

*The Industrial Archaeology of Radcliffe and the Irwell Gorge*

Radcliffe, a manufacturing town to the north of the Manchester conurbation, lies between the towns of Bolton and Bury and is situated in the valley of the River Irwell at the eastern end of the Irwell Gorge. To the north of Radcliffe is Ainsworth, the northernmost part of the borough of Radcliffe and also its highest point at 825ft above sea level. Radcliffe's topography is moulded on the carboniferous middle coal measures, which have yielded rich seams of coal in the past, while quaternary glaciation left a great deal of clay, sand and gravel. Radcliffe is well represented as regards early history, having a Roman road, a medieval stone tower and the remains of a prehistoric lakeside settlement.

TRANSPORT

Apart from the Roman road through the town, the next most important road ran via Radcliffe Bridge village, from Manchester to Blackburn. It is thought likely



The Irwell Gorge looking west, Lever Bank Bleachworks, in lower right. Line of Bolton-Bury Canal can be seen on other side of valley.

that before the bridge was constructed it was already a popular crossing place, the river being fordable at this point (786069). Not a great deal of information is available about the early roads in the area, although a few remains are still left for the industrial archaeologist to examine. The remains of a horse route, from a ford on the Irwell at Warth Fold and through the old village of Radcliffe, can still be seen close to Crow Trees Farm (789084), and again at Brookbottom Farm (781087) and Hardman's Fold Farm (778089). Occasionally, neighbouring buildings offer some clue, such as the track leading from Scotson Fold farm, an early sixteenth century timber-framed building (777070). At Prestolee, Little Lever and again at Ringley there are fine examples of packhorse bridges. The remains of a route from Outwood to the packhorse bridge at Prestolee is still used by local farmers (767061). In Ainsworth village, part of the borough of Radcliffe, the old coach road from Bury to Bolton can easily be followed along Well Street and then across the fields beyond Delph Lane (763103) and (761103). A horse road leading down from Affetside is today known as Bowstonehill Road and from Ainsworth towards Radcliffe another such road is called Ainsworth Hall Road.

### *Turnpike roads*

By 1754 the turnpike had arrived in Radcliffe, under an Act turnpiking a section from Manchester by Crumpsall to Rochdale, Bury and Radcliffe and Prestwich to Bury and Radcliffe. Other Acts soon followed:

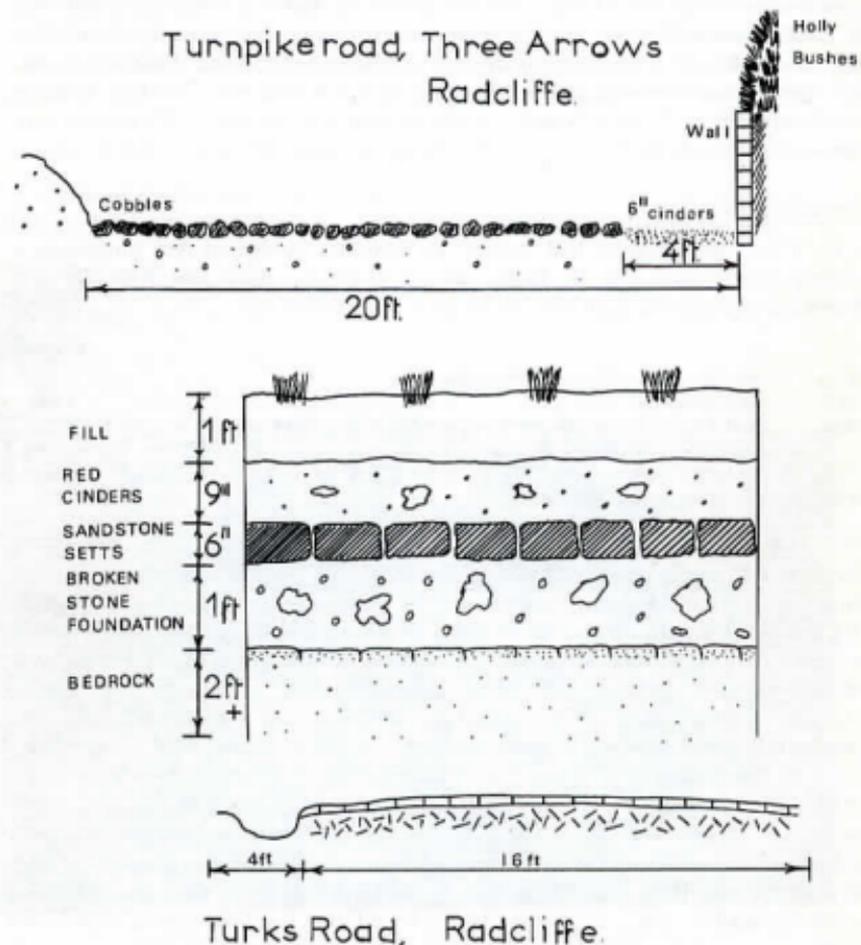
<i>Act</i>		<i>Expired</i>
1821	Bury to Bolton, Stoneclough to Radcliffe	—
1827	Bury new road	1880
1836	Radcliffe to Ainsworth, Starling Lane Radcliffe to Bury and Manchester Road near Fletcher Fold	1876
1857	Radcliffe Bridge to Whitefield via Stand Lane	1880
1865	Short sections in Pilkington	1876

