt stone accumulations have a wide, if patchy, distribution throughout the British Isles. Examples are now known in Scotland, south-west and north Wales, and in various parts of England including: Northumberland, Durham, Cumbria, North Yorkshire, Shropshire, East Anglia, the Midlands, Essex, London, West Sussex, Buckinghamshire, Berkshire, Lincolnshire, north Dorset, and the New Forest, Hampshire.

It is generally accepted that such sites were used to heat water. Excavation has shown that classic kidney- or crescent- shaped mounds of burnt stone have troughs between the open arms and more amorphous mounds often sit eccentric to troughs. Stones appear to have been heated and cast into the trough to boil water. Only immersion of hot stones into cold water, rather than just heating, would produce the stress fractures which are a feature of the stone debris found at these sites. After use, cold flints from the trough were discarded around the sides leaving a space for water flow and access.

A number of radiocarbon dates for burnt mounds in the British Isles points to a date range of between 1600-1000BC for most (Ehrenberg 1991). They were once accepted as cooking places on the basis of experimentation and accounts in early Irish literature. The lack of cooking vessels and food remains, in the form of pottery and animal bones, at many excavated sites was explained by acidic soil conditions or by butchery and consumption elsewhere. More recent theories that some burnt mound sites were saunas or sweathouses (eg. Barfield 1991) may also explain the absence of these remains. The function of the sites is thus not fully understood, but they do not seem to have been directly associated with settlement and are not the result of normal domestic activity.

Through his archaeological fieldwork for the Ordnance Survey Keith Blood played an important part in extending our knowledge of burnt mounds. In the Sutherland and Caithness regions of Scotland his team recorded a total of 146 where only 5 were previously known, and Keith's

personal interest in these sites resulted in his publication of an illustrated account of their form, typology, and probable use (Blood 1989). After joining the Royal Commission on the Historical Monuments of England (RCHME) in 1983 Keith continued to add further examples of burnt mounds to the national distribution maps by his surveys of previously unrecorded examples in Northumberland and North Yorkshire.

This paper describes burnt mound sites in the New Forest, known largely from the pioneering work of the New Forest Section of the Hampshire Field Club. Recent fieldwork in the area by the RCHME has also contributed to the knowledge of these sites and enabled further observations to be made here about their distribution, form, and purpose.

Previous archaeological work

The occurrence of burnt flint accumulations near water supplies in the north of the New Forest was first noted during archaeological fieldwork by the New Forest Section of the Hampshire Field Club in about 1959. Towards the end of 1969 a definite pattern to their siting began to emerge and attention was focussed on the heads of valleys, around springs, and at points where hard tongues of land meet the edge of bogs. By 1967 26 burnt flint mounds, spreads of burnt flint, or clusters of these, had been recorded by the Section (Pasmore and Pallister 1967). In 1967 they excavated one of the sites, a fine kidney-shaped burnt mound at Deadman Bottom (SU 21 NW 13; SU 2070 1720). The mound (Fig. 2a) is located at the edge of a bog by a permanent supply of spring water. Its main body was found to be composed almost entirely of calcined flints, with a layer of charcoal near the subsoil which tended to die away towards the centre. Beneath this was a 2" (5.08cm) thick layer of gravel, below which was a further 1/2" (1.27cm) thick layer of charcoal on natural soil. A sub-rectangular trough cut 22" (55.88cm) deep into soil lay beneath the indentation in the mound and the natural soil was burnt red in a crescent shape around it. The final fill of the trough consisted of material similar to that of the mound. Beneath this were calcined flints in yellow clay with the top layer stained red, while a band of calcined flints in blue waterlogged clay

