Lead bale sites in Nidderdale

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ABSTRACT: Five lead smelting sites have been located in Nidderdale, Yorkshire and residues from them examined. In addition, several other possible sites have been identified from place names. Nidderdale is unusual in that early mining was controlled by monasteries and the records of one, Fountains Abbey, contain considerable information on the medieval lead industry. The sites are located near woodland and on routes which are determined by the positions of river crossings and monastic granges which would have served as staging posts or administrative centres. There are references in the Fountains records of the use of a furnace for smelting lead and it is possible that this took place at a smelting site at Dacre Banks. The relative paucity of smelting residues at the Nidderdale sites has been attributed to the mineralogical composition of the ores which led to minimal incorporation of silica into the slags, the instability of roasted calcite slags with regard to weathering and the fertility of the soil which would have promoted rapid regeneration. Many of the place name sites are on private land where access is relatively difficult.

Introduction

A considerable amount of work has been published on the identification of lead-smelting bale sites in North Yorkshire, with over 50 sites reported. Although there is very little historical documentary matter available on these sites, surveys and slag studies have been carried out and an improved understanding of the smelting process is gradually being made (Smith 2005; 2006; Smith and Murphy 2007). In contrast, much less is known of the communities which were engaged in mining and smelting or of the socio-economic structure of the medieval mining industry. Virtually all of the published work on bales in North Yorkshire concerns Swaledale (Murphy and Baldwin 2001; Smith and Murphy 2003) and, to a much lesser extent, Wensleydale. Apart from a few place names, little is known of bale-smelting sites in neighbouring areas such as Wharfedale or Nidderdale. Despite this, there are more extensive documentary records available for Nidderdale, many from monastic sources. It seems appropriate, therefore, that these areas should receive more attention with the aim of utilising technical, archaeological and historical approaches.

The authors have carried out many field-walking searches for sites in Wharfedale and Nidderdale. Grassington and Coniston Moors have been explored but with no positive results. Field walking has discovered several sites in Nidderdale; some have been found from place names, others have been passed on from colleagues, others by searching in what were thought to be suitable locations.

Historical background

The main background to the history of Nidderdale is taken from Jennings (1967). The earliest indications of lead mining and smelting are the two lead pigs discovered in a hole in the ground on Heyshaw Bank in 1735 having the inscription: IMP. CAES. DOMITIANO AVG. COS. VII (Imperator Caesare Domitian Auguti Consule Septimum—Emperor Domitian's seventh term as consul, ie 81AD). The word BRIG. is also cast on the side of each pig. One of the pigs was kept at Ripley Castle and the other at the British Museum (Kirkshaw 1735; Raistrick 1930). A third pig was found near Russey Knott and had an inscription indicating the name of the emperor Trajan ie 91–117AD (Lucas 1885). This pig has since been lost (Raistrick and Jennings 1965).