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Quarrying in the 19\textsuperscript{th} and 20\textsuperscript{th} centuries:
A Case Study of Lilleshall, Shropshire

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This PhD thesis is unique and will create a definitive archaeological record of the quarrying industry of Shropshire within the 19\textsuperscript{th} and 20\textsuperscript{th} centuries. The thesis will investigate all the technological innovations associated with quarrying, beginning with the extraction of limestone and following through all the methods of transport up until the 20\textsuperscript{th} century. The quarrying of minerals was different from any other industry, because the raw materials were remotely located and often very inaccessible. Road access from these locations to villages, towns and cities was very difficult. Britain’s 18\textsuperscript{th} century roads were made in the form of causeways, constructed of stone and rubble and so narrow that only one horse-drawn cart could pass at a time.\textsuperscript{1} Consequently, the development of a better network of roads was essential to the quarrying industry; starting firstly with turnpike roads, then to canals, railways and the roads of today. The network of roads that spread across the country enabled the local and national economies to flourish.\textsuperscript{2}

Shropshire County is unique, and one could suggest not equalled by any other English County, because of its diverse geological formations; being rich in limestone and having within it both minerals from the Silurian and Carboniferous periods.\textsuperscript{3} Lilleshall has two different forms of limestone, white limestone used for flux in blast furnaces and grey limestone used for agriculture, construction, and in lime-mortar. A deed dated 24\textsuperscript{th} December

\begin{itemize}
\item \textsuperscript{1} Parker, et al. 1972.
\item \textsuperscript{2} Gale, et al. 1979.
\item \textsuperscript{3} Murchison 1839; Lapworth et al. 1910; Toghill 2006.
\end{itemize}
1539, shows that Lilleshall Abbey and all its lands were sold to James Leveson (Gower). The family knew of the potential quality of the minerals, but it was not until the 18th century that the limestone industry started to gain in significance. Their initial concerns were to improve the lands; for example the marshy ground at Weald Moors was drained and a causeway built, so allowing general agricultural improvements and thus also laying the way for the extraction of limestone.\(^4\) In the 1750s the Gower family started their venture into the limestone industry, which in 1802 became The Lilleshall Partnership (Company), not ceasing its connections with Shropshire until the 1980s.\(^5\)

The first significant partnership was formed in 1764 between Earl Gower and John and Thomas Gilbert; John was the former steward to the Third Duke of Bridgewater, the pioneer of canal building. The partnership last for more than 30 years until the death of the Gilbert brothers in 1795 and 1798. John Gilbert worked with James Brindley on the construction of the Bridgewater Canal, thus gaining experience in canal building, which would benefit The Gower Company. As the extraction of limestone from numerous quarries on the Lilleshall Estate increased, the need for an improved transport infrastructure was essential. The solution was to construct The Donnington Wood Canal, making it the first canal in east Shropshire.\(^6\)

The construction of the Donnington Wood Canal started in 1765 and was completed in 1767; it connected Pave Lane to Donnington Wood, a distance of 5.5 miles. Thirty men worked on the building of the canal, being paid from 3s 1/2d to 12d per day. The development of the Donnington Wood Canal was to greatly improve the transport and consequent distribution of minerals like coal, ironstone and limestone for Gower’s furnaces. The Donnington Wood Canal was level and fed by streams along the route as well as with water drained from the mines. The main line had a branch canal; however with its levels of 13.05 metres below that of the main Donnington Wood Canal,

\(^5\) Shropshire Archives, Lilleshall Records, 809/6/1, 809/6/4 and 809/6/5 (accessed 05/08/2009); Adams 2007.
building of locks was out of the question because of the levels. To overcome this level problem the branch line was continued through a short tunnel under the ridge. Then two parallel shafts were sunk, 36.58 metres deep and 3.05 metres in diameter, alongside the main canal to the branch tunnel, which allowed cargoes to be lowered up and down in crates with a winch mechanism.\(^7\)

Earl Gower, now approaching his eightieth birthday, handed over control to his son Lord Granville Leveson-Gower, who in 1802 formed the original Lilleshall Partnership, which would later be known as the Lilleshall Company. Lord Gower obtained fifty percent of the shares and the rest was split between John Bishton, John Onion, James Birch and William Philips with Bishton being the other major share holder.\(^8\) However in three or four years the partnership underwent considerable change in the way the company shares were held. The shares owned by James Birch and the Onion family were signed over to John Bishton Senior. After the death of Bishton senior in 1805-6 the shares went to his son John Bishton junior and his brother George. William Horton joined the Lilleshall Partnership in 1813.\(^9\)

