The evaluation of a prehistoric mound damaged by rabbit burrowing at Maryton Law, Angus

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Introduction

Maryton Law (NO 6817 5557) lies some 4km south-west of Montrose on the northern shoulder of the hills to the south of the Montrose Basin, with extensive views towards the north prior to the planting of a woodland on the hilltop (Illus 1). Maryton Law is a Scheduled Ancient Monument believed, prior to the present investigation, to be a cairn or a motte or possibly both. The mound is some 34m in diameter and 6m high and lies in a mature plantation. This plantation is not shown on John Thompson’s map of the area from 1825, but appears on the first edition OS map surveyed in 1861 (Forfarshire, sheet XXXV, 1865). The plantation is enclosed by a stone wall, now reduced to a stony bank.

The site was suffering severe disturbance and erosion due principally to rabbits, but also from livestock. The mound had also been damaged significantly on the south-east side and to a lesser degree on the north-west side by quarrying. The flat top of the mound, however, appeared to be relatively unaffected and it was considered that this area might still contain significant archaeological information. Headland Archaeology Ltd was commissioned by Historic Scotland to undertake an archaeological investigation of the mound in 1996. The main objectives of the investigation were to establish the nature of this monument, to rescue any archaeological information before it was lost to erosion, and to provide information to meet its long-term management needs. The project consisted of two main parts: survey and excavation. In this paper, we present a summary of the archaeological findings and then a discussion of the damage sustained by the site and the implications for future management.

The surface condition of the mound

A survey was carried out to provide a three-dimensional record of the mound and the extent of surface damage on the monument. During this survey the extent of unvegetated surfaces caused by rabbits and stock, the position of tree-trunks and the visible extent of their root plates were mapped, as were the location of rabbit burrows and scrapes. A detailed contour survey was carried out over an area of 80m by 80m (Illus 2); the damage to the monument was recorded within an area of 50m by 50m centred on the monument (Illus 3). The drawn survey was supported by a photographic survey of the damaged areas of the mound.

Quarrying

The most substantial surface damage to the mound has been caused by a shallow quarry on its south-east side. Projection of the mound perimeter indicates that the quarry has extended some 10m into the mound. This quarry post-dates the plantation as it cuts into the plantation dyke. A smaller but deeper quarry, mapped on the first edition OS map of 1861, is located to the north-west of the mound. It lies very close to it, but it appears not to have done any significant damage to the monument.

Rabbits

The main areas of rabbit erosion were concentrated on the south and south-east side, mainly in the old quarry face of the mound. There was one concentration of burrows near the summit of the mound and a lower band of burrows around the south and east sides. The south-west side of the mound, between the two quarries, remained unaffected by rabbits, with the exception of a few superficial scrapes.

Livestock

In some instances it was difficult to distinguish
between stock and rabbit erosion, and in some cases both factors are likely to have contributed to the disturbance. The main areas of stock erosion were located on the lower parts on the north-west side of the mound where the animals had been sheltering under trees.

Trees

The trees growing on the sides of the mound are mature elms and beeches with two pine trees. Some of these have extensive root plates with little or no turf cover between the roots, especially those on the north-east side of the mound. Lack of turf cover may, in part, have been caused by stock sheltering under these trees.

Internal structure of the mound and extent of sub-surface disturbance

Sample excavation was undertaken in order to establish the nature and date of the mound and to determine the degree of sub-surface damage or threat to archaeological information caused by tree roots and rabbits. To meet these objectives four large trenches (A-D) and five small ones (E-I) were excavated (Illus 2). The two trenches on the top of the mound were excavated by hand, the others by machine.

Trench A

Trench A was cut across the north-west edge of the mound. The deposits, up to 1.6m deep, consisted mainly of rubble made up of medium to large angular stones. The deep deposits of rubble and the uneven surface of the underlying bedrock contrast with the other trenches around the mound where smooth bedrock was encountered close to the surface. This suggests that Trench A was located within an infilled quarry. There was no clear evidence for its extent, albeit that it may be indicated by a slight dip in the terrain on the north side of the mound (Illus 2).