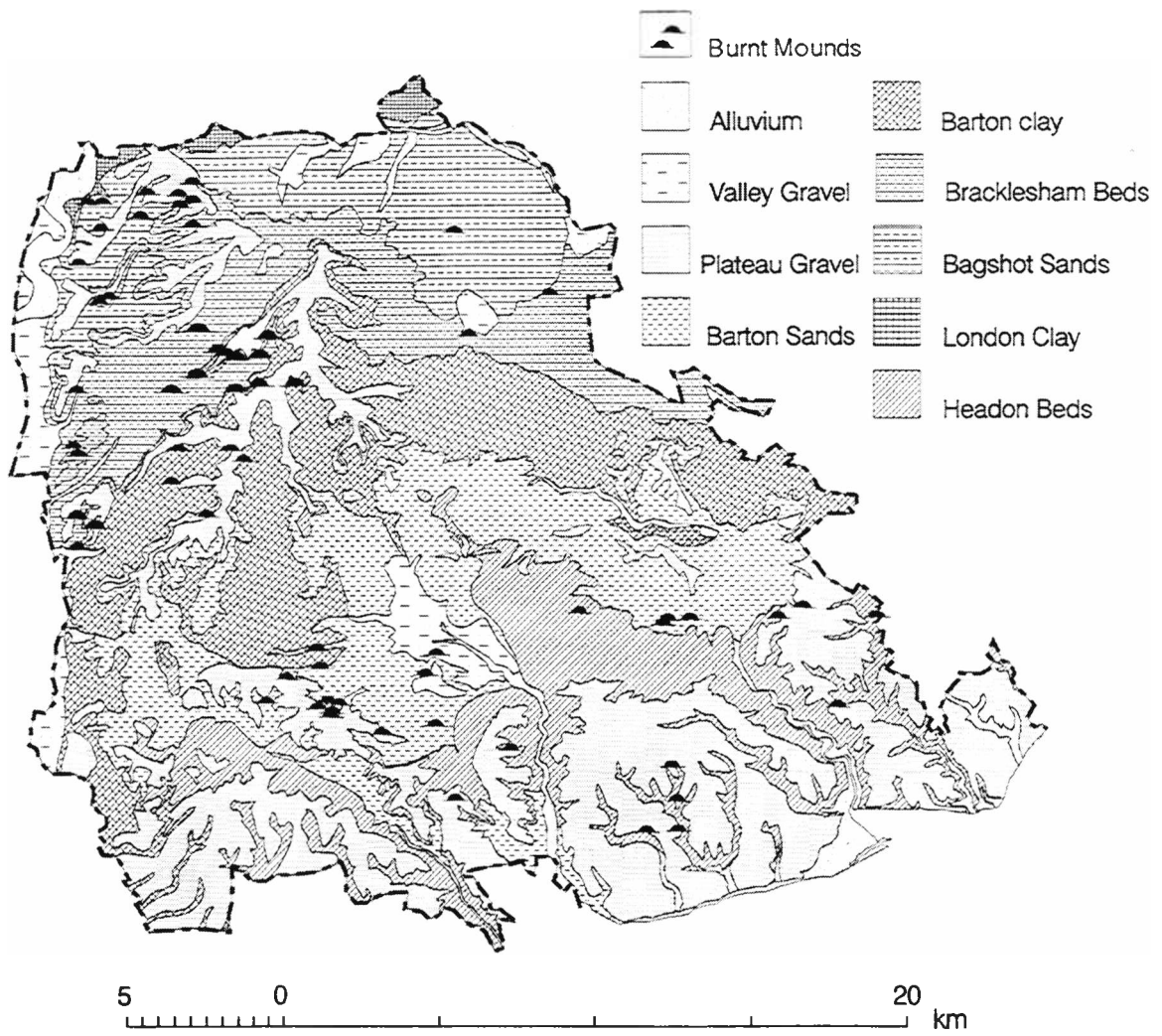


Fig. 1. Distribution plan of New Forest burnt flint sites in relation to geology.

