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WREN'S NEST LIMESTONE MINES
LEVEL 1 SURVEY

ARCHAEOLOGICAL SURVEY REPORT

David Field, Graham Brown and Damian Grady

ARCHAEOLOGICAL
SURVEY AND INVESTIGATION

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SUMMARY

Level 1 archaeological investigation of a limestone extraction complex at Wren's Nest, Dudley, located and identified a number of features of potential archaeological interest associated with limestone extraction or land-use prior to it and demonstrated the need for more detailed survey work. The site is of geological importance and incorporates the location of Abraham Darby I's birthplace. Limestone extraction commenced at some point during the 17th century and continued through into the 20th.

CONTRIBUTORS

David Field and Graham Brown carried out the ground investigation while Damian Grady carried out the aerial reconnaisance. The report was written by David Field

ACKNOWLEDGEMENTS

Thanks to John Hemingway, Archaeological Officer at Dudley Metropolitan Borough Council for his kind assistance and encouragement

ARCHIVE LOCATION

National Monuments Record

DATE OF SURVEY

Spring 2008

CONTACT DETAILS

David Field
English Heritage
Kemble Drive
Swindon
Wiltshire SN2 2GZ

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Cover image: Part of Wren's Nest showing remains of limestone quarry with areas containing fossil coral and ripple beds in the foreground with Dudley College.

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INTRODUCTION

The Wren's Nest is one of three adjacent outlying limestone promontories of a ridge that overlook the Coal Measures at Dudley, West Midlands. The limestone at these locations has been extensively extracted in the past and this activity formed a significant component of the social landscape during the 18th and 19th centuries which, along with other extractive industries, dramatically changed the configuration of the local topography. While the landscape at Hurst Hill, the northernmost exposure has been largely redeveloped for housing and Dudley Castle, a zoo and other buildings occupy the south-eastern site, Wren's Nest, where working was finally abandoned in 1945, remains as open ground and it is the latter that is the subject of this report.

The present survey was undertaken by the English Heritage Archaeological Survey and Investigation team at the request of English Heritage West Midlands Region in conjunction with Dudley Metropolitan Borough Council's Directorate of the Urban Environment. The aim of the survey was to locate key surface elements of the industrial complex in order to contribute to management planning and public interpretation as outlined in the Project design for the project (Bowden 2007). The survey was defined as appropriate to Level 1, that is, recording of detail that is appropriate to 1:10,000 scale, or effectively, location spots on maps.

The site is located at NGR SO 9415 9170 in the village of Woodsetton (*Fig 1*), formerly part of Sedgley, but it is now in the civil parish of Dudley, in the District of Dudley, in the West Midlands and includes the remains of quarries, mines, caverns and lime kilns. Beneath the hill are parts of an associated subterranean canal transport system. The National Monument Record Number is SO 99 SW 55, Scheduled Monument (National Number) 35127 and there are 45 Dudley Council Sites and Monument Record entries pertaining to the site. In addition, the importance of the site to the study of geology has been recognised in it being declared a National Nature Reserve by the Nature Conservancy Council and in 1998 it was submitted for inclusion as a UNESCO World Heritage Site.

The manor of Sedgley formerly included a number of small hamlets, of which Woodsetton was just one. Kelly's Directory for 1896 suggested that 'for local purposes' the civil parish was divided into two, the 'Upper' and 'Lower' side, or Sedgley and Coseley, the latter incorporating Woodsetton that was then said to be a scattered hamlet occupied by farmers, fire-iron makers etc and was on the 'Lower side' in White's Directory of 1834. The manor also incorporated Dudley Castle which appears to have been built at the very limit of Sedgley parish rather than in Dudley, thus ensuring a certain amount of confusion in historical documents. In more recent times the boundary has been placed between Wren's Nest Hill and Dudley Castle Hill and while the former lies within Staffordshire the latter is in Worcestershire.

The geology of the limestone featured prominently in Murchison's *The Silurian System* (1839) while the history of the mines has been comprehensively studied and reported on by Powell (1999) in his *The Limestone Mines of Dudley*. The origins of the quarrying in the vicinity are thought to date from at least the 12th century when limestone for St James' Priory nearby was quarried from one of the local exposures.

The site covers an area some 1.3km long by almost 0.5km wide and reaches a height of 235m OD towards the southwest. Today it is bisected by a road that links the housing estates of Gornall and Parkes Hall in the west with those around the Priory in the east and serves the Dudley College which is situated on the central plateau. The northern part of the site is referred to as Mons Hill, a derivation of Mount Hill shown on some early maps, while the area to the south of the road was termed Wrens Nest. In popular use the name now serves to cover both areas.

