

SITE SURVEY AT BRINKBURN, NORTHUMBERLAND, JUNE 2017



Bernician Studies Group

Summary

With the permission and good will of the Fenwick family, the Bernician Studies Group carried out magnetometry and earthwork survey on the promontory at Brinkburn in Northumberland in June 2017. Four undergraduate students from the University of Newcastle participated as part of the survey training element of their degree courses in archaeology.

- *The magnetometry survey yielded evidence of a large semi-circular feature not visible on the ground surface.*
- *The earthwork survey confirmed features recorded in surveying by Henry MacLauchlan published in 1864.*



Henry MacLauchlan, Survey of Brinkburn published in 1864

1: Site Setting (Figs 1 and 2)

Brinkburn lies on the north bank of the River Coquet between Rothbury and Felton at a point where the river loops southwards creating a narrow, steep-sided tongue of land some 200 metres wide. A large earthen embankment across the neck of the loop, some 450 metres from the tip, creates a promontory fort, presumed to be of prehistoric date, on a plateau some 75 metres above sea level and 30 metres above the river bank. At the southern tip of the promontory, below the plateau, are sited the remains of Brinkburn Priory, a house of Augustinian Canons founded around 1135 AD and now in the care of Historic England, and a house still in the possession of the Fenwick family. The plateau within the promontory fort is currently in use as pasture land. Surface features are visible: an embanked causeway leading from a cutting made towards the west end of the fort's embankment, southwards and then south-west towards the tip; west of this, on uneven sloping ground are the marks of broad-rigg cultivation aligned east-west and with a headland parallel to the embanked trackway, with other riggs parallel with the east edge of the plateau; towards the south-east end is a row of rectangular platforms which are likely to be house sites; at the north-east edge of the plateau, within the woodland that occupies the edges of the whole loop, is what appears to be the original entrance through the fort defences (as shown on the map Fig 2); a hollow way runs to a gate along the east edge.

2: The 2017 Survey

The 2017 earthwork and magnetometry survey were conducted on the plateau within the area of the promontory fort; no survey has been conducted around the priory buildings.



Fig 1: The Brinkburn Promontory. Bing Satellite.