merged into the natural soil beneath. The trough fill also contained three blocks of unshaped sandstone of a type found in surrounding hills, which seemed to have fallen in on abandonment. No lining was visible, but water constantly filled the trough by seepage. Flint flakes and cores, none dateable, were found throughout the mound, with a greater concentration around the head of the trough. Only one showed any sign of firing despite the fact that almost the entire mound material had been burnt. A few pottery fragments recovered, mainly from the trough, had been decayed by the acidic soil conditions, but one was nevertheless assignable to the late Bronze Age by its fabric. The only structural feature was a possible post hole. In 1972 a further burnt mound (SU 21 SE 2), exposed as a dark band in the bank of the Cadnam River, was excavated. This was found to form a kidney-shaped mound which had been eroded by the river (Betts 1974). By 1984 continuing fieldwork by the New Forest Section resulted in the depiction of 13 mounds, 59 'troughs', and 12 'groups of sites' on a distribution map (Pasmore 1984). Further work by the New Forest Section and recent work by the RCHME has increased the number of sites now recorded by the National Monuments Record (NMR) to 52 mounds or groups of mounds and 71 burnt flint accumulations.

Despite this concentration of burnt flint sites in the New Forest, very few are known elsewhere in Hampshire. In 1979-86 fieldwork revealed a number of burnt mounds and concentrations of burnt flint in the middle Avon Valley just to the west of the New Forest (Light *et al.* 1995). In 1984-5 one of these mounds, at North End Farm, Harbridge, was excavated and produced sherds of Deverel-Rimbury pottery, confirming the standard middle Bronze Age date for the sites and concurring with radiocarbon dates from elsewhere (Buckley 1990; Hodder and Barfield 1991). The NMR records only 2 further burnt flint sites in other areas of Hampshire. At Bursledon burnt flint was found in association with possible Iron Age pottery (SU 41 SE 22; SU 4867 1078), and at Zionshill Farm in the Test Valley burnt flint was found in association with artefacts spanning the Neolithic to medieval periods (SU 42 SW 37; SU 4185 2000). Limited fieldwork by Pasmore in west Dorset, in likely locations on comparable geology to that of the New Forest, has drawn a similar blank, indicating that burnt mounds were not present there (Pasmore 1984).

Nature of the remains

The stone used in New Forest burnt mounds is flint, which is widely available locally in the extensive Plateau and River Gravel deposits. The burnt, or calcined, flint appears as a light grey-blue ashen colour and is fire-crazed or heat-shattered into tiny angular fragments. It is often visible on the surface, or within eroded areas, of mounds. It may also appear in accumulations beside streams, in stream banks, or in drainage cuttings, with no mound. Approximately half of the burnt flint sites discovered in the New Forest fall into the latter category. Eroded sites are often devoid of vegetation cover. Burnt mounds, by their dry and stony nature, sometimes carry sparse or stunted vegetation in

comparison to the surrounding area which is often water-logged. Some New Forest examples also carry bracken which does not appear in the surrounding area. Mounds vary in shape from classic kidney- or crescent- shaped (Fig. 2a,g), double summit types (Fig. 2f), horseshoe- or circular-shaped (Fig. 2d), oval- or irregular-shaped (Fig. 2b,c,i). Flint spreads without mounds may represent decayed mounds or sites where insufficient flint ever accumulated to form a mound; New Forest distributions give no clues as to which is the case. Mounds and flint spreads are found side by side and the open nature of the landscape means that individual examples may be more prone to erosion than others simply by random trampling by people or animals, or by local changes in waterflow and drainage schemes. The size of extant mounds is fairly uniform. The largest (SU 21 NW 22, Fig. 2d) lies at Hale Purlieu. It is a horseshoe-shaped mound, forming almost a complete circle, standing 1m high. Smaller examples are the crescentic mound at Deadman Bottom (Fig. 2a) and the oval mound at Eyeworth Walk (Fig. 2h), both standing about 1.2m high. Experiments by O'Kelly and others suggested that roughly 0.5 cubic metres of debris is generated by a single boiling (Russell-White 1990). If this is the case, mounds could have accumulated fairly rapidly and some of the New Forest sites may result from only a few episodes of boiling. A further feature noted at New Forest examples is the presence of gullies which connect a number of burnt mound indentations with adjacent watercourses (Fig. 2b,c). Gullies leading from troughs have been noted at other burnt mound sites in Ireland and the Isle of Man and it has been suggested (Hedges 1974-5, 63) that they were to empty troughs after use. Some New Forest burnt mounds (Fig. 2e,h,i) are situated immediately below springs which seem to have fed them and then drained into adjacent bog. At two New Forest sites linear earthwork banks of uncertain date or purpose lie adjacent to burnt mounds. At the first of these, (Fig. 2f), a denuded earthen bank skirts a bog edge for 200m and terminates at the burnt mound, while at the second, (Fig. 2h), an earthen bank runs 12m to the south of a burnt mound.

