WAS THERE A SHROPSHIRE ENLIGHTENMENT?

Barrie Trinder

Individuals with extraordinary talents were active in Shropshire in the late eighteenth century, but were the contacts between them as fruitful as those between the members of the Lunar Society in Birmingham or the Derby Philosophical Society? Can these networks meaningfully be characterised as a Shropshire Enlightenment?

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Coalbrookdale by Night, by Philippe Jacques de Loutherbourg, 1801.

A Meeting of Minds

William Reynolds (1758-1803), the Shropshire ironmaster, described in a letter, probably written in 1782, that he had been walking through Coalbrookdale discussing the Iron Bridge with Erasmus Darwin (1731-1802) and Richard Lovell Edgeworth (1744-1817), and that, as a result of the conversation, a 50 ft long cast iron rib was experimentally broken at the mid-point with a hammer.

This incident involving three contemporary intellectuals exemplifies the ferment of enterprise, curiosity and enlightened thinking that characterised the English Midlands in the late eighteenth century, but it also shows how difficult it is to define cultural networks. The three resided in different places: Reynolds at Ketley, Darwin near Derby and Edgeworth at Edgeworthtown, Co Longford. They did not meet on a regular basis and they also participated in other networks, Darwin and Edgeworth with enthusiasts for coach building, for example, and Reynolds and Darwin with geologists.

A Collective Identity

Interactions between talented individuals involved in manufacturing, service industries and the professions have always produced a certain urban collective identity, expressed by a Nottingham lace manufacturer in 1841 as 'the ideas we have from being congregated together'.

Sometimes cultural networks during the period of the Enlightenment assumed institutional forms, as in the Derby Philosophical Society founded in 1783 (see article by Paul Elliott), the Manchester Literary and Philosophical Society founded in 1791 and the Newcastle Literary and Philosophical Society founded in 1793.

The most celebrated and perhaps the most influential grouping, the Lunar Society, which met from 1766 at Soho House, Birmingham, was a less formal body. Its meetings were described by its host, Matthew Boulton as 'a little philosophical laughing'.

It is difficult to assess the significance, or even to determine the existence, of a similar cultural network in Shropshire, where the celebrated centre of industrial innovation, at Coalbrookdale, stood fifteen miles from the focus of county administration and sociability at Shrewsbury. A number of local individuals might have constituted themselves as the Shropshire *Illuminati* (the enlightened ones), with a register of members and minutes of their discussions. That they did not do so does not diminish the significance of their associations, for there is ample evidence that innovation owed much to contacts between talented individuals who knew each other in varied contexts.

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William Reynolds, by William Hobday, 1796.

William Reynolds and Joseph Plymley

William Reynolds inherited and carried forward the achievements of previous generations of ironmasters. While in his teens he read scientific books by Joseph Priestley (1733-1804), showed his fossil collection to Samuel More (1726-99) of the Society of Arts, and worked confidently with the forty-year-old James Watt (1736-1819) in installing a steam engine at the Ketley Ironworks.

Reynolds grew up in a family already interested in science. His elder cousin Abraham Darby III (1750-1789), builder of the Iron Bridge, experimented with Leyden Jars, and his possessions included microscopes, a *camera obscura*, a pair of Senex's globes, and a library including scientific works by Joseph Priestley and William Pryce's (c.1725-78) *Mineralogia Cornubiensis* (1778). Reynolds reflected to his kinsman William Rathbone (1757-1809) in Liverpool in 1779 on 'times when I might employ myself philosophically', describing conversations in Birmingham with Samuel Galton (1753-1832) and William Withering (1741-1799), who experimented with digitalis, with whom he discussed the origins of fossil coal. In 1781 he informed Rathbone that when in Liverpool he hoped to fill his pocket with fossils or with clay from Africa or sand from America and later told him: 'I hope Chemistry will not fail to spread her attractive charms for thee'.

Reynolds's roles in the family ironworks and in canal building brought him into contact with many leading figures. He collaborated with Thomas Telford (1757-1834) in the construction of the iron aqueduct at Longdon-on-Tern, and with Charles Bage (1751-1822) in planning the iron-framed Ditherington Flax Mill. With Archibald Cochrane, 9th Earl Dundonald (1749-1831), he considered building a large chemical works at Coalport. He collaborated on canals and turnpike roads with the ironmaster John Wilkinson (1728-1808) (see article by Sue Tungate).