Trench B

Trench B was cut across the south-east side of the mound leaving a 4m high back section through the deposits in the mound (Illus 5). Only the northern 5m of the trench cut through mound material as the southern half of the trench lay within the backfill of the adjacent quarry. Bedrock was exposed at the base of the trench. The bedrock surface beneath the mound was nearly horizontal with striation marks created by ice during the last glaciation. A near vertical step in the bedrock marked the edge of the quarry. There was no evidence of a buried soil horizon in this trench and the mound seems to have been built directly on bedrock.

At the base of the mound was a banded silty loam deposit, with some stones, up to 0.6m thick (F11). It sloped down to bedrock in the radial section, indicating that it was a core deposit which did not extend to the edges of the mound. This basal deposit was overlain by a more homogenous and stone-free loam up to 1m thick (F12). Over these two deposits was a layer of very large, angular stones, 0.7m–1m thick (F13). The lithology of the stones matched the local bedrock, and were probably quarried nearby. Above the rubble were another two deposits, a mottled mixed layer (F15) overlain to the east by a very homogenous sandy layer (F16). The two deposits, 1.4m deep in total,
Illus 2. Detailed contour survey and layout of trenches on the mound.

contained some very large angular stones concentrated towards the top of the layers. At the top was a layer of large and very large angular stones in a matrix of loose crumbly dark brown loam (F17) capped by the modern turf. The layer was up to 0.4m thick with a very uneven interface with the underlying deposits.

The rabbit burrows seen in the trench were concentrated at the lower parts of context F12 at the interface with context F11. This level was completely penetrated by what seems to be several generations of burrows continuing into the mound beyond the edge of the trench. Only a few burrows were present in the upper part of the section. However, as these burrows were sectioned closer to the surface of the mound, it is possible that they branched out into a more extensive network of burrows deeper inside the mound.

Assessment of soil samples taken from the five non-rubble deposits in the mound showed that these deposits contained very little palaeo-environmental material. Very small quantities of charcoal were recovered from all contexts and rare fragments of charred hazelnut shells from F11, F15 and F16. Two small struck flint fragments recovered from context F16 are made from pebble flint.
Illus 3. Extent of surface damage to the mound.

Trenches C and D

Below the turf, a layer of dark brown loose sandy loam with medium to very large stones (context F17) was exposed across the summit. There were some indistinct areas of increased stoniness across Trench C, but none of these could be identified as features. The deposit seemed to be back-fill from an old disturbance of the mound. Trench C was excavated down to 0.4m–0.5m below ground surface, at which level the base of the excavation trench was recorded. At this level the top of the underlying sandy deposits seen in Trench B (F15 and F16) was exposed in the south and north-east corner of the trench, but the layer of disturbed material still covered most of the trench. No attempt was made to excavate further down into this part of the mound. Trench D was only excavated down to a depth of 0.3m–0.4m. The mixed stony layer F17 seen in Trench C continued into Trench D, but here it was only 0.3m–0.4m deep. Having removed F17, an uneven surface of large to very large angular stones embedded in a matrix of fine red-brown sand was exposed, very similar to the upper part of F15/F16 seen in the back section of Trench B, the upper part of the mound material.

The only feature uncovered was a large sub-rectangular stone slab which measured 1.3m by 1m and 0.2m thick and was embedded in F17. It had a flat top surface and had been placed horizontally in a pit, the west side of which was still visible. Elsewhere, however, the pit was indistinguishable from the back-fill of the other disturbance.