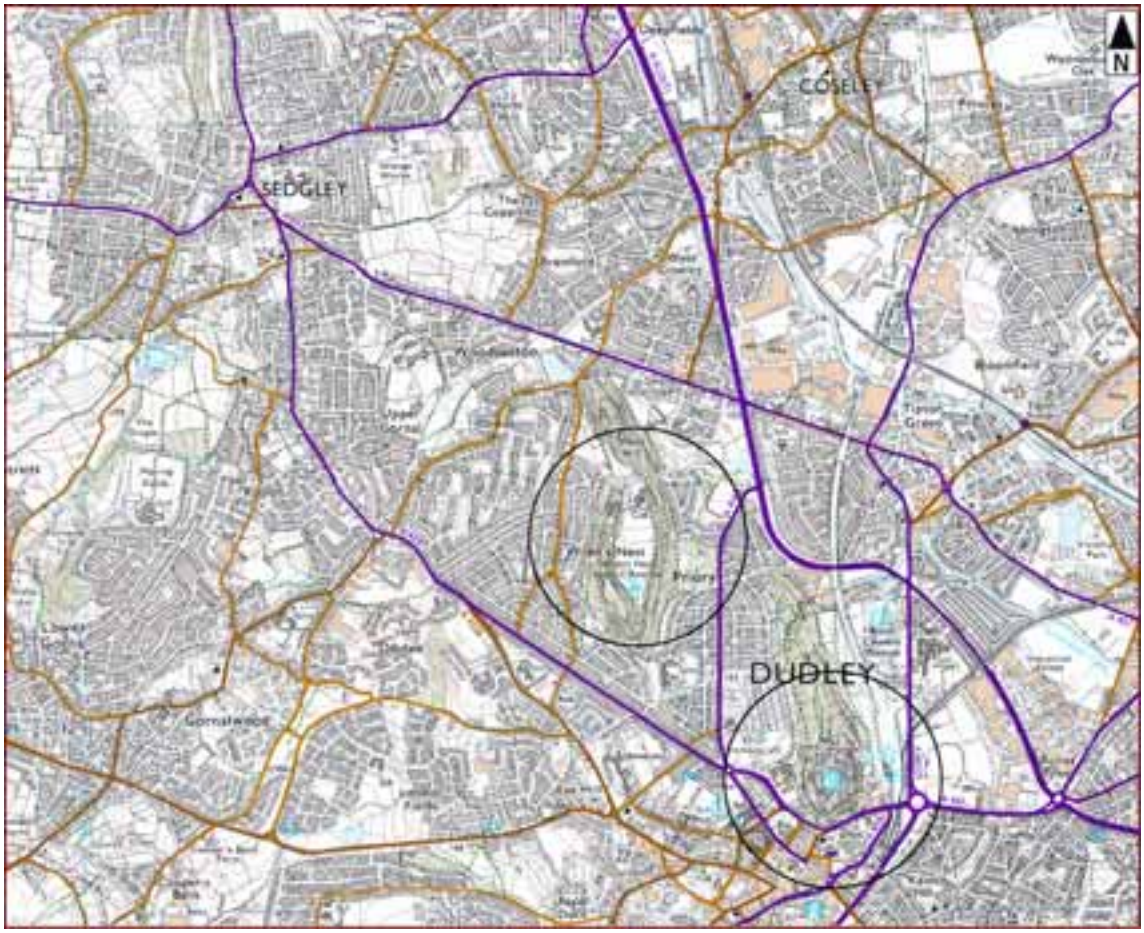

Figure 1 *Map showing location of Sedgley, with Wren's Nest and Castle Hill, Dudley (both circled). © Crown Copyright. All rights reserved. English Heritage 100019088. 2008.*

GEOLOGY AND LANDFORMS

Three prominent hills at the south Staffordshire border, Sedgley Beacon, Wren's Nest and Castle Hill, survive as isolated islands of Silurian deposits among the local low-lying deposits of Coal Measures. They comprise parallel outcrops of Much Wenlock Limestone, here known as the Dudley Limestone, that have been forced almost vertical by folding and faulting to form steep-sided ridges. The limestone has been forced upwards in a dome and dislocated by faults and weathering to reveal a shale core. Thus the hill is flanked by erect limestone strata that appear to have been more resistant to the Pleistocene glaciers than the surrounding softer deposits (***Figs 2, 3 & 4***).

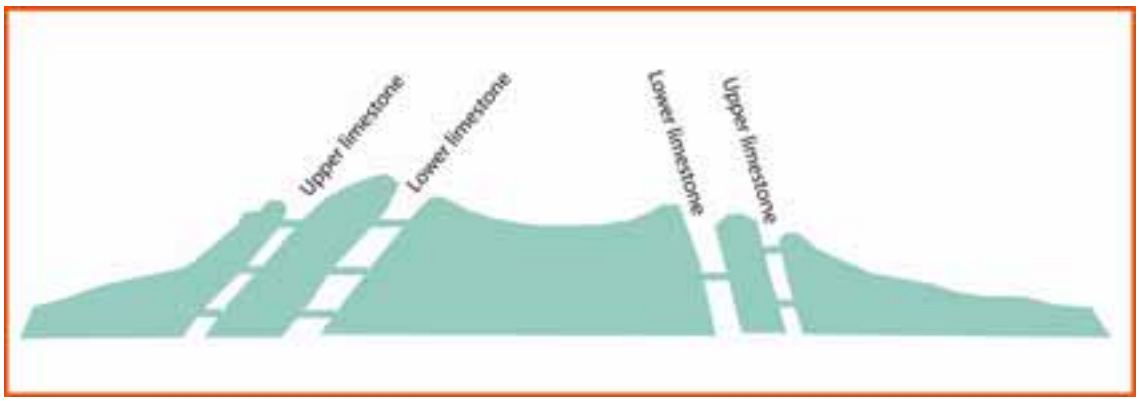

Figure 2 Diagrammatic cross-section through the Wren's Nest, west to east, based on an illustration by Murchison (1839), showing the inclination of the Upper and Lower limestone beds.

