Title: LiDAR - the great archaeological detector! Extraordinary revelations at Goblestubbs Copse, Arundel!

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Date: December 2016

Summary: This is a story of archaeological discovery that is nearly a century long. In 1921 Dr H Milbank Smith stumbled across some unusual earthworks at Goblestubbs Copse, hidden in woodlands, west of Arundel. Eliot Curwen, a famous archaeologist of his day, surveyed this set of enclosures and reported on them, with a plan of the site published in 1928 in the *Sussex Archaeological Collections*. But what even he had not realised was that, less than a stone's throw away, under thick tree cover, lay hidden another group of enclosures. LiDAR images from 2014 helped us to see beneath the trees; it has helped us understand how all these seemingly isolated humps, banks and ditches form a more coherent whole; and excavation has enabled us to confirm some of these discoveries, and to begin thinking about possible interpretations. I suspect that these investigations on the ground, and the lively arguments about what it all means, will go on for at least another century - probably longer.

LiDAR - the great archaeological detector! Extraordinary revelations at Goblestubbs Copse, Arundel!

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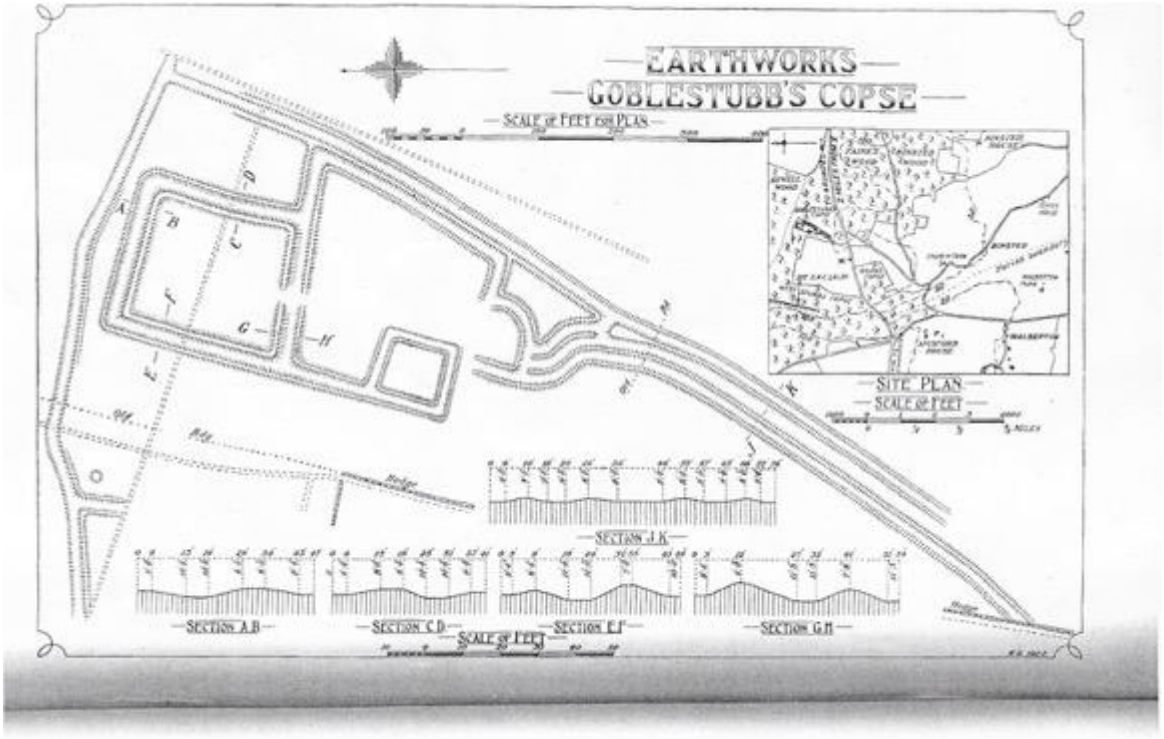


Curwen's earthwork survey of Goblestubbs Copse (1)

Goblestubbs West, the complex Curwen had recorded, was excavated in 1972, by Worthing Archaeological Society, led by Con Ainsworth and Dr HB Ratcliffe Densham from Worthing Museum. This confirmed the Curwen survey. Most of the pottery sherds were Roman in date, including one small, but fine, Samian bowl found near the bottom of a ditch, 4 metres deep.