The assumption that the mixed stony layer (F17) was back-fill from a disturbance of the mound was confirmed by the finds. F17 contained a small assemblage of 19th-century pottery and other modern finds. These included a glass paste pendant (Illus 9), an iron hook, a piece of lead slag and a George III copper penny, ‘Cartwheel Issue’, of 1797. A second coin from this layer has been identified as a billon penny from the reign of James I, 1424–37 (pers comm, Nick Holmes, National Museum of Scotland). Mixed in amongst this recent material were eleven sherds of prehistoric pottery (Illus 8), small pieces of burnt bone and seven pieces of worked flint.
Trenches E to I

Five soil pits measuring some 2m by 1m were excavated around the sides of the mound. Trenches F, H and I were all very similar. Their stratigraphy comprised a shallow layer of dark brown silty soil with a few angular stones above near horizontal bedrock. Trenches E and G contained deposits of large angular stones in a matrix of grey-brown crumbly soil up to 0.5m deep. This was similar to the rubble deposit seen in Trench A and may stem from old quarrying in the area to the north of the mound.

Observations of the level of bedrock in the various trenches and along the north-eastern edge of the larger quarry indicate a fairly smooth and horizontal surface to the bedrock. These have been used to estimate the plane of bedrock beneath the monument and calculations indicate that bedrock falls towards the north-west at a gradient of 1:9 (Illus 4).

Archaeological interpretation of the mound

A prehistoric burial mound

Prior to the excavation there were three plausible interpretations of the nature and function of the Maryton mound. It was either a prehistoric burial mound or a medieval motte, or both. The excavation has established that the monument is a prehistoric mound which, on the basis of the pottery recovered, possibly dates to the 3rd millennium BC. The size of the mound, 10m in diameter at the top, made it unlikely to be a motte. Confirmed mottes are generally larger than this but the smallest, including Culter in Clydesdale (Tabraham 1978) or Murie in Perthshire (RCAHMS 1994), are 30m in diameter with summits 12m across. It is therefore no surprise that there is no evidence for the later use of the mound as a motte, although the recent disturbance of the summit could have destroyed any structural evidence for buildings there. The absence of medieval artefacts, other than a single coin dating from the first half of the 15th century, argues strongly against re-use at that time.

The structure of the mound, based on the evidence seen in Trench B, consists of a lower deposit of silty loam sediment some 1.5m thick, under a layer of rubble 0.7m-1m thick, with a 1.7m deep deposit of sediment on top. The fine textured sediment contains hardly any inclusions, and is assumed to be local and to derive from the area immediately around the mound where there is
very thin soil cover at present. There was no visible trace of a buried soil under the mound, which apparently was built on bedrock. The angular stones making up the rubble in the middle of the mound are of local Old Red Sandstone lava, probably quarried not far from the mound. The possible quarry seen in Trench A might be the source of this stone as mound material with the same sequence of soil-rubble-soil was seen overlying a basal layer of rubble at the south end of Trench A.

The general composition of soil with a layer of rubble in the middle resembles strongly the stratification seen in the outer parts of the barrow excavated at North Mains (Barclay 1983). As the section at Maryton was not carried through the mound it is not possible to tell if this barrow had a simple composition of three main deposits, or if it had a more elaborate construction as in the barrow at North Mains.

No undisturbed burials were identified at Maryton but this primarily reflects the limited extent of the excavation undertaken. The best evidence for the former existence of burials is the presence of prehistoric pottery in the recently disturbed deposit on the summit of the mound. It is assumed that the sherds derive from vessels deposited with burials in the mound which were later disturbed. This interpretation is supported by the relatively large size of the sherds, the presence of adjoining sherds and a lack of abrasion. The pot sherds represent four different vessels, one Food Vessel bowl and three Beakers. The Beakers are dated to within the range of 2600 to 1800 BC, while the Food Vessel lies within the range 1700 to 1150 BC (A MacSween, below). This could indicate that the mound contained several burials and that it was reused for secondary burials long after it had been built. The few small fragments of burnt bone could not be positively identified, but could come from human cremations associated with the pottery vessels.