The limestone strata here occur in two main bands, the Upper, which is some 3.5m to 10m thick, and the Lower Limestone which is 10m to 12m thick, separated by an intervening Nodular group of between 27m and 37m in thickness, while amongst the bedded limestones and shale are unstratified reef limestones known locally as crog-balls (Edmunds & Oakley 1958, 19: Hamblin *et al* 1978: Murchison 1839, 480-6).

The exposures of this material at Wren's Nest were visited by Sir Roderick Murchison during his studies of the early geological deposits in Wales and the Marches and he used the site to support his theories about a Silurian system. In places, well-preserved fossil sand ripples occur testifying to the marine event in which the rocks were formed (***Fig 5***). In fact, fossils are abundant and had been noticed as early as 1686 by Dr Plot who mentioned their presence in his *Natural History of Staffordshire.* Some of the layers are thick with coral (***Fig 6***), brachiopods and bryozoa, particularly crinoids and trilobites (Gibson 1908: Hamblin *et al* 1978), the latter being so abundant that they have been termed the Dudley Bug and feature in the local museum and on the geological trail around the site.

Figure 3 *A remnant of the almost vertical Much Wenlock limestone at Wren's Nest. Subtle traces of a thin almost vertical seam can be seen at the surface extending from the bottom of the picture to the figure in the middle distance.*

Figure 4 *Quarried deposits of Much Wenlock limestone showing the angle of dip.*

Figure 5 *Preserved section of Much Wenlock limestone showing fossilised sand ripples. It may be that the original face of the hillside appeared something like this.*

Figure 6 *Corals and other fossils in situ.*

The deposits around the base of the hill are mostly Coal Measures which, to the north-east of the site were extensively mined during the 19th century and before, although early maps depict the area as a pre-enclosure agricultural landscape. This was still largely the case in the early 19th century and the schedule accompanying the Map of the Parish of Sedgley in the County of Stafford (Dudley Archives 898A and Schedule 139 DE/IV/2/2) for example, describes much of the land around the base of the hill as well as that on the plateau as arable.

LANDSCAPE HISTORY

The place-name is curious and can be traced back to the middle years of the16th century when *Wrennesnest* appears in documents. Formerly the place was known as Wrosne (1248), Wrosene (1291) and similar variations which is thought to have derived from OE wras(e)n meaning 'a band or tie, chain or fetter'. One possibility suggested by Horovitz (2005, 529) is that this was a reference to the local topography and referred to the irregularities on the hill left by ancient quarrying. If so this might imply that the stone was extracted for building purposes at a very early date, although the only known local large scale construction projects were at the nearby Priory of St James and Dudley Castle. However, Horovitz (ibid) also indicates that places with this element in the name are frequently associated with ancient earthworks and it is by no means inconceivable that the Wren's Nest contained a prehistoric or early medieval enclosure.

Sedgley was a considerable holding at Domesday evidently comprising two distinct settlements. One with 45 villagers, 2 smallholders and 3 slaves, unusually with a priest, along with enough cultivable land to be taxed on 18 ploughs and it was evidently relatively prosperous as its value had recovered to equal the pre-1066 rates. A second, smaller, holding comprised 9 villagers with a single plough. Neither of these entries mentions quarrying, although there was a considerable amount of woodland, 2 leagues long by 1 league wide, some of which was claimed by the priests of Wolverhampton (Morris 1976). In contrast, Dudley, which like Sedgley was held by William son of Ansculf, comprised a single hide. There was just one plough; three villagers, 10 smallholders, two slaves and a smith who, rather strangely in such a small holding, had 10 ploughs (Thorne & Thorne 1982). Such an occurrence is unusual in Domesday entries and appears to suggest that something significant in the early development of the area remained unrecorded. Sedgley was recorded as being in Seisdon Hundred in contrast to Dudley, which was in an outlying part of Clent Hundred.

The Cluniac Priory of St James was constructed close to the Sedgley boundary, in the valley between Wren's Nest Hill and Castle Hill, during the middle years of the 12thcentury (Willis-Bund & Page 1906, 158-9) and evidently before the year 1161 (Dugdale 1825, 82), but whether the stone came from Castle Hill or Wren's Nest is unclear. While allowing the monks to utilise the desmesne pastures and forests for their cattle and pigs and for the collection of wood, the founder of the Priory, the lord of the manor, Gervase Pagnell, did not allow the monks to utilise the resources of the park. This implies a very early existence of the park and is of particular interest given that early mapping depicts Wren's Nest Hill as being within the Old Park.

Not surprisingly the documents add confusion. An extent of the Manor of Sedgley in the reign of Edward I (*c*1272) mentioned the 'park of Duddeley' (Underhill 1941, 36) along with ' a certain wood two miles in length and half a mile in breadth that was kept as a haye 'when the lord can keep it in defence' (ibid 38). Three years later, in 1275 the owner of the manor, Roger de Somery II is mentioned as having free chase in the Haye of Sedgley (ibid 39). A later extent of the manor of Sedgley in 1291 recorded two parks 'the park of Duddeleye' and 'the park of Olynge..' (ibid, 44). Whether the latter was the 'haye' is not clear. Neither is it clear which of the two ultimately became the 'Old Park', the

outline of which is present on 19th century mapping. There are several other references to parks in the vicinity which could refer to either of these or additional sites. 'Eltyngesbad Park' is mentioned as part of Sedgley manor (ibid, 46), while there was a 'Yorke park' during the 15th century. (Underhill 1914, 46: Willis-Bund 1913, 91). One of these may have been situated to the southwest between the town and Pensnett (Willis-Bund 1913, 100).