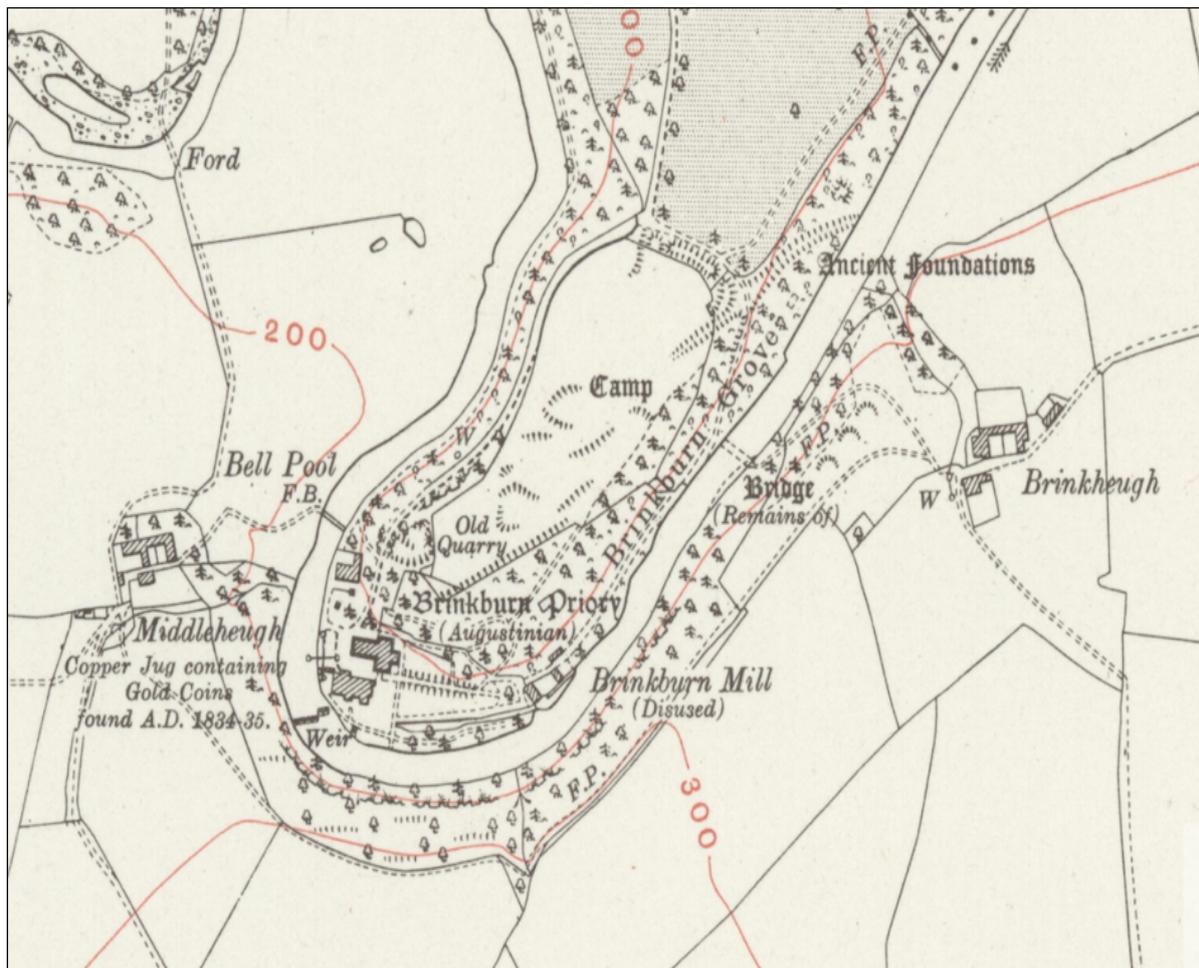


Fig 2: Ordnance Survey Second Edition

2.1 Magnetometry Survey

14,000 square metres were surveyed in a grid of 20m x 20m squares with a Geoplot FM256 Fluxgate Gradiometer set at a sensitivity of 0.1 Nano Teslars. Grids were surveyed in N-S passes with a 0.5-metre separation and a sample rate of 8 readings per metre, giving 6,400 readings per 20-metre square, a total of 224,000 readings.

In the two weeks of the survey the weather altered drastically from hot and dry to very cool windy and very wet. This together with the constraints of training students has meant that the group's normal approach to analysing data has been amended to take into account these variations.

All of the survey data are included in the plots below. Plots have been processed in rows initially, clipped to + - 25 where necessary (the background had a low base reading with little variation so any metallic object had a higher than normal interference and obliterated any small differences from non-metallic archeology). A high pass filter was also used and a mean grid traverse applied.

A: North Section (Fig 3)

(The numbering of the 20-metre squares is for ease of reference only.)

The embanked causeway is well defined (Squares 2,6,10,14 &18). The red dots indicate small metal objects, possibly nails from horseshoes or nails from a fence designed to separate cattle from the rig and furrow to the west, and the hollow way just discernible in the eastern square (15). What causes the high readings in square 17 is not known.