The Lilleshall Partnership negotiated a deal to lease the Blackberry Bank limestone beds from the Leeke family; prior to this the mine had already been connected by way of a branch line to their main canal system. Although the partnership tried to redevelop the Blackberry Bank Mines this venture was unsuccessful, because these mines and quarries had been worked out by the end of the 18\(^{th}\) century. Two new shafts were sunk, one being over 37 metres deep, in order to install pumping engines to drain the water from the mines, but these were less successful than expected. This ended the exploration of the Blackberry Bank Mines, which in its time probably produced over a million tons of limestone.\(^10\)

\(^7\) Gale, et al. 1979; Morris 1991.
Pitchcroft Limestone Mine was later established in 1798 to the east of the former mines at Blackberry Bank or north-west of Lilleshall. In its working life The Pitchcroft Mines had seams of lower red, upper grey, lower white and upper white limestone. At this time the Pitchcroft Mine was producing 10,000 tons per year. From the Church Aston and Lilleshall accounts of 1798, it was estimated that the mines would produce in the region of 20,000 tons per year in the following years until its closure in 1860.\textsuperscript{11} Two shafts that were sunk at the Pitchcroft Mine, connected extensive underground galleries; one of the shafts was 137 metres deep. In addition limekilns were built near to the entrances of the shafts which at the time made it easy to get the limestone from one point to another. The Pitchcroft Mines was very productive in its life, but in 1860 the mine flooded, making it too dangerous to exploit.\textsuperscript{12}

There are other quarries called: Colliers Side Quarry, Jackie Parr Hole Quarry, Willmoor Mine and Presthope Quarry, Wenlock Edge. Colliers Side Quarry was considered The Lilleshall Company major workings. The working life of the quarry started in the late 18\textsuperscript{th} century, however an 1882 OS map indicates that the quarry was disused. Colliers Side Quarry consisted of two quarries, the larger one to the northeast of Limekiln Lane and the smaller to the west of Limekiln Lane.\textsuperscript{13} Inclines linked the underground workings at the Colliers Side Quarry to the surface. Extracted waste material was used to form immense embankments that were constructed across the quarry. Into these embankments kilns were constructed, as well as two access tunnels. Tramways were built to run the length of the embankments to transport limestone to the kilns and carry material to the Donnington Wood Canal. In addition three shafts were sunk in different areas to access the mine, ranging from 45 to 75 metres depth.\textsuperscript{14}

The limestone extracted at The Collier’s Side Quarry was mostly of a high quality and therefore primarily for use as fluxing in the growing iron-smelting

\textsuperscript{11} I.B.G.M Trust, Lilleshall Collection, 1998. 320 (DLIL/3) 556a (accessed 05/08/2009); Shropshire Site and Monument Records No: 7158 (accessed 07/08/2009).
\textsuperscript{12} Shropshire Site and Monument Records No: 7158 (accessed 07/08/2009); Adams 2007.
\textsuperscript{13} Adams 2007; Shropshire Site and Monument Records No: n/n (accessed 07/08/2009).
\textsuperscript{14} Adams 2007; Shropshire Site and Monument Records No: n/n (accessed 07/08/2009).
industry. White limestone was quarried extensively from the east of Woodlands, in Lilleshall. There have been a number of subsidences, including more recently in the 1980's on the east side of Collier's Side Quarry, which has been surveyed and backfilled with pea gravel to replace the void left after extraction.\textsuperscript{15}

The Lilleshall Company considered Colliers Side Quarry so important, that in 1810 they built twelve dwellings for their limestone workers. The last occupant left in 1947. The working and living conditions of the workers' families, as well as the welfare and education of their children will be researched. Other buildings on the site were offices, boat workshops, stables and a weighing house.\textsuperscript{16} In the 1830s railways started to take hold and in 1849 The Shrewsbury and Birmingham Railway opened running close to the edge of The Lilleshall Company lands. In 1846 The Shropshire Union Railways and Canal Company opened a further route which went from Stafford to Wellington where it joined the Shrewsbury to Birmingham line. In 1894 a station opened at Donnington. The railway provided a better outlet through which the Lilleshall Company could export its minerals across Britain.\textsuperscript{17}

Lilleshall Village today shows little evidence of the former Collier's Side Quarry, only some markings in the ground. The former quarry is now surrounded by fields and trees. However there are hidden hazards when walking about because all areas have not been surveyed, and there may be subsidence due to rain and snow.

**Bibliography**


\textsuperscript{15} I.B.G.M.L Ove Arup et al, 1987


\textsuperscript{17} Gale, et al. 1979; Adams 2007; Mingay 1997.