In 1554 along with other lands 'the park called the Old Park of Dudley' was restored to Edward, Lord Dudley, while a further park '…the park called the conygre' is mentioned for the first time (Underhill 1941, 84). This was thought to be attached to the castle (e.g. Hemingway 2006) but within it according to Willis-Bund (1913, 100) lay a lodge or building referred to as the *Wrennesnest*.. Whether it coincided or has been confused with the original Old Park is not clear. Shirley (1867, 180) mentions an ancient park at Sedgley, belonging to the ancestors of Lord Dudley that was once referred to as 'a large goodly park' and that there was a second at Dudley Castle 'belonging to the same nobleman.'

However, early maps depict the Old Park with Wren's Nest Hill located centrally within it. The field boundaries suggest that the entrance to the park is in the northwest corner where the field layout indicates irregularity of topography, rather than in the east where it would provide easy access to the castle. Trackways from this entrance lead south-eastwards crossing the ridge-top then along the lip of the eastern slope and to a farm in the southern summit. This was depicted on a series of maps as comprising two building with outbuildings in 1840 (Dudley Archives A533). The farm itself comprised four fields that occupied the southern part of the plateau, all arable in 1826 (Dudley Archives 898A and Schedule 139). The slopes around the southern part of the hill are shown as clad in woodland. A less formal route-way approached the hill from the east passing a building (potentially Abraham Darby's house; see below p10), the route then cutting across the summit as a precursor to the modern road. A third route approached the hill from the southwest but is not mapped beyond the base of the hill.

Extraction in Sedgley Manor is first mentioned in an extent c1272 which refers to four coal pits (Underhill 1941, 36) and in addition to 'the mines of sea coal'. Twenty years later an extent recorded the presence of 'iron mines'. These may have been bell pits or perhaps surface quarries as the term 'mine' had not then taken on a specifically underground connotation (Willis-Bund 1913, 100). It is also worth recalling the unusual Domesday entry of a smith with 10 ploughs at Dudley and considering whether extraction was of even greater antiquity. It is noteworthy, however, that limestone extraction is not mentioned in the 13th century documents, although local diggings might be expected to have supplied the Priory and other local buildings, while according to Johnson (1967, 192, 196) local limestone was certainly used in the re-modelling of the castle in stone, probably in the latter half of the 13th century.

The limestone here may originally have been used as a building stone, but more likely for mortar and for burning into lime and used as fertilizer (Johnson 1967, 192-3). Dr Plot, writing in 1686, was moved to comment on the site and he described and admired the local method of lime burning in a 2m deep rectangular trench. Stone was being extracted at this time from both north of the Castle and from a site in the Old Park (presumably

the Wren's Nest), the increasing consumption probably for use in iron furnaces as the purity of the limestone here allowed it to be used as a flux in the smelting of iron.

A dispute regarding Robert Stanford's lease in 1616 mentions the presence of his "lime works" in the Castle Hill and Conygree' but there is no mention of workings on Wren's Nest Hill. Hemingway (nd) indicates the presence of limeworks on Wrens Nest as early as 1634. Certainly, forty years later, in 1655, 'William Parkhouse' an occupant of the Old Park, was taxed three shillings and fourpence 'for his limeworks' (Underhill 1941, 77) and commercial extraction here was underway.

Initially at least, the geological inclination of the beds ensured an easier method of extraction of the material on Wren's Nest until the surface exposures had been exhausted and it became necessary to remove material from underground. Powell (1999, 4) refers to a Court Leet Record of 1721 that comments on the digging of large trenches 'within the foreign of Dudley', i.e. beyond the borough, that formed large cavities. Presumably this referred to the limestone extraction at Wren's Nest. If this is correct than the exposures had been all but stripped bare in less than a century. By the 1720s the surface exposures had been almost worked out and limestone was being quarried from underground and the great caverns formed (Johnson 1967, 196).

Subterranean extraction of the eastern beds on Mons Hill took place from a mine at the northern end of the hill from 1776 (Powell 1999, 43-6) and a canal constructed to service the workings (depicted on a map of 1803 (Dudley Archives 1006c). A second canal was driven through the hillside at the southern end of Wren's Nest Hill to serve the underground works there in the early 19th century and by 1815 there was a 400 yard long underground link from Wren's Nest West to Wren's Nest East and a 785 yard link from there to Castle Mill Basin (Powell 1999, 4: also Smallshire 2008: Hemingway 2000).

Subterranean extraction of the eastern beds, Wrens Nest East was extensive, and by 1813 'the "Thin bed" had been worked for distances of 352m to the north and 482m to the south of the underground canal basin', while the "Thick Bed" 'excavated for approximate distances of 300 yards [274m] to the north and south'(Powell 1999, 38-43: map in Dudley Archives C501). Further subterranean extraction took place in the field to the east of the hill alongside the line of the canal, but closed in 1886.

There appear to have been two mines at Wrens Nest West, the Singer Mine and The 144 Mine are depicted on a *Plan of Dudley Castle and Wrens Nest showing the workings of the Limestone, October 1837* (Dudley Archives C501), alongside a bank of kilns.

Extraction below ground of the limestone Beds proceeded by means of a series of caverns with pillars, depicted on 1837 map (Dudley Archives C501), left at intervals to support the roof. Sixteen underground stalls were being worked at this time (Raybould 1973, 176).