Burnt flint has been found in a variety of different contexts in the New Forest. It has been reported on a settlement site at Rockford (SU 10 NE 26; SU 1697 0825), where it lay with pits and two ploughed out round barrows just to the south of a Bronze Age settlement. Other accumulations have been found with Mesolithic artefacts (SU 30 NW 29, 32; SU 30 SE 2) but since these are surface scatters any apparent association may be purely fortuitous. The vast majority of New Forest examples appear as isolated sites. Although excavation has been limited to the two small-scale excavations noted above, in the adjacent middle Avon Valley, where fieldwalking enabled a wider area to be investigated, similar sites were indeed shown to have been isolated (Light *et al.* 1995).

New Forest burnt mounds, like examples elsewhere in the British Isles, are invariably located in the vicinity of reliable natural water supplies. They cluster at the heads of river systems draining plateaux, most lying between 50m and 100m OD, on streams away from valley floodplains and avoiding the low-lying coastal zone. The apparent absence of burnt mounds from the New Forest coastal zone may be

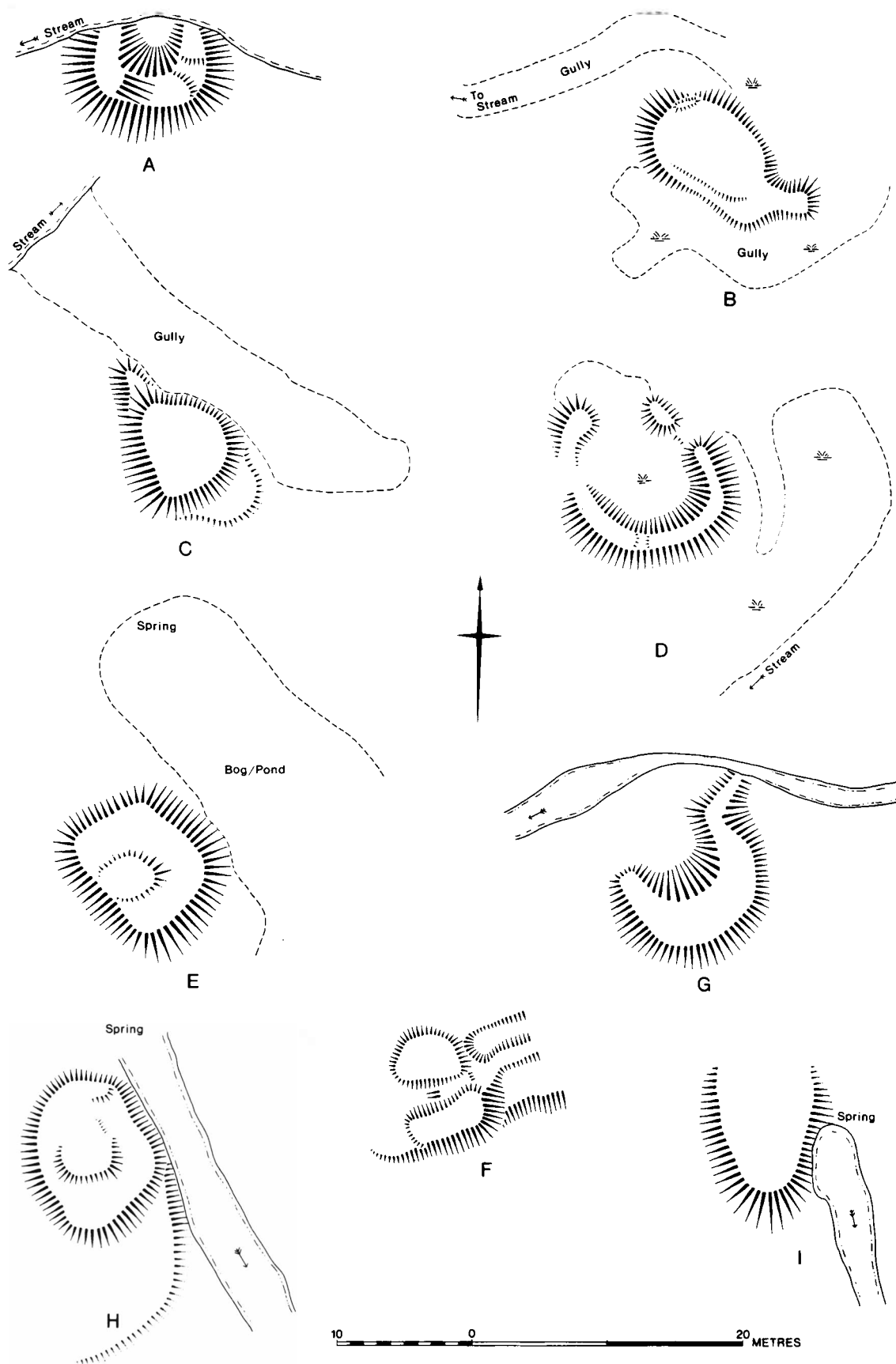


Fig. 2. Hachured plans of New Forest burnt mound sites: a, Deadman Bottom; b, Ober Water II; c, Ober Water I; d, Hale Purlieu II; e, Milkham Inclosure; f, Five Thorns Hill; g, Hale Purlieu I; h, Eyeworth Walk; i, Shepton Water.

because less fieldwork has been carried out in this largely enclosed landscape, or because its long use for agricultural land has destroyed remains. The *fulachta fiadh* of Co. Cork are, however, similarly concentrated avoiding river valleys and cluster along streams draining sandstone ridges (Power 1990), while burnt flint sites of the Avon Valley are also concentrated on river terraces by small streams rather than in the valley bottom.

