

Cissbury Ring

A SURVEY BY THE ROYAL COMMISSION ON THE HISTORICAL MONUMENTS OF ENGLAND

by J. D. Donachie & D. J. Field

A recent earthwork survey of Cissbury Ring by the Royal Commission on the Historical Monuments of England (RCHME) is the first analytical examination of the site since the pioneering work of Herbert and Christine Toms in 1926. This paper describes the results of the RCHME survey which, building on the work of the Toms, has produced the first detailed plan of the extensive Neolithic flint mining complex set within the context of the hillfort. A number of important points of detail were recorded concerning the morphology and organization of space within the flint mining area and its stratigraphic relationship to the hillfort. New information concerning the earthworks within the interior of the hillfort has also been recorded.

INTRODUCTION

A survey of Cissbury Ring hillfort and flint mines was undertaken by the RCHME in the Autumn of 1993 in response to a request by the National Trust, the owners of the site. The site, centred on TQ 13950805, occupies a prominent flat-topped promontory which rises to 183 m OD, on the edge of the South Downs, some 3 km north of Worthing. The main components comprise a large univallate hillfort with counterscarp bank, enclosing some 24 ha which contain evidence of occupation and cultivation extending into the Romano-British period. Most of the western half of the hillfort interior is occupied by the remains of shafts and spoilheaps from earlier, Neolithic flint mines.

The site dominates the surrounding downland, commanding extensive views south and eastwards across the coastal plain as far as Beachy Head, westwards to the Isle of Wight and northwards and eastwards across the undulating chalk escarpments towards the Weald. The underlying geology is Cretaceous Sussex White Chalk overlain by a Clay-with-Flints capping, which covers most of the site. Present land use is restricted to permanent grassland and rough grazing with hawthorn scrub occupying the area of the flint mines.

HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

The first known depiction of Cissbury appears on Budgen's Map of 1724 (West Sussex Record Office (hereafter WSRO), PM 249) showing the hillfort ramparts only. The 17th-century historian, John Aubrey, had previously mentioned the site only briefly in connection with a beacon, although he gave no details as to its position (Aubrey undated, 332). In 1802 the site was surveyed by T. W. Huggins who depicted the fort in simplified form, showing only the defences and some interior earthworks, although he did try and depict some of the larger flint mine hollows (Huggins 1802). Huggins' map also shows a road from Steyning to Broadwater running from the southern entrance of the hillfort, across the interior and exiting via the break in the rampart to the north. Huggins returned in 1815 and surveyed two profiles across the fort from north to south and north-west to south-east, but added nothing further to his plan of the interior (WSRO Add MS 18, 429).

During the Napoleonic Wars Cissbury appears to have been one of a number of advanced infantry posts deployed on the south coast (Victoria County History 1905, 533). The Broadwater Tithe Map of 1848 shows the hillfort under pasture, with the

defences to the north and south-west forming the parish boundary between Findon and Broadwater (WSRO, Add MS 24, 653). The Tithe Map also shows under pasture the triangular area of land containing flint mines which extends beyond the defences to the south and is depicted as 'No Mans Land'.

The hillfort also seems to have been utilised during the 1939–45 war for the positioning of anti-aircraft guns, as a memo regarding war damage from Worthing Museum archives makes reference to '*several gun pits on top of the camp*', including one '*sunk through the floor of a Romano-British enclosure on the N side of the camp*' (Worthing Museum Records, memo from K. J. Barton). This evidence is substantiated by an aerial photograph from 1946 which clearly shows several circular structures constructed in chalk, clustered below the crest of the hill on the north side (RCHME VAP 1946, 3081). The remains of at least three of these still survive as sharply-defined circular banks (Fig. 1, n).