A bank of eight limekilns is depicted on the western flank of Wrens Nest Hill on maps surveyed between the 1820s and 1840s (Dudley Archives A533; C1397; C501; C898) and other 'limeworks' with two kilns are shown to the south of the hill.

Production at Wren's Nest increased from about 1800 as labour was transferred there (Powell 1999, 7). Extraction was to start at the Dogs Kennel which is depicted to the north of the bisecting road on the western slope of the hill, and proceed in a westerly and easterly direction as far as the White Stable at the southern end of the hill which separated the workings from another occupier; the lime being burnt at the Wren's Nest West site. The Wren's Nest was 'completely honeycombed' by the 1860s (Johnson 1967, 196).

The 1st edition 25" OS map of 1887 depicts the northern part of the site, Mons Hill, as completely covered in 'Old Limestone Pits'. Most of the southern part of the site was also worked out and the fields in the interior used as a rifle range. Not depicted were the sites of two mines present in the 1880s, Wren's Nest East and Wren's Nest West (Johnson 1967, 196). By 1896 there were just 3 surface workers and 13 underground at the Wren's Nest mine. Opencast quarrying of the Nodular Beds resumed on the 'eastern dip' in 1925 and in 1936 on both flanks of the hill, and blasting was still taking place on the Old Park Farm flank in 1937 when concern was expressed by the local council at the manner of explosive charging (Powell 1999, 16-18). Extraction finally ceased in 1945.

Three ponds are consistently shown on early 19th century mapping (Dudley Archives C1092; C1397; A533) close to the location of Dudley College and drains from the fields to the south were depicted as leading into them. Whether they represent earlier quarry activity is not clear.

Old Park Farm Lodge

An Assessment of 1665 for raising taxes to pay for the army and navy listed thirteen occupants of the 'Ould Parke', including 'John Darbyy, alias Jokey', who was presumably an early member of the Darby family (Underhill 1941, 77). Old Park Farm on the eastern fringe of the hill was the family home of John and Ann Darby, farmers, whose son Abraham Darby, born in 1678, left the area for Bristol and subsequently Coalbrookdale, where he established an iron foundry and perfected the technique of smelting iron with coke. His grandson, also Abraham was famously responsible for building the iron bridge there.

The farm is depicted in a *Plan of the Old Park Farm in the Parish of Sedgley 1803 in the County of Stafford* (Dudley Archives 1006c) as a series of buildings served by a road from the east ie from Dudley, the latter the forerunner of Wrens Hill Road. A trackway provided access to the west across the hill and although it is not clear whether this was public it lies approximately on the line of the present roadway. By 1826 the farm was less significant and referred to as Old Park Homestead, then occupied by John Cartwright, (Dudley Archives Schedule 139 for Map 898A) and by 1887 when the first OS 25" map was published only a single building remained.

Archaeological background

Unfortunately, aside from preliminary reconnaissance and assessment by John Hemingway, little or no archaeological work appears to have taken place either on the hill or within the immediate vicinity. There are no recorded finds of archaeological material in local museums and none recorded in the National Monuments Record.

THE SURVEY

The site comprises a number of deep linear trenches and hollows set around the flanks and interior of the hill (*Fig 8*). These are depicted in broad outline on the OS 25" map published in 1887. This survey did not revisit that work, but identified the location of a number of other features within the trenches and on the remnant old land surfaces. Several types of feature were identified. They are listed in the table and depicted as spots on the map (*Fig 9*). The linear trenches extend for considerable distances, that on the east side of Mons Hill can be traced for 0.5km and each is estimated to be about 40m in width, sometimes sheer-sided with almost vertical walls, elsewhere reducing considerably to c6 or 7m wide at the base, although there is much variation. These trenches represent the surface extraction of the inclined seams of limestone to a depth of around 50m or more. There is little evidence of abrasion at the lip of the quarried area and it seems likely that the material was initially extracted in a horizontal manner rather than from points along the surface. Within the linear trenches a number of hollows and rebates exist that may represent variation in the raw material or, perhaps more likely, local phases of working. Leasing out of quarry 'stalls', the areas between the pillars that held up the roof, to individuals was carried out underground in 1798-1807 (Powell 1999, 8) and the same process might have taken place on the surface. In at least one area on the eastern flanks of Mons Hill a hollowed trackway or tramway was observed on the floor of the linear quarry (Points 74-9) and this in turn was cut in to by later quarry operations. Detailed survey of this area might be expected to refine the phasing of the extraction process.

Figure 8 Undulations on the floor of the linear quarry trench

Figure 9 *Plot of surveyed points*

Grid references all SO. Altitude in metres above OD.