A distribution map of known New Forest burnt flint sites (Fig. 1) shows that their location is not entirely related to the underlying geology. Although they are found largely on the poorer soils derived from the Bracklesham Beds, Barton Clays, Barton Sands, and Plateau Gravels, they tend to be concentrated within certain areas of these rocks rather than having an even distribution across them. They are, however, notably absent from the Headon Beds from which the area's richest soils derive. A similar tendency for burnt mounds to be sited on poor or marginal land has been noted in some other areas of the British Isles. In south-west Wales classic isolated burnt mounds occur on marginal land with acidic soils (Williams 1990), while in Staffordshire most lie in or around Cannock Chase which has poorer soil than adjacent areas (Welch 1991).

The reasons for the apparent association between many burnt stone sites and marginal land are not altogether clear. It may be argued that the distributions are a reflection of later landuse and that examples survive in marginal areas because they have not been destroyed by later activity. It may equally be argued that the distribution coincides with areas where fieldwork has been carried out, or geological determinants such as availability of suitable stone dictate their presence or absence. While these explanations obviously have some validity they do not explain the tendency satisfactorily. There are still marginal areas, for example Dartmoor, which are rich in surviving monuments, have been the subject of much fieldwork, and yield suitable stone, yet no burnt mounds are recorded. The limited number of burnt stone scatters discovered in arable is also notable. These should survive if burnt mounds were present.