The history of archaeological research at Cissbury began with investigations which took place during the latter half of the 19th century. A number of the larger hollows were investigated in 1856 by G. V. Irving, who interpreted them as reservoirs (Irving 1857). In 1867–8, General Pitt Rivers (then Colonel A. Lane Fox) undertook his first major excavation at the site which was primarily aimed at determining the chronological sequence of the fort and the hollows (Lane Fox 1876, 378–9). He excavated approximately 30 hollows to a depth of about 1 m, concluding that they were used for procuring flint, and suggested that they were earlier than the fort. Unfortunately no records survive of these explorations and it is now impossible to determine either from surface or documentary evidence which shafts were excavated. Pitt Rivers also recorded and excavated three enclosures in the interior (Lane Fox 1869a, 62–4) and he appears to have been the first to draw attention to scoop-like excavations inside the eastern entrance (Lane Fox 1869, 32, fig. 14).

In 1870 Canon Greenwell excavated at Grimes Graves in East Anglia and demonstrated that depressions similar to those at Cissbury were in fact mineshafts. This prompted Pitt Rivers and others to return to Cissbury to carry out further research. In 1873 Plumpton Tindall excavated below the hard, compacted chalk fill of a shaft which Pitt Rivers had mistaken for the bottom in 1867–8 and found that

the hollow was indeed the top of a filled-in mineshaft. The death of Tindall prevented publication of this discovery, although his colleague, E. H. Willett, excavated another shaft in 1874 (Willett 1875) and found that it had up to eight radiating galleries.

By 1875 Pitt Rivers had discovered that the hillfort ditch cut through a mineshaft with galleries running under the Iron Age rampart and further excavations were directed on shafts both inside and outside the ramparts (Lane Fox 1876). Pitt Rivers' colleague, Park Harrison, excavated further shafts in the years 1876–7 to add to the body of evidence (Park Harrison 1877; 1878). No further work was carried out at Cissbury until the early years of this century when Hadrian Allcroft produced a plan of the hillfort ramparts (Allcroft undated). However, it was not until 1926 that the first detailed archaeological survey of the surface remains was published jointly by Herbert and Christine Toms. The survey showed how much information Pitt Rivers had overlooked, despite the fact that he had worked at the site on two separate occasions. The Toms linked their surface observations to the stratigraphic sequence recorded by Pitt Rivers. This suggested three main phases for the hillfort, including a post-Roman refortification of the site which was later confirmed by excavation (Curwen & Ross Williamson 1931).

The excavation evidence indicated an original univallate rampart and ditch of middle Iron Age date. By the late Iron Age most of the interior was being cultivated with the result that plough-soil was building up against the inner edge of the rampart; late Iron Age pottery was found in the lower section of the accumulated material, with Roman potsherds higher in the profile (Curwen & Ross Williamson 1931, 23 & pl. 4, section B). The excavation evidence also confirmed the Toms' observations that the rampart was heightened and the ditch widened adjacent to the entrances after this agricultural phase, probably at some late Roman or post-Roman date (Curwen & Ross Williamson 1931, 33).

Interest in the site then waned for nearly 20 years until the 1950s when J. Pull and the Worthing Archaeological Society excavated two mineshafts on a spur to the south of the hillfort rampart. They also excavated one of the mounds surrounding the shafts which proved to be a manufacturing work-floor comprising a solid mass of struck flint flakes (Pull, undated).

DESCRIPTION OF EARTHWORKS

The letters in brackets refer to the letters on the plan (Fig. 1).

FLINT MINES

The earliest features recorded are those of the extensive complex of Neolithic flint mines that lie both inside and outside the hillfort on the western slopes of the hill. These appear as a series of hollows, ranging from 3 m to 36 m in diameter, the best preserved examples lying on the north-western slopes of the hill within the hillfort rampart. The shafts clearly underlie the hillfort defences, extending some 220 m to the south and 30 m to the west of the ramparts. At certain points the slight counterscarp bank of the hillfort overlies former mineshafts and spoil dumps derived from this activity are visible beside the bank. Around the lip of many of the shafts lie a series of mounds, some reaching to over 3 m in height. These have almost certainly been formed from spoil extracted from the shafts. A number of smaller mounds, up to 0.5 m in height, are likely to be former chipping floors, and a series of shallow hollows in them, for example (a), could point to the position of shafthead working areas. However, to understand these features more fully, further excavation and research will need to take place. An eroding area adjacent to one shaft (b) was recorded by the RCHME during the survey and consisted of a concentration of struck flint flakes of various sizes ranging from large cores to minute spalls.