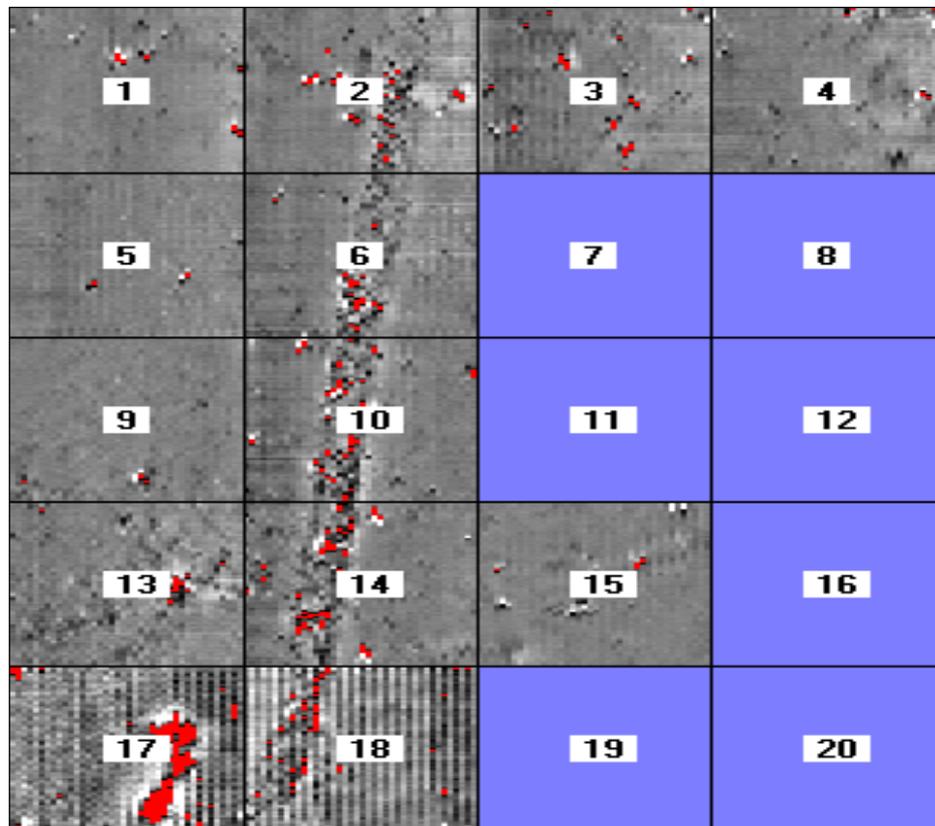


Fig 3: North Section

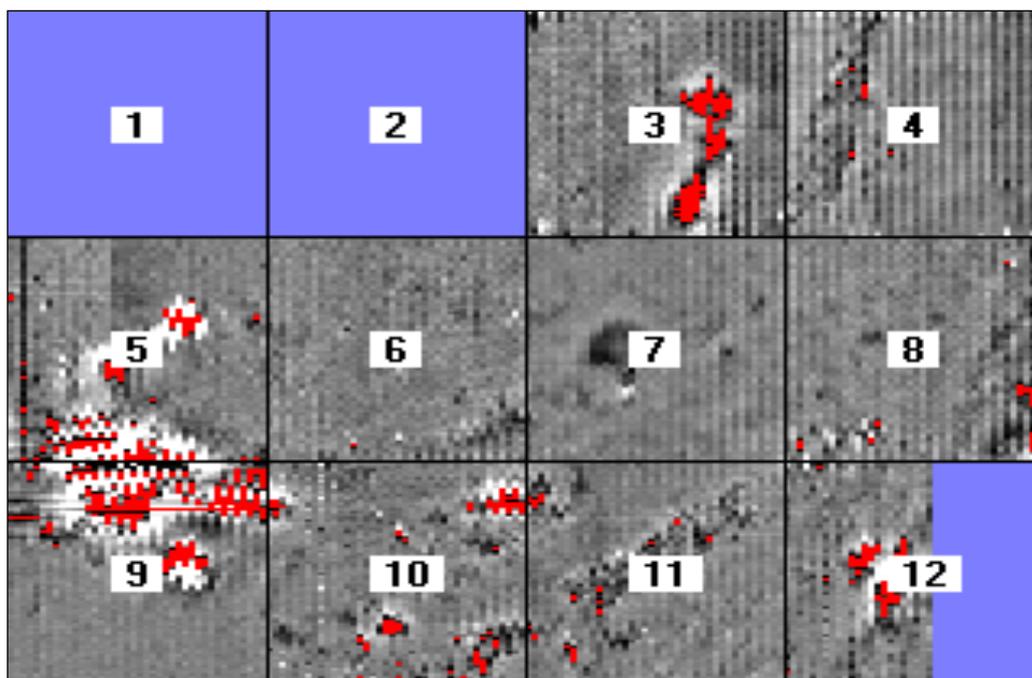


Fig 4: Central Section

B: Central Section (Fig 4)