In some other parts of the British Isles a different pattern has been found. *Fulachta fiadh* in Co. Kilkenny, for example, cluster on rich limestone lands, although one group lies in an area devoid of other monuments and unsuitable for tillage (Condit 1990). On Fair Isle and Sanday burnt mound distribution encompasses both marginal and pasture zones, and they are seen as indicators of early settlement locations (Hunter and Dockrill 1990). Others have been found in close association with house sites, stone circles, and multiple cist cairns in the Araglin Valley, Co Waterford (Buckley 1991), or in close association with hut circles and cultivated ground in major river valleys of Caithness and Sutherland (Blood 1989).

Discussion

The location of New Forest burnt flint sites next to water supplies, the presence of troughs, and of stress-fractured flint, shows that the New Forest examples, like similar sites elsewhere, were used for heating water. Acid soils of the

area would have destroyed pottery and bone remains at the sites, which could have been used for cooking, although they could equally have been used as sweatbaths or saunas. If used for cooking, they are unlikely to have been associated with permanent settlements. Continuous boiling episodes would have created far larger accumulations of flint than that at most New Forest sites, no indications of permanent settlement have yet been found, despite the favourable conditions at many for preservation of organic materials, and the lack of field systems or later land divisions, point to non-intensive use of the area during the Bronze Age, as in subsequent periods.

The presence of burnt mounds and flint sites in the New Forest and their absence from most surrounding areas indicates that the New Forest was the subject of a different form of landuse to the surrounding areas during the Bronze Age. The earliest archaeological earthwork remains known in the New Forest are round barrows, mostly of early-middle Bronze Age date. The distribution pattern of these throughout the Forest (Fig. 3) is broadly similar to that of the burnt flint sites, although none have been found in direct association with each other. New Forest barrows similarly cluster at the heads of river systems, on the poorer soils now supporting heathland vegetation. Palaeoenvironmental studies of the area (Reynolds and Catt 1987) have traced the present patchy vegetation of deciduous woodland interspersed with open grassland and heathland back to at least 1500BC, with a general transition from woodland to heathland beginning earliest on the base poor soils. This, combined with studies of vegetation beneath barrows, suggests that the burnt mound sites occupied an open environment. Although Bronze Age metalwork finds are known from the New Forest these have been discovered in valley or coastal situations and their distribution (Fig. 3) bears no apparent relationship to that of the burnt mounds.

Despite the presence of numerous round barrows and burnt mounds in the New Forest, no contemporary settlements or definite field systems are known. If settlements existed their remains have not yet been discovered. The boggy situation of many New Forest burnt mound sites seems unsuitable for settlement now, but sea level rises during and after the Bronze Age may have inundated what were once possibly drier streamside locations. A 5m rise in sea levels is known to have occurred in the area since the Neolithic period, slowing to about 0.5m since the Iron Age (Cox and Hearne 1991), and local factors such as the damming of the Beaulieu River may also have caused sites at its head to have become increasingly waterlogged.

The fact that burnt flint sites cluster on the least fertile areas of the Forest may suggest use of the area for hunting and possibly transhumance. The middle Avon Valley burnt flint sites have been interpreted as temporary camps associated with seasonal movement of flocks and herds through the landscape. The troughs were perceived as an alternative method to cooking in pots, which would have been unsuitable for a mobile existence, thus explaining the absence of pottery. The mounds would grow in the course of successive, possibly short, visits and every so often particular troughs would be abandoned and new ones