The very small Samian bowl found in 1972 (2)

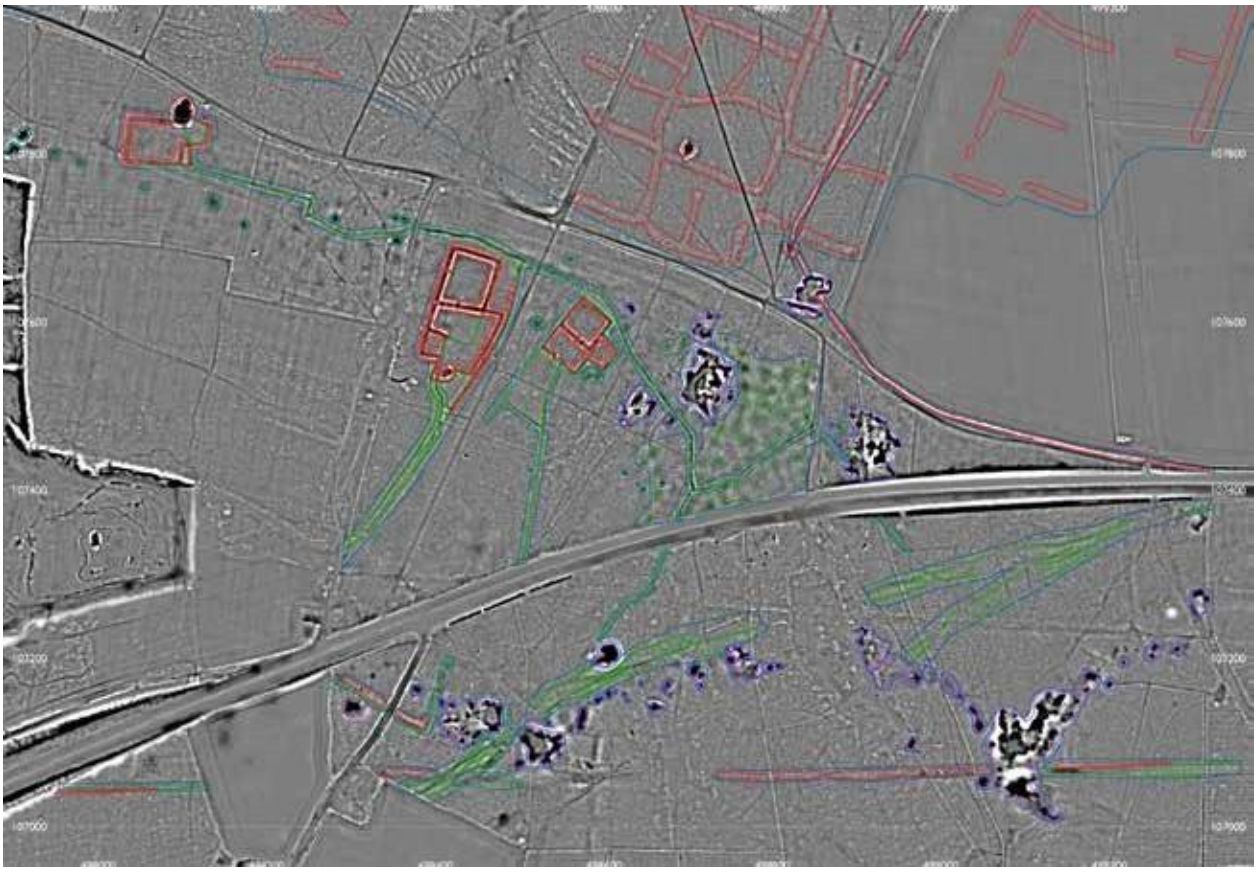
Gobblestubbs East was investigated in 2006, by Worthing Archaeology Society, led by David McOmish; site plans were drawn up by Bob Turner. The pottery revealed in the ditches was found to be late Iron Age and pre-conquest Roman, making these enclosures earlier than Goblestubbs West. One of the obvious questions to ask concerned the relationship between Goblestubbs East and West. How did these enclosures fit together?

Luckily LiDAR came to the rescue in 2014. Images from LiDAR showed that trackways from both enclosures led south towards a dead straight road or causeway, which ran east - west through the water-logged Binsted Woods. Examining this road on the ground, evidence was found of its side banks and ditches at the eastern end of Scotland Lane.

To the north of Goblestubbs was a very different story. The parish boundary, which runs to the north of the Goblestubbs sites, is echoed in the layout of ancient field systems lying to its north, completely concealed by tree cover. These field systems extend to Madehurst Wood in the west and over to Long Lane in the east, and northwards on to the steep slopes above Fairmile Bottom.