A number of the spoil heaps within the hillfort appear to be arranged in a linear fashion, often following the contours. On the south side, for instance, a well-defined linear spoilheap (c), 85 m long and 0.8 m high, underlies and extends out from the counterscarp bank, while traces of similar underlying spoilheaps are also present outside the main rampart on the western side. Some of the mineshafts too appear to follow the contours, especially those on the north-west slopes. From this it seems reasonable to postulate that mining started on the north-western side of the hill, probably in the area now obscured by the hillfort ditch. Here the hillside is extremely steep and soilcreep, which would periodically expose the flint seam at the surface, has been considerable.

Owing to the effects of later cultivation, it is difficult to reconstruct the full extent of the mined area. However, shallow hollows, undoubtedly mineshafts reduced by ancient ploughing, can be

traced over much of the southern part of the hillfort. Excavations of two pits in the eastern part of the hillfort in 1930 recovered flint-knapping debris which indicated that activity related to the mines extended over a considerable area (Curwen & Ross Williamson 1931, 20). Further confusion over the full extent of mining is caused by the numerous Iron Age pits and Romano-British hut sites that cover the north-eastern part of the hillfort interior. Despite this later activity, the survey suggests that mining covered a minimum of 9 ha and consisted of at least 270 mineshafts.

THE HILLFORT

Defences

The roughly pear-shaped defensive circuit of the hillfort, the long axis of which is orientated north-east to south-west, comprises a closely set rampart and external ditch, supplemented by a small but well-defined counterscarp bank on the outer lip of the ditch. The rampart is clearly defined for most of its circuit and on the north, west and south-east where the hillside falls steeply, its inner face averages 1.3 m in height. On the gentler approaches from the south and east, the rampart increases in height, rising to 3.9 m above the interior. In the area of the flint mines the rampart is irregular and it is very likely that its course here was influenced by the presence of spoilheaps associated with the Neolithic mines. Elsewhere it is generally flat-topped, averaging 3 m to 4 m in width, with occasional rises and troughs perhaps representing a constructional feature.

The outer face of the rampart is extremely steep in places, especially on the west. Here it rises 8.6 m above the bottom of the ditch. For most of its circuit the rampart face is interrupted by a break in slope, which in places, becomes a narrow ledge averaging 1 m in width. Other slight breaks of slope are evident and these may well represent episodes of localised collapse of rampart material.

The surrounding ditch is flat-bottomed and narrow, with an average depth of 1.9 m. It generally measures up to 5 m in width, but is 9 m wide at the eastern and southern entrances. A number of undulations are clearly visible in the ditch bottom throughout its circuit. On the south-western side some of these scoops are well-pronounced, being up to 13 m wide and 0.7 m deep and appear to represent the sites of underlying flint mine shafts. Elsewhere, the depressions are smaller and probably represent quarry scoops dug to gain material for the