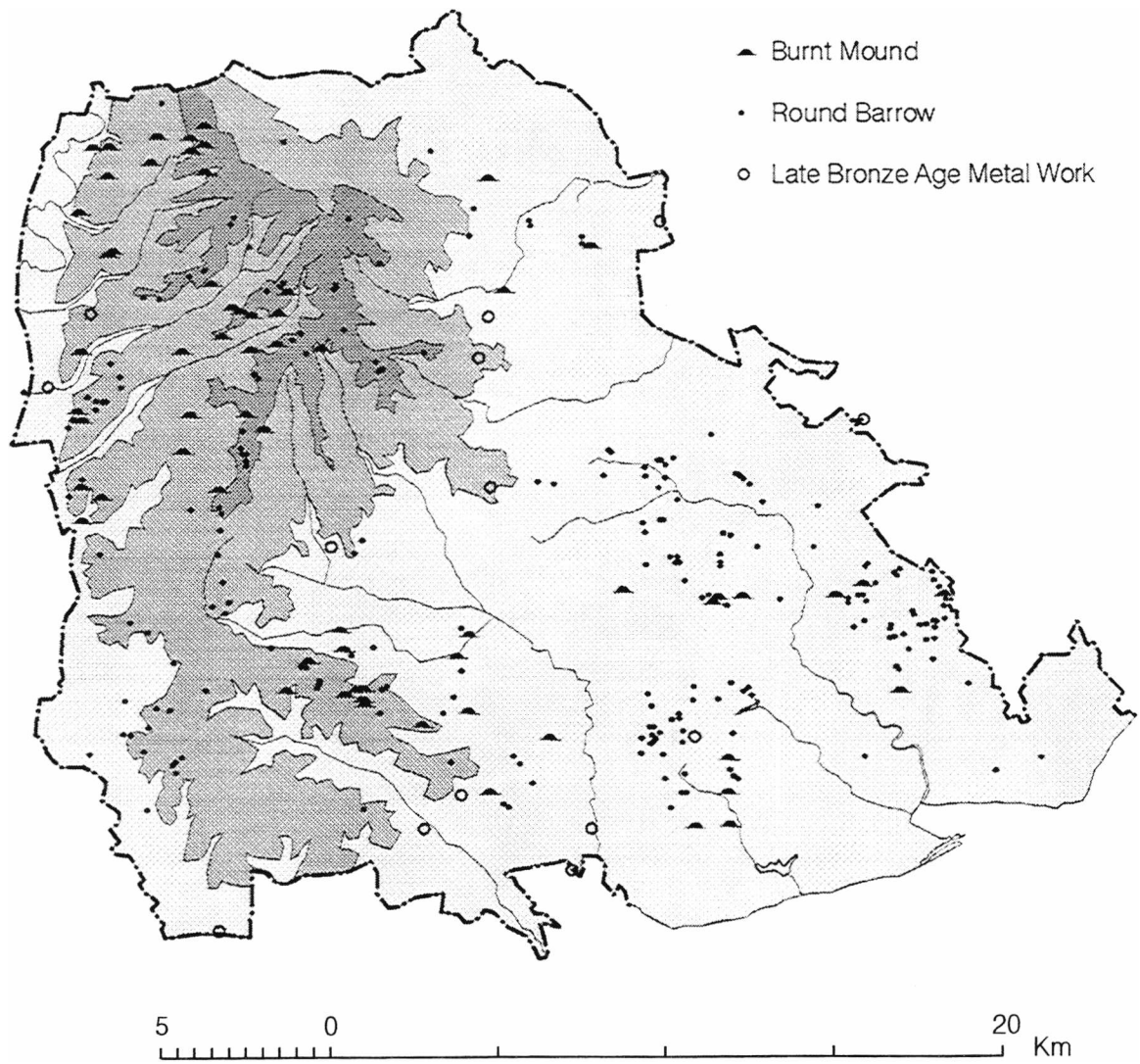


Fig. 3. Distribution plan of New Forest burnt flint sites in relation to round barrows, Late Bronze Age metalwork, contours, and rivers.

constructed nearby as the focus for new camps. Given the low proportion of wild animals in Bronze Age faunal assemblages and the wide prevalence of burnt mounds in the landscape, the idea that they were connected with hunting was not considered to be convincing (Light *et al.* 1995).

Different explanations can be put forward, however. The difference in landuse of the New Forest may result from a cultural difference between communities of this and adjacent areas. Alternatively the New Forest may have been used by Bronze Age communities just for burial, and possibly for ritual activity, with settlement located elsewhere, perhaps in adjacent river valleys or along the coast. The distribution of burnt mounds in broadly similar locations to round barrows shows that the same areas were being used for burial as the activities centred upon these sites.