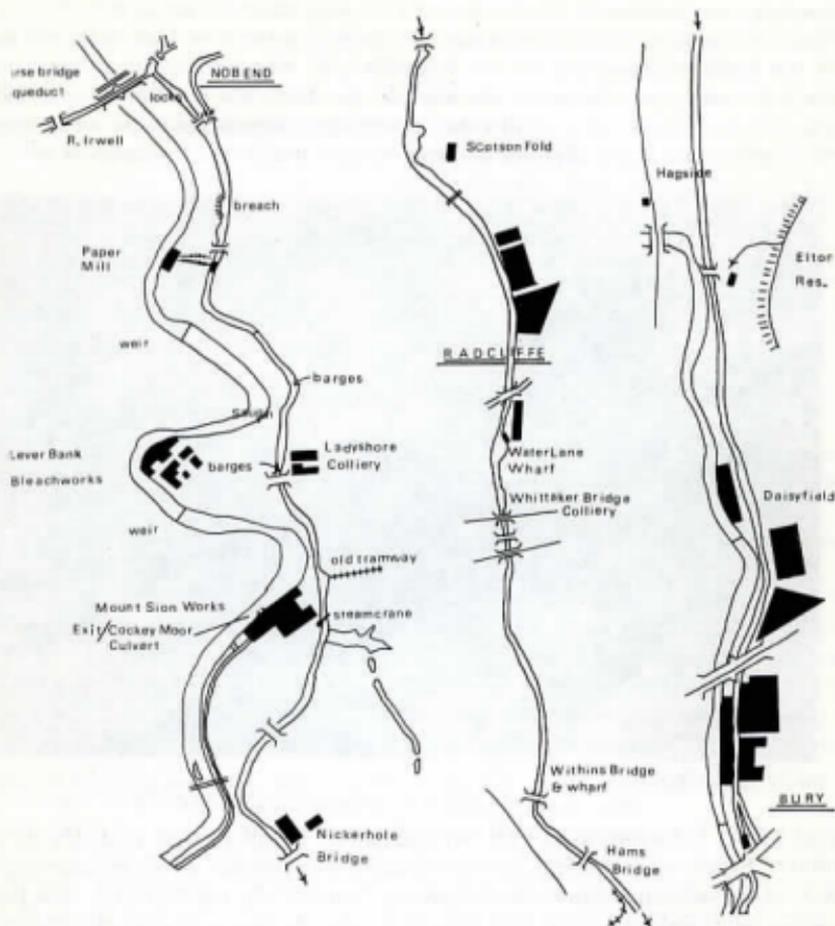
Very few physical remains of the turnpike system still remain, but to the rear of the New Inn public house, Ainsworth Road, the old inn still stands (776087), on the course of the old turnpike. To the north the turnpike road has been obscured, but a little over a quarter of a mile away at Three Arrows (773094) a section of turnpike road lies on private ground. A section of road, situated in a hollow, was taken with the help of a local farmer. At Bradley Fold, a brick-built two-storey turnpike house has miraculously survived (759086), and not far away the old road can be followed for about a quarter of a mile before it joins the present Bury Road at Brightmet (753092). Only two mileposts survive, one on Stand Lane outside the New Jerusalem church (790065) and the other at Starling at the junction with Cockey Moor Road (775104). An interesting section of road, probably built as an access road for local collieries is Moorgate Road (774098). Except for two short sections it is cobbled for its whole length, and where it crosses a small stream a massive sandstone foundation was laid, leaving little room for the water to percolate through. Finally, an interesting stone indicator stands

at the junction of Red Bank Road and Pilkington Road and reads as follows: 'St. TPB AD 1839 270ft' with an arrow pointing west.