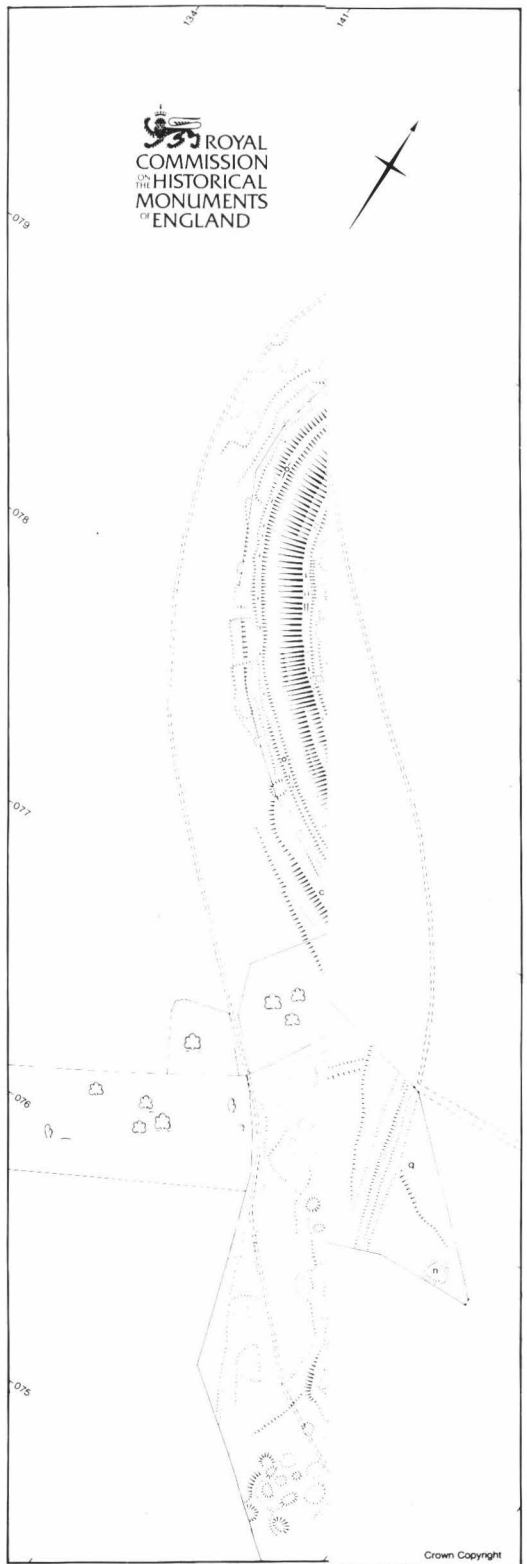


Fig. 1. Cissbury Ring and its immediate environs. Letters are referred to in the text.

rampart. A partially exposed concrete building foundation, 4 m by 4 m, located in the bottom of the ditch on the north-west is likely to have been associated with the 20th-century war-time activity that is known to have taken place on the hilltop.

The counterscarp bank survives up to 3 m wide and 1.5 m high. For most of its circuit it is a substantial bank, especially on the north and east, although on the western side of the hill it is badly mutilated. On the south-west the counterscarp bank mirrors the irregular nature of the rampart, due to the underlying flint mines.

Entrances

The main rampart is broken in four places, but only the gaps on the east and south represent original entrances. At both, the rampart terminals are considerably widened and raised, particularly so at the eastern entrance, thereby giving the impression of a slight inturn. Here there is a gap of 1.5 m between the two terminals, leaving only a narrow entrance that leads to a well-defined causeway across the outer ditch. At the southern entrance, the rampart ends are correspondingly thickened and rounded off and rise to a height of 2 m. Here, the inturn on the terminals is well-pronounced and a narrow gap 4 m wide is fronted by a well-defined causeway across the ditch. The ground between the rampart terminals at both entrances has been raised, which suggests that deliberate blocking has occurred at some time.

The counterscarp bank is absent in the vicinity of the entrances and it was suggested by the Toms that it formerly ran up to the entrance causeways, but had been entirely removed in order to refortify the main rampart at the entrances (Toms & Toms 1926, 63).

The interior

Much of the earthwork evidence for occupation and early land use in the interior of the hillfort has been considerably reduced, probably as a result of ploughing during or after World War Two. Most of the central and eastern portions are covered by the remains of a 'Celtic' field system consisting of a series of lynchets up to 2 m high, defining sub-rectangular plots 0.2 to 0.5 ha in extent. These are mostly orientated on an alignment parallel with the main axis of the hillfort, but also radially placed within the north-western end. Towards the west end of the interior the lynchets are much more irregular in appearance where the earlier industrial landscape

was in the process of being reclaimed for agricultural use. Shorter, less clearly defined lengths of lynchetting running between the plots on both the eastern and western sides of the hillfort interior may be the result of later ploughing. These are, in turn, masked by traces of medieval ridge-and-furrow.