Another focus of enlightened thinking in Shropshire was the household of Joseph Plymley (1759-1838) at Longnor Hall. The activities of this landowner and archdeacon are chronicled in the diaries of his sister Katherine Plymley (1758-1829) (see article by Philip Carter).

Joseph Plymley was the author, more strictly the editor, of *A General View of the Agriculture of Shropshire* (1803) whose contributors reflect his interests, which are further illustrated in the writings of his sister.

In 1791 Plymley went to Coalbrookdale with Thomas Clarkson (1760-1846), author of *An Essay on the Slavery and Commerce of the Human Species* (1786), to discuss agitation against slavery with Richard Reynolds, father of William, and with the Rev'd Melville Horne (c.1761- c.1841), vicar of Madeley, who was on the point of departing for Sierra Leone.

William Reynolds and his father had shares in the Sierra Leone Company. In the same year Plymley and his sister visited Josiah Wedgwood (1730-1795) at Etruria where Katherine admired paintings by Wedgwood's contemporaries Sir Joshua Reynolds (1723-1792), George Stubbs (1724-1806) and Joseph Wright (1734-1797).

In 1793 Plymley was in Madeley on church business and had dinner with William Reynolds and William Rathbone. In November he hosted supper at Longnor after a performance in Shrewsbury by Sarah Siddons (1755-1831) at which guests included the philosopher Archibald Alison (1757-1839), and Thomas Telford, newly appointed as 'general agent' for the Ellesmere Canal.

The Influence of Visitors

Cultural movements in particular places are shaped by visitors, as well as by residents – and Shropshire was worth visiting.

The county boasted innovations in the iron industry, which were symbolised in the Iron Bridge opened on New Year's Day 1781 and by the use of iron in the aqueduct at Longdon and Ditherington Flax Mill in Shrewsbury. For a few decades more iron was produced in Shropshire than in any other part of Britain and around 1800 about 200 steam engines were deployed in the Coalbrookdale Coalfield, more than in any other area of comparable size.

Coalbrookdale drew attention both from Britain and overseas, while Shrewsbury, still in 1800 amongst the 30 largest towns in Britain, attracted the most celebrated lecturers. These included: Thomas Clarkson, with platform supporters including Plymley, Reynolds, Robert Darwin and Thomas Eyton, on slavery: Joseph Lancaster (1779-1838) on education; and, on technological topics, John Banks (1740-1805) and John Waltire (c. 1739-1810).

Visitors to Coalbrookdale included the young Joseph (later Sir Joseph) Banks (1743-1820) in 1767, the chemist William Lewis (1714-81) in the following year, and Arthur Young (1741-1820) in 1776. Erasmus Darwin (1731-1802) and Joseph Plymley were regular visitors, and a succession of American Quakers stayed with fellow-Quakers in Coalbrookdale.

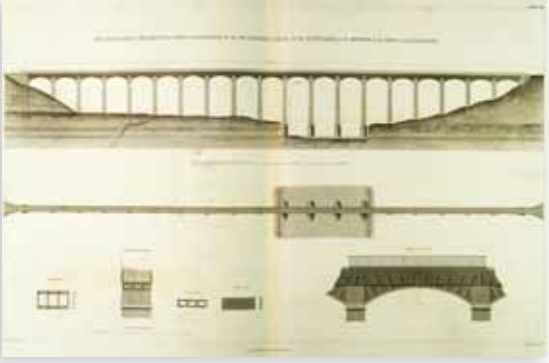
In July 1791 William Reynolds entertained a party of those involved in the Somerset Coal Canal that included William Smith (1769-1839), 'the father of British geology', for whom he provided data that was incorporated into Smith's map of 1815. The scientist Thomas Young (1773-1829), known in his youth as 'Phenomenon Young', was given a tour by William Reynolds of his laboratory, his library and his mineral collection in August 1795 prior to his going to study at Göttingen.

Family and Religious Connections

These individuals also had family and religious contacts that extended beyond the boundaries of Shropshire, exemplified in William Reynolds's close links with the Rathbone family in Liverpool, who were kin, fellow-Quakers and partners in business ventures. Charles Bage, designer of the iron-framed Ditherington Flax Mill, was the son of Robert Bage (1730-1801), novelist, millwright, member of the Derby Philosophical Society, and one-time partner in an ironworks with Erasmus Darwin.

Courtesy of Institution of Civil Engineers

Portrait of Thomas Telford, by Samuel Lane, c. 1822.



The Navigable Aqueduct of Ponty-y-Cyssylte from an *Atlas to the Life of Thomas Telford* (1838).