A different picture again emerged to the west of Goblestubbs. LiDAR revealed a line of quarry pits, possibly for extracting flint, clay, or marl. It would be interesting to discover if this line of pits follows a particular geological seam, or whether they were dug because they are adjacent to a convenient track or road or both.

LiDAR, however, was not done yet and unveiled even more! Both Goblestubbs East and West lie in an expansive area of woodland that includes Rewell and Madehurst woods. Further earthworks were located by LiDAR in these woods too. This whole complex is situated in a triangle from Whiteways car park in the north, down to Chichester Lodge in the south-west and to Arundel in the south-east. (*If you look at a modern road map the triangle is formed by the A27, A29 and A284, just north-west of Arundel). At the top to this triangle can be found the impressive earthworks known as the War Dyke, and fieldwork by Dave McOmish, Gordon Hayden and others have suggested that some of these banks and ditches form a large enclosure - just possibly what archaeologists call an ‘oppidum’, a sort of Late Iron Age trading centre.



A LiDAR image showing field systems and enclosures in Gobblestubbs Copse, Arundel. The A27 runs across the middle of the image. The two enclosures outlined in red, close together and left of centre, are Gobblestubbs West and East. Note the newly discovered Roman road represented by the two straight lines, partly in red, south of the A27. (3)

When you are walking through these woods, intently staring at the ground trying to make sense of the humps and bumps you can feel beneath your feet, you cannot necessarily see so well because of the undergrowth: the colours in front of you are a variety of greens and browns, with a dappling of shade and sunlight which alter with changing patterns of shade and sunlight. But in prehistory, when some of these banks were constructed, they would have been dug from the chalk and therefore a dazzling white. With less tree cover they would have been seen for miles - making an impressive statement to any friend or foe!

Now although LiDAR is the great archaeological detector, even it has its limitations. It doesn't tell you what all this newly discovered archaeology means, how all these banks and ditches fit together. That's where interpretation comes in. And, no surprises here, archaeologists often disagree with one another! So bear that in mind when you read the next few paragraphs.

In the late first century BC, at the very end of the Iron Age, it seems that a tribe called the Atrebates lived in what is now West Sussex. They appear to have traded with people in Gaul, as imports of Roman amphorae, quality ceramic goods and metalwork have been found on various Iron Age sites. Indeed, they may well have been immigrants from Gaul originally. At some point, a sizeable portion of the coastal plain, from Bosham to Arundel, was bounded by large banks and deep ditches. In the west these ditches are now called the Chichester Entrenchments or Dykes. In the east the War Dyke was probably part of the same system.

Why such demarcation? That's a very important question because if we knew the definitive answer we would understand a lot more about the local politics, land management and social organisation of this area in the decades before the Roman annexation in AD 43. There are, as so often in archaeology, competing theories, but little in the way of proof. In addition there are a few surviving references from classical authors such as Julius Caesar, but often those references too are ambiguous and open to different interpretations.

Basically there seem to be two fundamental theories suggestions about the Dykes. One is that we see them as defending a core area for the Atrebates, who may have been under pressure from a neighbouring tribe to the north. The other is that the Atrebates had granted, or were forced to grant, an area of their coastal plain as an enclave for traders from Roman Gaul. (This might have been very loosely analogous to the position of the British in Hong Kong). The purpose of the enclave was that the Atrebates could exercise some surveillance over the activities of the traders, and also monitor, and perhaps limit, the flow of exotic goods beyond the Dykes and into the hinterland.

A similar situation may have occurred in Essex around Colchester, home of the Trinovantes tribe. There, you can find similar the same extensive ditch or dyke systems and the same evidence of trade with the continent. Also apparent are continental behaviours such as drinking importing wine, using olive oil, dining off fine ceramics, and wearing Roman-style brooches. So it appears people in both these regions may had some familiarity with Roman lifestyles well before the formal Roman annexation.

LiDAR is such a marvellous archaeological detector. As the key component of the Secrets of the High Woods Project, it has helped us to see beneath the trees; it has helped us understand how all these seemingly isolated humps, banks and ditches form a more coherent whole; and excavation has enabled us to confirm some of these discoveries, and to begin thinking about possible interpretations. I suspect that these investigations on the ground, and the lively arguments about what it all means, will go on for at least another century - probably longer.

Picture credits

(1) Curwen's earthwork survey of Goblestubbs Copse SAC vol 69, 1928
(2) Courtesy of SDNPA/A Purkiss

(3) Courtesy of Fugro/SDNPA

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