A double-lyncheted track (d), up to 9 m in width, originates from beneath the east terminal of the southern entrance and runs intermittently in a north-east to south-west direction for some 250 m before being truncated by circular hollows. There is a possible continuation of the trackway curving round towards the eastern gateway. The track appears to be integral with the prehistoric field system as lynchets are present on either side of its line. The course of the track has also been utilized as the route from the southern entrance through the interior to the later northern break, as depicted by Huggins in 1802 and subsequently (OS 1879; OS 1898; OS 1899 and OS 1974).

The central and eastern portions of the hillfort interior are honeycombed with circular depressions, varying in diameter from 0.8 m to 10 m, which extend eastwards from the flint mines in the south and west. On the crest of the hill there is a distinct grouping of larger, more rectilinear pits and platforms which range in diameter from 8 m to 10 m. The pits are, however, very shallow, averaging only 0.3 m deep. The grouping appears to post-date the latest phase of field system, with the exception of a rectangular hollow (e) which clearly pre-dates a lynchet; the latter alters direction in order to avoid the hollow. Several of the hollows also appear to overlie the line of the trackway.

There is a further distinct grouping of at least 11 closely spaced sub-rectangular depressions cut into the two prominent lynchets which run parallel to the rampart on the southeast. Each hollow measures about 11 m by 5 m and up to 1 m in depth and the grouping stretches for at least 300 m, up to the eastern entrance. Although no direct dating evidence is available, the form of these depressions is similar to that of Romano-British settlements recorded in Wessex, such as at Chisenbury Warren, Enford (Bowen & Fowler 1966, 52). A number of smaller sub-circular depressions to the south may be associated storage pits.

Two sub-rectangular enclosures were recorded just below the brow of the hill in the northern section of the fort. The largest of these (g) (Toms & Toms 1926, 56, fig. 1, III) is a double embanked enclosure, 50 m by 38 m in extent, with a medial

ditch up to 0.3 m in depth. There are at least five clearly defined rectangular subdivisions within the enclosure, with a possible causewayed entrance 3 m wide, on the southern side. The eastern side has been mutilated by two circular earthworks and a 6 m wide circular depression which cuts the north side (n) is almost certainly the remains of a 1939–45 gun pit (Worthing Museum Records, memo from K. J. Barton). The ditch on the west side clearly cuts a transverse lynchet. Although partially excavated by Pitt Rivers without any definite results (Lane Fox 1869a, 63), a Romano-British occupation date has been suggested for the enclosure, based on an assessment of surface ceramic assemblages (Toms & Toms 1926, 71).

The second enclosure (h) (Toms & Toms 1926, 56, fig. 1, II) lies some 50 m to the west of (g) and comprises a sub-rectangular ditch, 0.6 m deep which encloses an area measuring 18 m by 28 m. On the outer lip of the ditch is a bank, 3.5 m wide and 0.6 m high, which is badly denuded on its south-western side where it is cut by a number of pits. A break in the ditch on the north-west may possibly represent the original entrance. Within the centre of the enclosure is a sub-circular hollow, 1.1 m deep. The enclosure is certainly earlier than the field system as a field bank abuts it. However, it is uncertain whether it is of Neolithic date as suggested by Pitt Rivers (Lane Fox 1869a, 63).

Two further rectangular enclosures (f), up to 30 m in length and defined by banks 2 m wide by 0.4 m high, are situated between lynchets towards the western end of the Romano-British settlement complex. These are likely to represent a more substantial building than those of the hut scoops nearby.

Two parallel banks (i) lie just inside the eastern entrance; at best they are 0.4 m high and 3 m wide, separated by a shallow ditch 0.3 m deep. The Toms interpreted them as representing an enclosure which had been largely destroyed during the refurbishing of the main rampart (Toms & Toms 1926, 56, fig. 1, X).