No	Easting	Northing	Alt	Feature
1				Site of Abraham Darby's house
2	93797	92222		Trail post 2 (see also point 93)
3	93799	92190	155	Hollow c15m x 5m
4	Ditto		155	
5	93815	92169	162	Quarry face
6	93826	92145	165	Hollow 6m x 4m
7	93829	92128	169	Hollow 7m x 3m
8	93840	92102	175	Hollow7m x 3m
9	93850	92066	183	T-junction rebate
10	93837	92043	179	Hollow 5m x 4m
11	93851	92059	200	Higher floor adjacent to hollow 10
12	93848	92007	186??	Hollow 15m x 4m
13	93849	91996	194	Col 13m between hollows
14	93840	91970	191	Hollow 16m x 4m
15	93852	91962	193	Col 4m between hollows
16	93849	91960	189	Hollow 12m x 5m
17	93849	91902	194	Bottom quarry cut 2m wide
18	93849	91871	196	Terminal 2m wide, 5m to end
19	93847	91856	201	Col and T-junction 3m between hollows
20	93847	91838	199	Terminal 3m wide, 10m to end
21	93843	91809	201	Hollow 3m x 2m
22	93836	91781	210	Col 1m between hollows
23	93831	91769	209	Hollow 5m x 4m
24	93814	91749	221	Col 2m between hollows
25	93811	91723	218	Hollow 10m x 4m
26	93805	91701	221	Hollow 8m x 6m
27	93795	91665	221	Bottom linear quarry cut 7m between sides
28	93792	91620	219	Rebate 14m between quarry sides
29	93787	91590	219	Quarry floor broadens to 13m wide
30	93779	91510	217	Quarry floor before steps 20m wide
31	93748	91450	215	Terminal
32	93734	91448	215	Geology trail post 7
33	93649	91472	212	Hollow 6m x 5m
34	93625	91485	212	Hollow 4m x 3m
35	93614	91499	215	Quarry terminal 10m to squared end
36	93606	91532	223	Above terminal near fence
37	93544	91598	222	Geology trail post 6
38	93547	91609	221	To face. Face curves 16m from post
39	93522	91760	225	Limekilns
40	93570	92018	212	Geology trail post 4
41	93594	92005	209	Burnt area, rebate 30m x 15m, steps
42	93605	92036	207	Quarried area
43	93621	92065	198	Hole 10m x 6m

44	93622	92116	202	Hole 6m x 2m
45	93597	92462	195	Linear quarry 2m wide, 10m to terminal
46	93547	92453	189	Hollow 10m x 4m within linear quarry
47	93541	92479	185	Linear quarry 2m wide, impenetrable
48	93508	92536	185	Hollow way 1m wide
49	93505	92556	184	Hollow way
50	93503	92569	182	Hollow way
51	93494	92586	179	Hollow way
52	93525	92583	185	Hollow way 2 cut by quarry
53	93510	92582	184	Hollow way 2 cut by quarry
54	93537	92590	186	Top of quarry cutting hollow way
55	93541	92595	187	Ditto
56	93545	92597	186	Ditto
57	93543	92607	187	Ditto 15m to bottom
58	93544	92611	187	Ditto
59	93549	92623	188	Top of quarry face
60	93545	92629	187	Ditto
61	93540	92643	186	Ditto
62	93545	92652	186	Ditto
63	93606	92677	170	Pond edge, pond c15m wide
64	93636	92630	170	Pond edge and lime pye
65	93647	92617	173	Hollow 4m x 3m
66	93654	92610	173	Hollow 14m x 3m
67	93655	92595	176	Col between hollows
68	93667	92588	173	Hollow 7m x 2m
69	93661	92564	180	Top of 68
70	93681	92547	180	Hollow 7m x 6m
71	93680	92533	179	Top quarry face
72	93687	92515	179	Ditto
73	93685	92491	179	Ditto 5m to bottom
74	93697	92487	179	Hollow way 11m wide leading into pit
75	93711	92478	184	Hollow way
76	93772	92431	184	Hollow way
77	93781	92426	184	Hollow way
78	93772	92431	184	Hollow way
79	93781	92426	184	Hollow way
80	93783	92417	183	Pit 3m across
81	93818	92378	184	Pit bottom 10m across
82	93815	92390	185	Pit 4m across adjacent to 81
83	93833	92377	191	Top pit
84	93804	92346	189	Ditto
85	93796	92330	190	Ditto, bottom 15m long x 2m wide
86	93821	92315	188	Pit bottom 2m across.
87	93827	92306	186	Rebate
88	Ditto			
89	93834	92310	186	Ditto
90	93833	92306	186	Ditto

91	93827	92292	186	Ditto
92	93831	92288	187	Geology trail post 1
93	93833	92229	199	Geological trench 2.5m wide, other end at point 2
94	93843	92128	210	Earthworks on cliff top here c10m wide = fragment of former ground surface
95	93833	92150	210	Ditto. Holloway c1.5m deep x 4m wide at top. Transverse to cliff.
96	93843	92158	208	Ditto. Hollow way bifurcates to S. Two further trackways + scoops and other undulations with well weathered profiles.
97	93806	92247	204	Hollow ways on central ridge alongside modern road, presumably precursor, close to Darby's house but opposite side of road.
98	93814	92087	205	Quarry cutting branching off from main linear quarry. Base 2m wide
99	93817	92069	205	Ditto 0.5 to terminal
100	93828	92045	206	Ditto 98, 99 main linear trench cuts it to lower level and is presumably later.
101	93823	92001	212	Hedge line and track/hollow way
102	93818	91977	212	Bank alongside 101. Both oriented 290°
103	93813	91863	216	Linear quarry trench cuts into track way
104	93813	91828	217	Hollow way etc re-appears.
105	93778	91737	222	Hollow way c1m wide at base
106	93757	91591	221	Wall from ?farm cuts across hollow way and farm ?garden appears to overlie it.
107	93755	91594	222	Corner wall of building
108	93730	91620	224	Stone wall
109	93737	91615	224	Ditto. Farm appears to have at least two phases.
110	93718	91506	219	Hollow at Murchison's view
111	93724	91499	219	Ditto. 0.5 wide at base, c 4m wide at top
112	93620	91802	222	Hedgerow
113	93614	91834	221	Ditto
114	93617	91912	217	Ditto
115	93574	91880	222	??test pits
116	93591	91825	217	Pit/hollow with trench base 4m across.
117	93590	91852	211	Pit/hollow in trench base 7m x 2m
118	93588	91877	212	Pit/hollow in trench, base 2m across.
119	93597	91886	211	Base of pit 15m x 2m almost rectangular
120	93596	91910	213	Base of hollow 5m x 2m crescentic.
121	93650	92050	208	Cont from 114 interrupted by quarries, cut by school boundary.
122	93657	92441	212	Fence
123	93653	92469	208	Ditto
124	93627	92538	191	Pit, base 5m x 1m