Squares 3, 7, 6 and 5 have a distinct semicircular feature, possibly an animal enclosure, being at the end of the hollow way; its surrounding embankment is a slight feature. Square 9 shows a rectangular area, possibly a building with many high readings, most likely a workshop or blacksmith if the area was used for stabling horses as well as for cattle. Mr. Hugh Fenwick reports that a large number of horseshoes have been found across the site, and that within recent memory there was a stable at the very north of the field. It is possible, therefore, that the building in square 9 was a blacksmith's workshop. Squares 10 and 11 with the embankments and small metal objects could then enclose a small rectangular paddock. Square 12 had dark rich loamy soil, which could therefore be a sign of human occupation.

C: South Section (Fig 5)

This is the southern end and highest point of the land. There are indications of a number of structures, particularly in squares 15, 16, 18, 11, 12 and 13. In square 12 an entrance can be traced into a 5m x 15m structure, probably a barn or long house. Another 3m x 3m square is clearly distinguishable at the top of 11. The rectangular area in squares 11, 12 and 18 aligns well with the feature marked on the Ordnance Survey map (Fig.2); square 13 is the way down to the Priory at the end of the causeway marked as a dotted line on the map.

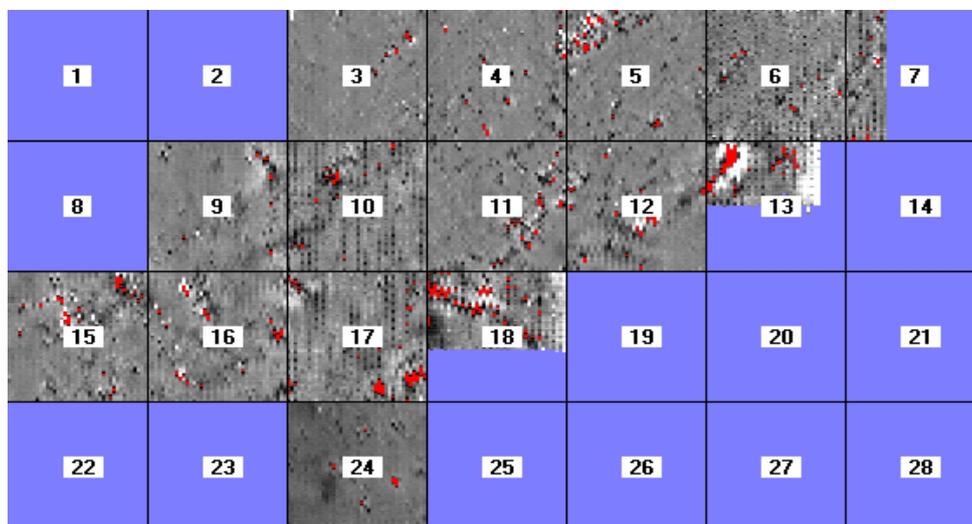


Fig 5: South Section

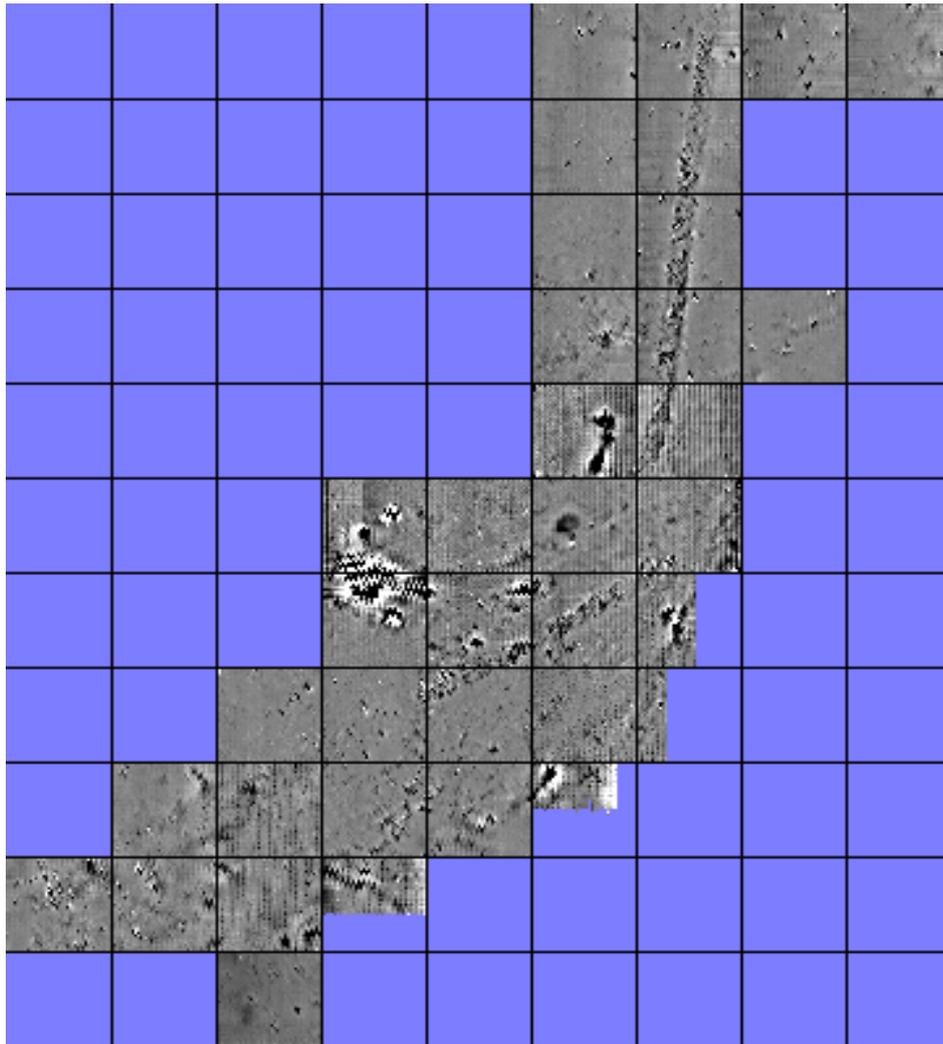


Fig 6: Complete Survey

Magnetometry Conclusion (Fig 7)

Fig 7 shows the magnetometry survey in the context of the Second Edition Ordnance Survey map. Five points may be noted:

- i) The un-surveyed area at the north-west is the area of broad-rigg cultivation, and that at the north east the second area of rigg.

- ii) Away from the central part of the plateau, especially to the west, the ground level begins to drop off steeply and towards the south west there is uneven ground resulting from former quarrying (as indicated on the map). For these reasons, the survey area, represented as a level surface, is not a precise fit to the map.

- iii) The row of rectangular platforms of possible house sites in the south east, lying askew to the axis of the survey grid, is not fully covered in the magnetometry survey; they are better represented in the earthwork survey.

- iv) The semi-circular feature in the central section of the survey (Fig 4) is a new discovery, not visible at ground level.