Courtesy Ironbridge Gorge Museum Trust

Visitors Inspecting the Iron Bridge, by Michael Angelo Rooker, 1781.

Charles Bage's partners in the flax mill, the brothers Thomas and Benjamin Benyon, may have been drawn to commercial co-operation with the fourth partner, Leeds flaxmaster John Marshall (1765-1845), as fellow Unitarians. While in London in 1796 Joseph Plymley discussed agitation against slavery with William Wilberforce (1759-1833) and agricultural improvement with Arthur Young.

Common Interests

What topics brought these talented individuals together? Agricultural improvement was one of Plymley's interests about which he corresponded with national figures including Arthur Young and Sir John Sinclair (1754-1835). William Reynolds, Thomas Telford and Charles Bage were all concerned with understanding structures, particularly iron structures, as was Thomas Eyton. He was a landowner of whom little is known except that he was an active shareholder in the Shrewsbury and Ellesmere canals and suggested the construction of an iron aqueduct at Longdon-on-Tern. Reynolds, Plymley and Telford were all concerned in different ways with improving roads. There was a widespread interest in chemistry, which had applications in industry, in the destructive distillation of coal and in the manufacture of alkali, on both of which Reynolds shared opinions with Lord Dundonald. An interest in geology united most of these individuals. It was of obvious relevance to agricultural improvement and to mining.

William Wilkinson (c.1744-1808) stayed with William Reynolds in 1802 and reported to the younger James Watt (1769-1848) that he was 'very busy in exploring the Bowels of Madeley', while Reynolds himself told Lord Dundonald of 'the good things which we have in this neighbourhood', assuring him that 'we know how to make good use of some of them, and are proceeding to lay the rest under requisition as fast as we can'.

Geological activity stimulated the development of scientific method, particularly the collection, recording and classification of fossils. Reynolds offered rewards to his miners for unusual specimens and hammered ironstone nodules to find traces of plants and animals.

The most powerful unifying force within this group was probably not science but opposition to slavery, which provided contacts with such national figures as Thomas Clarkson and William Wilberforce. There was also a wider political context, an apprehension during the 1790s about the war against France and growing political oppression in England.

Courtesy Shropshire Archives

Photograph of Ditherington Flax Mill from the East showing the Shropshire Canal and bridge in the foreground, c. 1900.

By November 1793 William Reynolds and others were expecting an invasion, and feared that it might be welcomed by their workers. Katherine Plymley was concerned about the growing power of aristocracy and the consequent distress of the lower classes, about sales of Thomas Paine's *The Rights of Man* (1791), and the planting of the 'Tree of Liberty' in many towns. Joseph Plymley initially considered that proclamations against sedition were counter-productive, but by 1798 he considered that the situation had changed, and subscribed towards the Yeomanry.

The Case for Enlightenment

If there was a Shropshire Enlightenment its essential features were a commitment to scientific enquiry, an optimistic view of the consequences of industrial development, investment in canals and a determination to eradicate slavery. If this was in truth a movement, its *animateurs* were almost all men born in the 1750s. The network operated in increasingly pessimistic political circumstances during the 1790s and by 1805 the Shropshire Enlightenment was in decline.

The optimism about the potential of iron structures had been qualified; Reynolds had died in 1802; the social circle of the Plymleys was less distinguished; Bage became more a manufacturer than an innovator; and Telford increasingly worked at a distance from Shropshire.

There was no formal body called the Shropshire *Illuminati*, but nevertheless the contacts made between 1780 and 1805 by those known to Joseph Plymley and William Reynolds proved fruitful, in many fields of science, in technology and more broadly in culture and philanthropy. ●

Barrie Trinder is best-known as a historian of industry in Shropshire (http://www.trinderhistory.co.uk/). His study, *Britain's Industrial Revolution: The Making of a Manufacturing People* will be published by Carnegie Publishing in 2013.

Further Reading

Neil Cossons and Barrie Trinder, *The Iron Bridge: Symbol of the Industrial Revolution* (Phillimore, 2002).
Peter Jones, *Industrial Enlightenment: Science, Technology and Culture in Birmingham and the West Midlands, 1760-1820* (Manchester University Press, 2009).
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Barrie Trinder, ed., *'The Most Extraordinary District in the World': Ironbridge and Coalbrookdale* (Phillimore, 2005).
Barrie Trinder, 'William Reynolds: Polymath – A Biographical Strand through the Industrial Revolution', *Industrial Archaeology Review* 2008;**30**:18-32.