125	93620	92513	193	Pit, base 1m across
126	93639	92506		Pit, crescentic 8m x 2m at base
127	93624	92472	196	Large pit, base 20m x 15m with several large blocks of limestone lying around.
128	93608	92545	200	Hollow way 1m wide at base and 5m at top, cut by quarries and merges with spoil heaps
129	93613	92528	199	Ditto. Orientation 265°
130	93534	92620	187	Hollow way, base 1m wide, top 8m wide, 2m deep
131	93537	92617	190	Ditto, interrupted by causeway for path.
132	93546	92624	192	Ditto 12m wide
133	93560	92615	191	Ditto. 8m wide. Immediately adjacent to one side of a square platform measuring 4m x 4m and 0.5m high. Opposite is a rectangular platform, 6m x 3m, cut into the slope.
134	93575	92602	190	Track bells out to 10m across and then reduces.
135	93592	92568	191	End of track at circumference of base of large pit 20m across
136	93491	92676	175	Hardened, levelleved path or tramway into quarry.
137	92482	92702	177	Ditto, 1.5m wide. Lots of bricks. Access to quarry not from Dudley.
138	93612	92676		Pond 15m x 5m
139	93530	92567	192	Base of hollow 8m x 5m should join to point 47
140	93588	92430	211	Corner of hedgerow slight track on outer side
141	93637	92393	219	Fragment of earthen bank
142	93637	92390	221	Ditto. Fragment 12m long, 5m high and 3m wide at angle on cliff top. Cut at either end by deep quarries.
143	93632	92373	217	Fragment of hollow way
144	93645	92362	217	Ditto. 3m wide at top, 1m at base and 1.5m deep. Ascending scarp. Another fragment nearby, linked to terrace with large scarp below.
145	93680	92337	219	Ditto
146	93767	92278	212	Terminal of deep linear quarry with Holloway c 2m wide at the base leading to the road.

Figure 10 *Limekilns*

In the north of the site, that is the area known as Mons Hill, there are a number of very deep circular or oval hollows that occur in the centre and west of the hill and which appear to be the result of a separate mining process, although it is not clear from the present survey whether they were chronologically separated from the linear quarries. One hollow-way that ascends the hillslope in the northwest can be traced into a wide linear trench which in turn leads into one such hollow (Points 128-133). On the trench floor a shallow sub rectangular platform, perhaps some kind of loading bay was noted and on the slope opposite another sub-rectangular feature was cut into the slope. All of this reflects later or a final phase of activity.

A bank of four kilns (*Fig 10*) were recorded at point 39. These correspond to SMR 4956. They are depicted on the OS 25" map of 1883 and labelled "Limeworks" and could represent the site of some of those depicted on maps in the early 19th century.

A number of trackways ascend the northwest slopes. At least one of these leads into a quarry and must be part of the extraction operations. Others, however, appear to lead across the landscape appearing as fragments on the upstanding cliff summits, or 'bavia' as Murchison referred to them, both on Mons Hill and further south. They appear to have provided access to the southeast, either to the Priory or to the town of Dudley.

In the south a number of features related to the farm depicted on 19th century maps were recorded (*Figs 11-13*). Among these were remains of buildings, a cellar and yard walls.

Burnt limestone, probably representing a process similar to that described by Dr Plot, or 'lime pye's', was noted at Point 64 and there are others previously recorded on the site and given SMR numbers.

The 2.5m wide geological trench (Point 93) across the argillaceous limestone was cut in recent times (Hamblin *et al* 1978) linking two quarried areas. The geology trail is the easiest way to circumnavigate the hill and a number of posts that indicate view points were encountered and recorded.

In the northeast a number of quarry hollows were permanently filled with water and retained as ponds. Point numbers 63, 64, 138 refer. These are depicted on 1st edition OS 25" maps.

Figure 11 *Embanked hollow way on edge of linear quarry.*

Figure 12 *Remains of farm building at southern end of the hill*

Figure 13 *Remains of cellar*

AERIAL PHOTOGRAPHY

A single sortee carried out in 18th April 2007 resulted in a series of 25 aerial photographs of the hill, numbered 24598-001 to 025, being added to the National Monuments Record. While these superbly portray the context of the site and its condition as a largely wooded area surrounded by housing, unfortunately a combination of the poor weather conditions and site vegetation ruled out any direct value for survey purposes. The deep trenches and other workings are all but obscured by the tree canopy, while entry points to underground workings are marked by tin sheeting. Only the southern interior occupied by the school with its playing fields, and the area around the preserved ripple beds (see cover illustration) are clearly visible.

Figure 14 Aerial view of Wrens Nest, with Mons Hill to the bottom right, taken from the northeast (NMR 24598-003).