*Canals*

The Manchester, Bolton & Bury canal was constructed under an Act of 1791 and amongst the promoters it is easy to recognise the local landowners and factory masters, including Lord Grey de Wilton, Sir John Edenfor Heathcote, William Yates, Robert Peel, Matthew Fletcher, William Hutchinson and Hugh Henshall (brother-in-law to James Brindley). Hugh Henshall, it would seem, carried



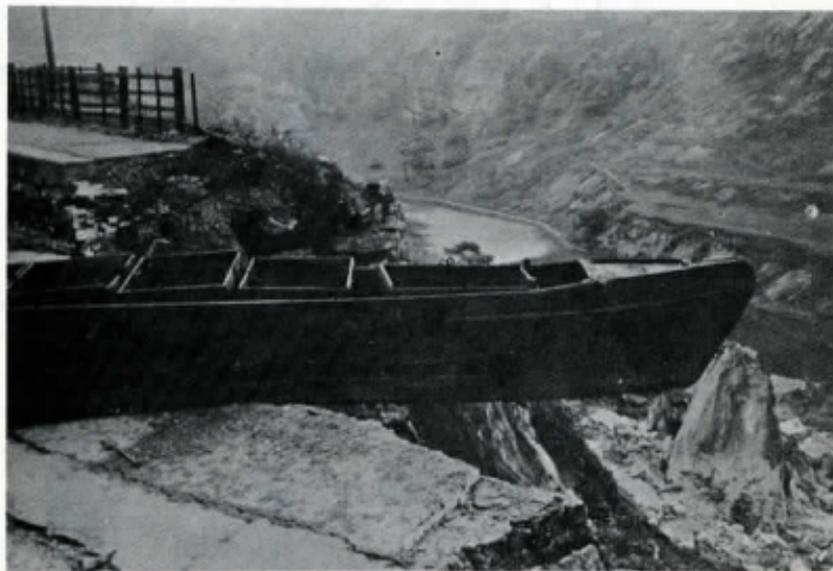


Sketch map showing the course of the Manchester, Bolton & Bury Canal between Little Lever & Bury.

out the original survey for the canal in 1790, and by 1795 the finishing touches to the canal's construction were being made. Originally planned as a narrow canal, it was later widened in anticipation of joining up with other systems. However, this did not happen, although the navigation had a passenger service until 1838. The summit level of the canal between Bury and Bolton was reached by a set of staircase locks at Nob End (752064) from the Manchester section, which crossed the River Irwell on a substantial stone aqueduct (752063).

The navigation was constructed along the steep side of the Irwell Gorge to a point just outside Radcliffe. Massive brick-built support walls were made, and the

towpath was constructed on the dropside to maintain extra strength. But first in 1914 and again in 1936 the canal was breached a few hundred yards from the top of the locks at Nob End, on the Radcliffe side. The breach left a coal barge perched exactly in balance on the edge of the drop; this last breach was never repaired and can be seen to this day. Along the towpath the canal soon comes into water again near Ladyshore Colliery. In the canal there are numerous sunken



Breach on the Manchester, Bolton and Bury Canal, near Little Lever. Breach can still be seen today. Photo Lancashire & Yorkshire Railway 1936.

coal barges belonging to the pit. At Ladyshore, a colliery sunk probably in the 1830's, barges were constructed and repaired. The remains of the massive engine bed of the winding engine and the nearby foundry still testify to the ambitious enterprise of sinking a mine shaft close to a canal. At Mount Sion works (768068) a steam crane (built by Smith & Sons of Rodley near Leeds) lies on the canal bank, and plans are afoot to restore it during the present canal 'clean-up campaign'. White Bridge (771067) is one of the original hand-made brick-built bridges of the 1790's as is the next bridge at Nickerhole (774067). At Scotson Fold there was formerly a large colliery and an extensive basin for the barge traffic was constructed. Not far beyond here the canal reaches the outskirts of Radcliffe, and numerous factories and mills line the banks. At Victoria Street footbridge (779073) there are now few remains of the old brick wharf and the small colliery that once prospered. Beyond the short section of now culverted canal, is the site of the town's wharf, although again few remains are to be seen. At Whittaker bridge, another colliery was sunk next to the canal; all that remains

here is the stone supporting wall. Then the canal proceeds into more rural surroundings and two more original bridges are passed before Bealey's wharf is reached, once an important link with this local bleachworks (791085). On the horizon (790090) is the Elton storage reservoir used to supply the canal with water and two miles beyond lies the terminus in Bury.

An interesting point about this canal is that by 1830 with the coming of the railways a plan was put forward to turn it into the Manchester, Bolton & Bury Canal Navigation & Railway Company. Boundary markers to this effect can still be found around Elton reservoir, although in fact only a small section of the proposed route was actually converted to a railway.