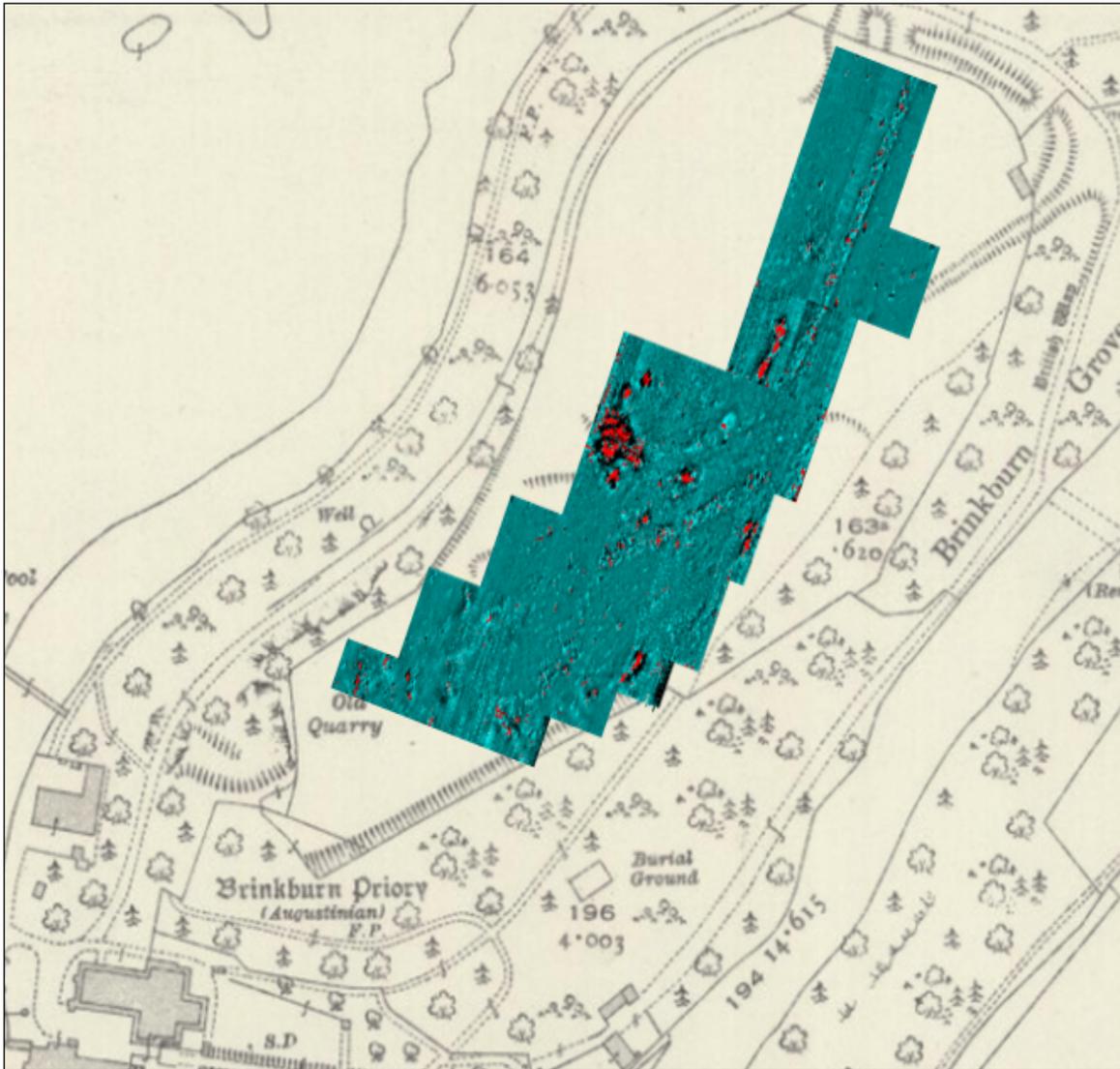


Fig 7: Magnetometry Survey in Context

v) The many points of high magnetic reading (the red spots on Figs 3, 4, 5 and 7) are a strong feature of this survey; further investigations would be needed to interpret these confidently and to distinguish between chance occurrence of metal objects in the soils, elements of boundary features, and residues of metal workings. The dense cluster around square 9 of the central section (Fig 4) merits particular attention.