The prehistoric pottery

Ann MacSween

Eleven sherds of pottery representing four vessels – three Beakers and a Food Vessel bowl – were recovered during the excavations at Maryton Law (Illus 8). All were from F17, an area of probable 19th-century disturbance.

The Food Vessel bowl (V1). The Food Vessel bowl is decorated with comb-impressed decoration in a horizontal herringbone pattern. Comb-impressed decoration is common on Food Vessel bowls, as is the rim type, which is a slightly internally bevelled form (Simpson 1965, 30). The radiocarbon dates for Food Vessels from east / central Scotland have been summarised by Sheridan and Cowie (1991, 107–8) and range from 1700 to 1150 BC (Cowie 1993a, 140).

The Beakers (V2–4). The Beakers are cord-decorated, probably from all-over-corded Beakers as none of the sherds show evidence for zoning; a range of sizes is represented. Cowie (1993b, 135) notes that simple all-over-ornamented Beakers may have had a long currency and that it is unwise to attempt to date such vessels any more precisely than within the broad date range of Beakers as a whole, that is from 2600 to 1800 BC (Kinnes et al 1991, 39).

It is possible that the assemblage derived from a funerary context. While a single Beaker usually accompanies an individual burial, the presence of two or more Beakers in a cist, although rare, is not unknown: at least a dozen cases have been recorded in north-east Scotland (Hanley and Sheridan 1994). One of the Beakers from Maryton (V2) is a short Beaker, similar in height (c.82mm) to one of two Beakers from Balblair, Inverness-shire, which Hanley and Sheridan (ibid 135) described as ‘unusually small’. In their paper they discuss the possibility that small Beakers indicate interment of a baby or young child – the available evidence for Britain is summarised by them (ibid 138).
Illus 6. Disturbance caused by rabbit burrows on the south-west side of the mound.

Illus 7. Root plates on the north-east side of the mound.
Recent history of the mound

The excavation uncovered evidence for up to three recent episodes of disturbance and use of the mound:

1. Ordnance Survey. The large stone block found at the top of the mound was thought during the excavation to have been a capstone from a disturbed cist in the mound. However, map evidence suggests an alternative explanation for the stone. The first edition six-inch Ordnance Survey map shows that there was a triangulation point on the top of the mound in 1861. Next to the triangulation point are two numbers, Sur 334.9 and Cr 333.3. These two numbers refer to the level of the ground surface (Sur) and to the centre (Cr) of a buried stone marking the position of the triangulation point. In cases where it was not possible to put the triangulation point on bedrock or a standing stone structure, it was common practice to locate it on a large flat stone buried beneath the ground surface to ensure that it was not dislodged. The point on Maryton Law is not part of the primary network of triangulation points which was established in the 1840s, but may well be a secondary triangulation point established in the 1850s (Carter 1998).

2. Antiquarian investigations. The stone buried by the Ordnance Survey overlies the deep disturbed deposit that covers over half of the summit of the mound; this must therefore be the result of an earlier disturbance. The full depth and extent of this disturbance were not reached in the present excavation, but it was clearly substantial and had reached deposits containing prehistoric pottery. The scale and position of the disturbance suggest an early unrecorded antiquarian excavation of the mound. The only clue as to the date of this excavation is provided by the penny of 1797, which was deposited in an unworn condition.

3. A picnic site. A third period of activity is indicated by the composition of the pottery assemblage recovered from the summit of the mound. Adrian Cox suggests a date range of 1850 to 1890 for the majority of the assemblage which is characterised by vessel types indicating small-scale eating, drinking and smoking. Therefore, although some of the assemblage could date from the occupation of the mound by the Ordnance Survey, it is more likely to reflect later 19th-century picnics on what is an excellent viewpoint. The present-day regular level summit to the mound may have been created as a viewing platform.