Three possible ponds have been identified. The largest (j) is a deep circular pit 12 m in diameter and 1.3 m deep, with a surrounding low spread bank up to 3 m in width. Its dimensions and position suggest that it may be a reused flint mine shaft. Another flint mine shaft (k), 2 m deep, which may have been reused as a pond, lies 35 m to the northeast, while a much smaller rectangular embanked pond (l), 0.8 m deep with surrounding bank, is located just below the brow of the hill on the north.

A circular feature (m) in the south-western sector of the interior, 21 m in overall diameter, comprises a circular bank up to 3 m wide and 0.4 m high, surrounding an internal ditch 0.5 m deep. The feature clearly overlies a 'Celtic' field boundary, and a pit-like depression on the western side is indicative of an underlying flint mine. Previous interpretations have included a barrow or hut-platform (Aldsworth 1983, 198), although the sharp nature of the earthworks suggests much later use. The position of the earthwork on the west brow of the hill may be an indication of its former use, possibly as the site of the beacon mentioned by John Aubrey (see Historical and Archaeological Background), since it commands extensive views along the coastal plain.

THE ENVIRONS

The remnants of a 'Celtic' field system are represented by at least three lynchets running for up to 50 m on a south-west to north-east alignment outside the eastern gate of the hillfort. These are cut obliquely by a shallow ditch running from the outer defences in a south-easterly direction. Traces of lynchets or cultivation terraces were also observed on the slope of Vineyard Hill immediately to the east, below the southern rampart.

A very denuded bowl barrow (p), lying approximately 130 m southeast of the eastern entrance, measures 13 m in diameter by 0.1 m high. Its north-eastern corner has been obliterated by a farm track and a small circular depression at its centre is characteristic of early barrow investigation. The barrow appears to lie slightly below the projected line of the most easterly lynchet, although a definite stratigraphic relationship between the two features could not be established. A second bowl barrow, surveyed by the RCHME but immediately west of the area illustrated, was recorded at TQ 13360783. It is possible that two Early Bronze Age beakers known from Cissbury (Clarke 1970, 499) may have come from one or even from both barrows; their exact findspots are, however, unknown.

A section of holloway (q) was surveyed. It was depicted in 1808 as running from Sompting to Findon via the ridge (WSRO Add MS 407). Although it is now partially destroyed by an encroaching field, the route is clearly later than the adjacent lynchets, probably being of medieval or later date. A sub-circular feature similar in size to the Second World War gun-emplacements in the interior, lies close-by to the east.

CONCLUSION

The similarities in the key relationships identified by Herbert Toms and the recent RCHME survey is testimony to Toms' ability to analyse relationships on the basis of surface evidence alone. The RCHME survey confirms and builds on these observations by depicting the landscape of Cissbury as a whole. It illustrates for the first time the extent of flint mining activity on the hilltop, where in excess of 270 shafts are now recorded and provides an indication of the extent of post-extraction processing which took place *in situ*. In addition, the survey depicts how the Neolithic industrial landscape was reclaimed for agricultural use in later prehistory, as well as portraying the extent of Iron Age and Romano-British activity within the interior.

There is also numismatic evidence for the hillfort being used as a refuge mint under Aethelred II (Bell 1978, 66). Although current opinion still favours associating the coins with Cissbury (M. M. Archibald, pers. comm.), there is no conclusive evidence for this being identified with the post-Roman remodelling of the gateways.

SURVEY METHOD

The survey was carried out using a Wild TC 2000 Total Station theodolite and a GRE3 data logger. Main control points were established as a closed

traverse around the main rampart of the hillfort and secondary control points added. Data was computed using RCHME Mathshop survey software out-putting to a Calcomp wide-bed plotter. Measurements of archaeological detail were then added to the survey framework, from the secondary control, by taped offsets.

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The field drawings, original inked plan and supporting archive material have been deposited in the National Monuments Record under the record numbers TQ 10 NW 1 and TQ 10 NW 4.

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