DISCUSSION

The upstanding limestone strata, even if scree and vegetation covered, are likely to have presented an imposing edifice to early inhabitants of the area and likely to have been a striking landmark visible from a good distance. It may be that the fossil plants, strange animals and sand ripples served a mythology about the place that additionally attracted prehistoric activity. Unfortunately, there is no local tradition of the recovery of antiquities and any material noted by the limestone workers is long lost. One interpretation of the place-name, however, hints that earthworks may have been present and given the local topography it would perhaps be surprising if they weren't.

The Old Park was evidently present by/in the middle of the 12th century, an early date for imparkment. It may be this that is also referred to by several authorities as a Haye and could conceivably be Anglo-Saxon in origin (see Hooke 1985 for discussion of hayes and hagas). Curiously, Wren's Nest Hill is placed centrally with respect to the park boundary and if the later park outline reflects the original extent it could represent a Saxon holding centred on the site.

Implications of the place-name aside, there appears to be little evidence for early quarrying, that is, of the Roman or medieval periods. The only pre-industrial period landscape visible is confined to narrow bands of unexcavated surface often little more than 10m in width. These contain fragments of trackways most of which are oriented across the hilltop and are to an extent reflected in the routes and hedgerows of the earliest maps. These fragments, sometimes dangerous to access, are probably the most fragile of the archaeology and provide the remaining opportunity of establishing the nature of the site's pre-quarry activity.

Whether there was trenching for military purposes during the Civil War is unknown, but given that the Wren's Nest provided an advantageous defensive location for military purposes in relation to Dudley Castle and the surrounding countryside, it would be of no surprise if it saw activity at this time. The 'souldyer slaine in the olde park' and buried in the Sedgley churchyard on 4 June 1644 (Underhill 1941, 267) may not have been the only one.

The earliest historical mention of extraction here appears to be in 1634 (Hemingway nd) or perhaps 1655 (Underhill 1941, 77) and it may be that some of the large quarry hollows at the northern extent of Mons Hill were being worked at this time. By 1720, and certainly by 1775, the surface exposures had been largely exhausted and early 19th century maps show that extraction was taking place underground. Most of the surface remains on Mons Hill and the great linear trenches in Wren's Nest East are therefore of the 18th century. The bays often visible as rebates in the quarry sides and depressions in the quarry floor may have represented 'stalls' leased out to local individuals to quarry the stone.

Fields were still being cultivated from the farm at the southern end of the hill in the 19th century and to some degree this may have curtailed surface extraction. The trackway to the farm from the north appears to have limited expansion westwards although in one location it appears to have been cut into by the quarry.

Military

The plateau is depicted on the 1st edition OS 25" of 1887 as being used as a rifle range with options of distance up to 750 yards. The target lay just north of the road at the southern end on Mons Hill using part of the quarry workings as a butt. It may have been run by the local territorials or militia, but in view of the other pursuits taking place on the hill it could have been run for public use. Mons Hill was also occupied during World War II by a heavy anti-aircraft battery (NMR Number SO 99 SW 66) (Dobinson, 1996, 32). No remains of this were identified during the present survey.

Pleasure landscape

There is a further aspect of the site that remains un-investigated, that is, its use for civic recreation. The early maps imply that the old quarries had been planted with trees. The 'Old Quarry' on Mons Hill, for example, was noted as planted with trees on a Schedule accompanying the map of Sedgley of 1826 (Dudley Archives 898A). This could have been a commercial operation, but there is a possibility that it was done to provide a pleasure landscape. The trenches provide natural walks and there is a hint that the pools may have been incorporated. The caverns were certainly used extensively for light shows and music events during the 1800s with very large crowds of people attending. A series of fetes also took place. The general public were well-aware of the geological significance of the site as Sir Roderick Murchison had addressed a crowd of 15,000 people. It is not clear if this was on Castle Hill or at the Wrens Nest; however, the southern promontory known as Murchison's View implies a well-known viewpoint and there may have been a seat or other structure associated with it. Instability of the mine workings is thought to have discouraged such events after 1885 (Powell 1999, 48).

Recommendations.

The site lacks an adequate overall measured and analytical plan of the surface earthworks. Such locations are traditionally used by surveyors to 'lose' errors and consequently it is difficult to 'fit' small pieces of survey into the site as a whole and the site therefore needs its own dedicated plan. The most convenient method of doing this may be by plotting the available LIDAR data with appropriate ground observation to check the detail. It is important that any survey should be undertaken in consultation with geologists and industrial archaeologists in order that the nuances of this type of site are not overlooked.

A review of the historic air photography should be undertaken, in particular the 1940s RAF cover which may depict the site when there was less vegetation. Additionally, it is important that the available documents and maps, of which there may be a considerable number, are collated. The maps, in particular, may be productive and careful regression analysis may depict development of the extraction activities.

METHOD

The deep and narrow cuttings of the limestone a quarrying coupled with vegetation and tree cover made it impossible to obtain accurate readings using conventional survey grade real-time GPS. Equally the nature of the quarries meant that accurate readings with EDM would involve many stations and a considerable amount on time. The Project Design specified Level 1 survey, i.e. 'spots on maps', and this was achieved by using navigation grade Garmin hand held GPS which obtained readings through the tree canopy but using fewer satellites and therefore with much larger error tolerances. The error range here is expected to be in the region of 5m. Vertical errors may be greater.

Measurements to points of detail were taken from the location of the hand held GPS readings using tapes and recorded manually.

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