The reason for the eventual abandonment of the sites is uncertain. In the middle Avon Valley the reasons postulated for eventual abandonment were improvement in pottery technology and gradual re-organization of the landscape on a more territorial basis restricting earlier mobility. However, even with improved technology, pottery would still be heavy to transport and easily broken. In the New Forest there is also no evidence to suggest that the landscape was ever re-organized on a more territorial basis in the late Bronze Age or that mobility across the landscape was restricted during this period.

Methodology

The plans in Fig. 2 are divorced surveys carried out using Prismatic Compass and taped offsets. The numbers in brackets throughout the text are the National Monuments Record numbers for sites mentioned.

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References

- BARFIELD, L.H. 1991. Hot Stones: Hot Food or Hot Baths. In M. A. Hodder & L. H. Barfield (eds.), 59-68.
- BETTS, U.V.G. 1974. Excavations 1972-1974. Cadnam, site A. *Hampshire Field Club & Archaeological Society New Forest Section Report* 13, 8.
- BLOOD, K. 1989. Burnt Mounds in Sutherland and Caithness. In M. Bowden, D. Mackay, & P. Topping (eds.) - *From Cornwall to Caithness*, British Archaeological Report 209, 137-144.
- BUCKLEY, V. 1990. *Burnt Offerings: International Contributions to Burnt Mound Archaeology* Dublin. Wordwell.
- BUCKLEY, V.M. (ed.) 1991. Irish Fulachta Fiadh: An Overview. In M. A. Hodder & L. H. Barfield (eds.), 3-9.
- CONDIT, T. 1990. Preliminary Observations on the Distribution of Fulachta Fiadh in County Kilkenny. In V. Buckley (ed.), 18-23.
- COX, P.W. & HEARNE, C.M. 1991. *Redeemed from the Heath. The Archaeology of the Wytch Farm Oilfield 1987-90*, Dorset Natural History & Archaeological Society Monograph 9.
- EHRENBERG, M. 1991. Some Aspects of the Distribution of Burnt Mounds. In M.A. Hodder & L.H. Barfield (eds.) 1991, 41-58.
- HEDGES, J. 1974-5. Excavation of two Orcadian Burnt Mounds at Liddle and Beauquoy. *Proceedings of the Society of Antiquaries of Scotland* 106, 39-98
- HODDER, M.A. & BARFIELD, L.H. (eds.) 1991. *Burnt Mounds and Hot Stone Technology* Sandwell. Sandwell Metropolitan Borough Council.
- HUNTER, J.R. & DOCKRILL S.J. 1990. Recent Research into Burnt Mounds on Fair Isle, Shetland, and Sanday, Orkney. In V. Buckley (ed.), 62-68.
- LIGHT, A., SCHOFIELD, A.J., & SHENNAN, S.J. 1995. The Middle Avon Valley Survey: A Study in Settlement History. *Proceedings of the Hampshire Field Club & Archaeological Society* 50, 43-101.
- PASMORE, A.H. & PALLISTER, J. 1967. Boiling Mounds of the New Forest. *Proceedings of the Hampshire Field Club & Archaeological Society* 24, 14-19.
- PASMORE, A. 1984. Boiling Trough Sites in the New Forest Area. *Hampshire Field Club New Forest Section Report* 22, 6-7.
- POWER, D. 1990. Fulachta Fiadh in County Cork. In V. Buckley (ed.), 13-17.
- REYNOLDS, K.S. & CATT, J.A. 1987. Soils and Vegetation History of Abandoned Enclosures in the New Forest. *Journal of Archaeological Science* 14, 507-527.
- RUSSELL-WHITE, C.J. 1990. Scottish Contributions. Synthesis. In V. Buckley (ed.), 87-91.
- WELCH, C.M. 1991. Burnt Mounds in Staffordshire. In M. A. Hodder & L. H. Barfield (eds.), 27-30.
- WILLIAMS, G. 1990. Burnt Mounds in South-West Wales. In V. Buckley (ed.) 1990, 129-140.