Recent artefacts

Adrian Cox

Trench C (F17). The assemblage of 64 sherds of pottery from Trench C (F17) includes a total of 14 fabric groupings. The coarsest of these is represented by five sherds of orange to red earthenware, with a crazed, buff to yellow glaze internally and (with one exception) a brown glaze externally. The finest ware represented is a very hard-fired, fine ‘bone’ china, represented by two sherds in slightly different fabrics.

A majority of the pottery is from tablewares, and most of this group is from familiar vessel forms: circular plates, saucers and teacups. One sherd of patterned ware is from the shoulder of a small jar, a tableware form of the kind used to contain preserves or similar foodstuffs.

Nineteen sherds in a dark grey, heavily reduced stoneware fabric, with a thin, black glaze, probably belong to a single vessel. The vessel form is a fairly straight-sided jar of uncertain height, with a rim diameter of around 170mm. The vessel appears to have had a lid, of which at least two fragments are present. A possible interpretation of this jar is that it was a tobacco jar, a type often manufactured in hard-fired fabrics and decorated with dark-coloured glazes. Many examples were quite ornately decorated in relief, as seems to be the case with this example. Abrasion on the base of the vessel indicates that it was probably quite well used before it came to be broken and deposited at the site.

A small pendant or earring from Trench C consists of a roughly spherical array of connected, circular components, each holding a piece of decorative, faceted glass paste in a claw setting (Illus 9). The manufacture of this type of setting is described by Jarvis (1978, 174–8). The decorative style of this object indicates that it belongs to the second half of the 19th century.

Trenches A and D (F21 and F17). The smaller assemblages from Trench A (F21) and Trench D (F17) exhibit very similar characteristics to the larger assemblages discussed above, and the above interpretations also apply to them. Fragments of
pottery in some of the same fabrics as those in Trench C (F17), even quite probably from one or two of the same vessels, are present in these two assemblages.

A large majority of the pottery sherds and all of the glass fragments exhibit very little abrasion, and these would appear to represent primary assemblages. The overall assemblage indicates a date range of deposition of between c 1800 and 1910. Very few pieces (possibly between seven and nine sherds of pottery, and probably the clay pipe fragment) belong to the earlier part of that period; the great majority date from 1850–90. It is unlikely that all of this later group of fragments were deposited within a short space of time, although a number of them could easily belong together within the period 1850–70. While it is possible that some of this material could have been left behind by Ordnance Survey staff in the 1850s, almost all of these artefacts could, alternatively, have been deposited by people using the site as a picnic spot. The character of this assemblage would also probably be quite consistent with summer house or ‘high tea’ activities (small-scale eating, drinking and smoking).

Management issues

The objective of the evaluation at Maryton Law was to provide information to meet long-term management needs. This has been achieved by determining the nature of the site and its archaeological potential and by assessing the current threats to this archaeological resource.

Current threats

The main disturbance on the mound is currently caused by burrowing rabbits attracted by the fine sediments that form the bulk of the mound. Soils
surrounding the mound are shallow and stony so the mound offers the best site for burrows in the immediate area. The burrows are concentrated on the south and south-east side, mainly in the old quarry face of the mound (Illus 6) and it seems that quarrying has exposed the inner stone-free sediments of the mound to rabbits. The excavation of the summit of the mound only exposed a few burrows mainly along the south edge of Trench C, avoiding the stony central parts of F17. The excavation demonstrated that rabbits have burrowed very deep into the mound and the inner limit of burrowing was not reached in Trench B. If burrowing is allowed to continue it will lead to the removal of a significant volume of the mound and cause collapse of the rubble layers. Excavation of burrows has created large volumes of loose sediment at the surface which are easily eroded off the side of the mound.

Erosion by livestock is mainly located on the north-west side of the mound, mostly around trees, suggesting that it is caused by animals sheltering (Illus 7). It has created areas with no grass cover, but this has not resulted in major erosion of the sediments of the mound as the root plates of the trees have prevented this from taking place. The worst stock erosion is in the old quarry to the north-west of the mound, apparently caused by animals climbing up the steep side of the quarry onto the mound.

