

### **What part did the English Midlands play in the 'Industrial Revolution'?**

The Midlands played a crucial part of the process of English industrialisation in the eighteenth century. Its importance is due to a group of individuals who were based in and around Birmingham, and its geographic location in relation to the rest of English industrial development. There were other prominent figures in the Midlands, such as the Darby dynasty at Ironbridge, however this study will concentrate on developments within Birmingham and the impact of local contemporary thought. In the eighteenth century Birmingham was known as the 'city of a thousand trades', and compared to other industrialised areas such as Lancashire, the Midlands was acknowledged as being a centre of "specialisation" (Hudson, 1992, p122).

The central location of Birmingham made it the hub of the canal network: Turnbull (1987, p544) suggests that to all intents and purposes the Birmingham Canal created an inland port. The canals meant that manufacturers were able to send goods to London more efficiently than using the roads, and that coal and raw materials could be moved around the region more cheaply. Indeed, when the James Brindley's canal from Wolverhampton to Birmingham was opened in 1769, the price of coal in Birmingham was halved (BrindleyPlace.com) as it had been in Manchester when a similar canal was opened (Evans, 1993, p105). The canals also dramatically increased the potential of inland towns close to them, as the greater availability of food and raw materials meant that they were able to "burst through the bounds which transport limitations had previously set" (Rule, 1992, p234). It was for this reason, Josiah Wedgwood was a great proponent of Brindley's work as the canals allowed him to reduce his costs for clay while also providing an improved means to deliver the finished pottery avoiding the frequent breakages that were a result of road transit.

The group of people who had arguably the greatest impact on industrialisation in the Midlands were all members of the Birmingham Lunar Society. The group had its foundations in the 1750s and met regularly to discuss their individual ideas in an informal environment. In an age where London was the centre of

the British Empire and science was predominantly reserved for the academies in major cities the meetings of the Lunar Society were behind some of the key achievements in the Midlands. The members of the group whose work is most clearly visible are Matthew Boulton, James Watt, and Josiah Wedgwood; it has been suggested that they were leading figures in the 'provincial enlightenment' (BBC, 2003).

The collaboration of the entrepreneur Bolton and engineer Watt was one of the most important during the eighteenth century. Watt had improved the efficiency and reliability of the already established Newcomen steam engine by the addition of a separate condenser, however in Glasgow he was unable to find the skilled craftsmen that were required for the precision engineering required, and on his own did not have the means to finance production. Boulton acquired a share in Watt's patents and with his money and the availability of precision manufacturers around Birmingham it was possible to build Watt's steam engine (Ashton, 1972, p56). Although Birmingham's own industries did not need to take advantage of the engine's power, the city was famous for the production of the engine (Berg, 1994, p203), and by 1790 conservative estimates suggest that there were "nearly a thousand Watt engines [...] in use in the British coalmining industry" (Morgan, 1999, p52).

Despite the positive impact of the Watt steam engine on manufacturing, it can be argued that Watt was also responsible for holding back the development of the steam engine. His numerous patents were worded in such a way that people could not produce engines without infringing them. Unsurprisingly Boulton and Watt were ruthless in protecting their rights, and it was only when the patents expired in 1800 that people were free to make new developments to the engine (Peacock, p1).

Wedgwood's work in his pottery was a great achievement for the Midlands; his work exemplifies many of the changes within manufacturing and scientific progress. Wedgwood had no formal scientific background, however he performed many experiments that ultimately resulted in an improved green glaze and the methods of production of Queen's ware and jasper ware (Binks, p1; Ashton, p65).

The production of pottery was a labour intensive process with little scope for mechanisation. To improve the efficiency of the process Wedgwood implemented a system referred to as 'division of labour' as described by Adam Smith. This simply meant that every part of every process was separated out and allocated to different people. This meant that every worker could be trained "in detail", and that he was able to respond to the "growing demand for new shapes, glazes, and clays"; day to day articles were produced by different workers to those producing ornamental items. Such was the extent of this scheme that in 1790 out of the 278 workers at Etruria only five did not have a specific designation (Rule, p153).

Wedgwood was also a strict disciplinarian and the flexible hours of the domestic system were banished and a regular working week was established, with the supervision of the workers by foremen becoming an essential part of it. Morgan (p44) also suggests that Wedgwood pioneered the system of clocking in and out as part of his search for a greater degree of organisation and precision within his factory.

The Lunar Society was an important opportunity for leading figures of the day to come together and discuss topical matters. Although their contributions are not as concrete as Boulton, Watt, and Wedgwood the work of the chemist Joseph Priestly and scientist Erasmus Darwin was part of the ethos of the age. Priestly is often credited with the discovery of oxygen, and did discover photosynthesis, and a method of producing ammonia (Ashton, p63) which was an important part of bleaching in industry. Darwin was an acknowledged philosopher and botanist whose ideas are thought to have contributed to Charles Darwin's theory of evolution.

The Midlands can be seen to have played a wide variety of roles over the period of time often referred to as the Industrial Revolution that affected society on both a local and national scale. The achievements and potential of the age is summarised by Wedgwood when he said about the members of the Lunar Society that they were "living in an age of miracles in which anything could be achieved" (BBC).

(1068 words)

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