2.2 Earthwork Survey

The interior of the promontory fort has a complex history, suggested by the geophysical survey and by recent evidence from a LiDAR (Light Detection and Ranging) survey by the Environment Agency (Fig 8: the image appears in negative). The latter shows that the northern half of the fort was extensively cultivated, probably in the medieval period and perhaps later. A number of constructed tracks, including the causeway, enter the fort interior from the NW and NE corners. Towards the south end a large rectilinear enclosure, some 40m by 15m, oriented NE to SW, may be associated with three or four structures first



Fig 8: LiDAR survey of the Brinkburn promontory. Environment Agency.

mapped by MacLauchlan (Fig 9) and confirmed in our fieldwork. These buildings survive as low earthwork platforms or embankments in a line from end to end. One survives only slightly close to the SW fence line. The other two are more substantial and of these, that in the centre of the line, surviving as a low platform, is sufficiently obvious to be measured with an internal length of 21m and internal width of 3m: a ratio of about 7:1. Opposed entrances are visible two-thirds of the way along the long sides. The most NE of the three buildings has only one long side and a partial end surviving, but is of similar dimensions. It differs from the centre building by virtue of a demonstrable embankment covering a wall foundation. These substantial buildings are of a form known as the longhouse, which might date to any period from the Early Medieval onwards. Excavation would determine the length and nature of their occupation and the nature of their abandonment. They might be either domestic or agricultural or a combination of both.

The original entrance to the fort seems to be that marked by the very deep hollow way (more than 4m deep at its deepest from the surrounding field) at the NE corner of the fort. Its form is familiar from other long-used entrance ways at large hillforts in the south of England. It is likely to have been formed by the passage of traffic – cattle, humans and carts – exacerbated by erosion of bare earth during the wet months of the year. Excavation of a