There is no evidence that trees are causing substantial disturbance at present. Judging from what was seen in the excavation trenches, the roots seem not to penetrate deep into the mound. Trench B was positioned immediately adjacent to a mature elm tree but the roots recorded in section, up to 0.2m in diameter, did not penetrate more than 0.5m below the ground surface. This matches with the survey evidence for extensive superficial root systems over the mound. One tree had to be cut down prior to the excavation because it had been substantially undermined by rabbit burrowing and was at risk of falling. No trees have been blown down yet on the mound but this remains a potential cause of disturbance for the future.

Impact of current disturbance on the archaeology

Despite the clear evidence for substantial on-going disturbance to the mound, primarily due to rabbits, there is little evidence for loss of archaeological information. This is a reflection of two aspects of the site. Firstly, it is a prehistoric mound that consists largely of a few high-volume, sterile, sediments and therefore can experience considerable disturbance without great loss of information. Secondly, the mound has been substantially damaged in the past by quarrying and what is apparently an early antiquarian excavation. This excavation reached the centre of the mound and probably disturbed one or more burials. The regular appearance of the mound at present is the result of cosmetic restoration in the 19th century designed to make a viewing platform; this has disguised the true condition of the monument.

The result of these two factors is that there are unlikely to be any sensitive archaeological deposits at or close to the surface of the mound. Therefore any near-surface disturbance has had no significant negative impact on the mound, other than to disfigure it. There remains the issue of damage to sensitive deposits deep within the mound. The earlier excavation apparently reached burials and it may be assumed that other, similar deposits remain within un-disturbed parts of the mound. Rabbit burrowing has the potential to reach and disturb any remaining burials, but the lack of bone, pottery or other artefacts in the excavated burrows and spoil suggests that this has not yet happened. Confirmation of the nature and condition of archaeological deposits deep within the mound would require almost the total excavation of the mound.

Long-term management

The evaluation has established that this site is a large prehistoric mound containing burials. It was substantially damaged by quarrying and an undocumented excavation within the past two centuries and was, at the time of excavation, being extensively disturbed by burrowing rabbits. This burrowing has apparently not yet led to significant further loss of archaeological information. Given this situation, two options may be proposed for the long-term management of this site:

1. Abandonment. If it is assumed that past intrusions have effectively destroyed the archaeological value of the site, it may be argued that there would be no justification for its further management, protection or investigation.

2. Protection from rabbit damage. If it is
assumed that significant archaeological deposits remain within the mound, they may be preserved in the long term by the exclusion of rabbits from the site.

Remaining uncertainty over the survival of significant undisturbed deposits at the centre of the mound means that it is difficult to recommend its abandonment. This issue could only be settled by major excavation which would be both costly and would destroy the site. The mound is a prominent landscape feature and removal by excavation should not be undertaken lightly. It must be assumed that significant deposits remain and therefore exclusion of rabbits must be the preferred option. Following the evaluation at Maryton a rabbit-proof fence was erected. One year later, grass has re-established over the back-filled excavation trenches and the mound is generally well vegetated. The number of active rabbit burrows has been greatly reduced but one or two are still occupied and further work is required to totally remove these animals from the mound.

Exclusion of rabbits remains difficult because any rabbit-proof fence will, in time, be breached. Therefore exclusion is a strategy that requires continued monitoring and maintenance if it is to be effective in the long term. Significant reduction of rabbit populations over a wider area may prove to be a more effective strategy, rather than simply the displacement of part of a large population. Such measures will require the cooperation and support of a wide range of individuals and agencies.

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Abstract

A substantial mound on Maryton Law, south of Montrose, was the subject of an archaeological evaluation to determine the impact of current disturbance, principally caused by rabbits. The site was found to be a prehistoric mound which had been extensively disturbed by earlier unrecorded excavations and other activities.

Key words: Montrose, cairn, prehistoric, Beaker, Food Vessel