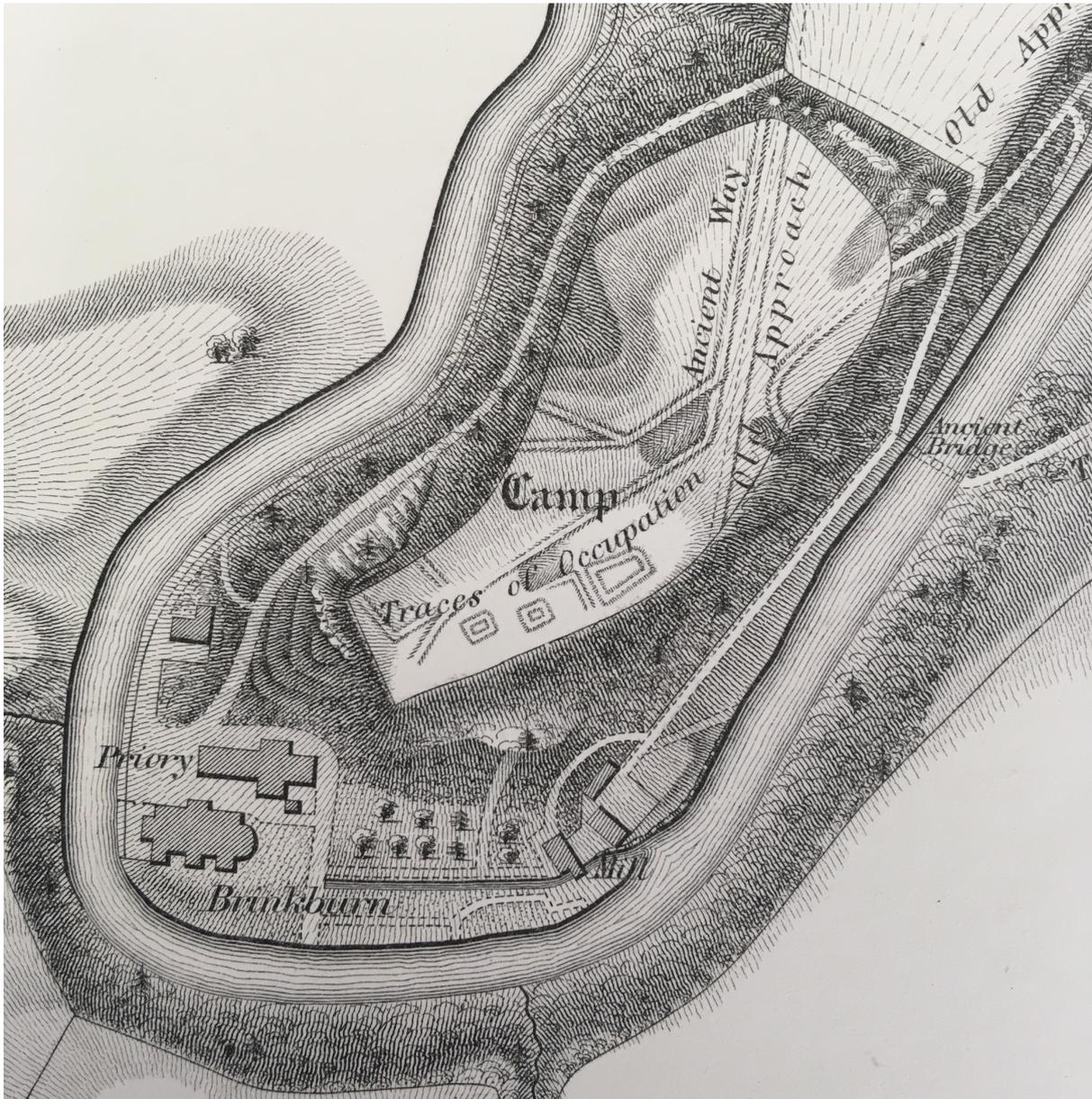


Fig 9: MacLauchlan 1864 survey, detail.

section across it is unlikely to yield much in the way of stratified deposits, but may yield a scatter of diagnostic finds – harness fittings, horseshoes and the like.

The substantial rampart that encloses the promontory across the neck of the peninsula survives well, except where it has been pierced to allow traffic inside. Any external or internal ditch, which must have been excavated to create the upcast for the bank and enhance its visual impact and defensibility, has disappeared through erosion or, more likely, deliberate infill. Excavation of a sectional profile across the earthwork would reveal much about its morphology and history and would probably yield invaluable information about the environment, human and natural, in which it was created. A date for its construction and subsequent phases would tell us much about the history of the whole site.

3: Conclusions

The two survey methods have together demonstrated a range of features, some visible on the ground surface and some not so. It is hardly possible, from this evidence alone, to make judgements on chronology, except to suggest that the cultivation marks are likely to be medieval and that the embanked causeway (Fig 3) respects their position. There is evidence from the mid-19th century that at least one of the house platforms in the south east row had the ruins of a building earlier in the 19th century; this does not date the origin of this or any other building. The dimensions recorded on the earthwork survey are consistent with one or more longhouses, whose date of origin might reach back before the Norman Conquest, and these earthworks are broadly consistent with the features shown in MaLauchlan's site plan of 1864. The semi-circular feature revealed in the magnetometry survey (Fig 4) is of unknown date. There is a presumption that the outer embankment and the entrance to the promontory fort should be of prehistoric date, but that has never been confirmed by excavation; it might well be expected that there should be features contemporary with the primary-stage use of the promontory fort. The extreme south-west area of the magnetometry survey (squares 9-11 and 15-18 of Fig 5) has a complexity of features. Ground conditions here were difficult at the time of the survey; it merits repeat survey by magnetometry and also by resistivity to see if closer resolution of detail can be achieved.

MaLauchlan, Henry 1864. *Memoir written during a survey of the eastern branch of Watling Street, in the County of Northumberland.*

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