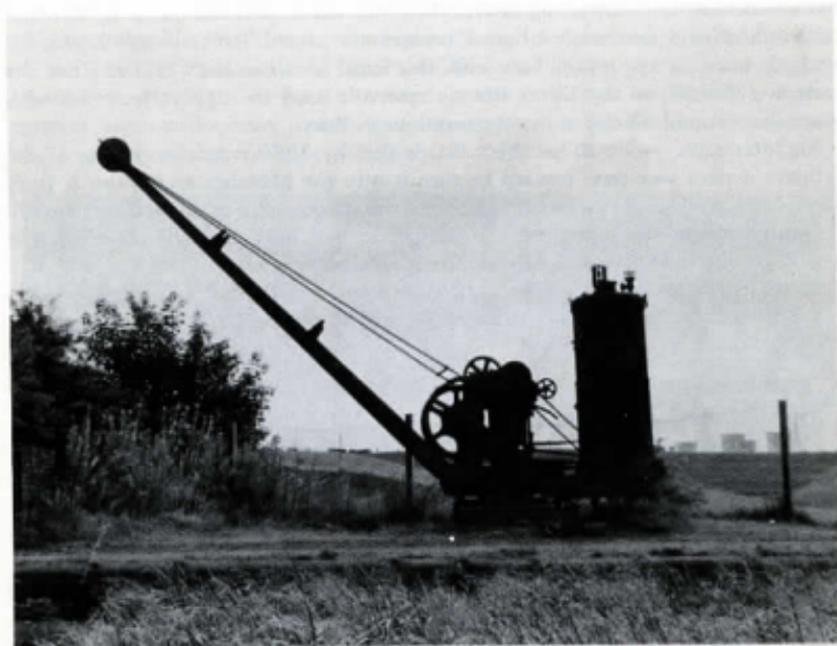
Radcliffe Local History Society, have recently re-floated two narrow boats which were lying full of water at the Bury end of the canal, and towed them back towards Radcliffe. It is planned to use them eventually for educational purposes.

### *Railways*

The railway came to Radcliffe in 1846 when a line was constructed from Clifton junction through Outwood, Radcliffe Bridge to Bury and Rossendale. The railway involved a long deep cutting at Outwood and the construction of a timber viaduct on masonry supports over the Irwell at Radcliffe; this viaduct was replaced in 1881 by one made of iron at a cost of £4,225 (791067).

The Outwood cutting is today partially preserved as a nature trail by Whitefield UDC, and notices have been erected to indicate to the public the path's former origin (775050). The East Lancashire Railway as it became known has several stations between Clifton junction and Rossendale, the main ones being Ringley Road, Outwood, Radcliffe Bridge, Withins Lane and Bury. Beyond Withins the railway crosses the Irwell on an iron bridge with a 100ft span (793091). At the time of writing there is a very old signal cabin of about 1860 controlling the level crossing at Hagside, but this is soon to be demolished.

In 1845, an Act to construct another line from Liverpool to Bury had been obtained, but now this line has been closed and there is little to interest the industrial archaeologist. A line still in everyday use is from Manchester Victoria to Bury via Radcliffe, opened in 1879. The line was at first steam operated (although there had been discussions about the possibility of an atmospheric railway) but was electrified in 1913 when the Lancashire & Yorkshire Railway, in co-operation with Dick Kerr Ltd, put in a third rail pickup system working on 1200 dc. The all-steel units were replaced in 1959 by new British Railways stock, which still run at the present time. The third live rail is protected by a wooden side trough of fire-resistant Jarrah wood. On the line itself the construction of the Whitefield cutting (800063) presented difficulties, and beyond the cutting the line crosses a twelve-arch stone viaduct before Radcliffe Central Station is reached (789071). The station at Radcliffe has been rebuilt, but this was the point where the loop line to the nearby Bolton line commenced, being opened in 1877. The loop line passes beneath Belgrave Street Bridge, properly called Hunt Street



Manchester, Bolton & Bury Canal. Steam crane built by Smith & Sons, Rodley, Leeds, at Mount Zion Works. 1970.

Bridge (784079). This structure is interesting in that it was erected with the obvious intention of building large numbers of houses to the east, but this never came about, and the bridge is now something of a white elephant. A small halt (1918) existed for a time at Ainsworth Road. The cutting between Radcliffe Central and Moss Shaw junction is now on the proposed new SELNEC passenger transport authority's commuter route. Since the closure of the line, however, the cutting has been filled to the brim with the town's rubbish and it would appear that excavation is now the only realistic solution.

#### *Tramways*

Some time after 1855, A.C. Bealey Ltd of Radcliffe constructed a tramway from their works on Dumers Lane (797078) to the canal near Withins. It is possible that this narrow gauge line was at first worked by horses but later by a small steam locomotive. A brick-lined tunnel runs underneath houses in Warth Fold Road, but there are few other visible remains.



Radcliffe [Black Lane] Station, on Bury-Bolton line. Now demolished.

### TEXTILE INDUSTRY

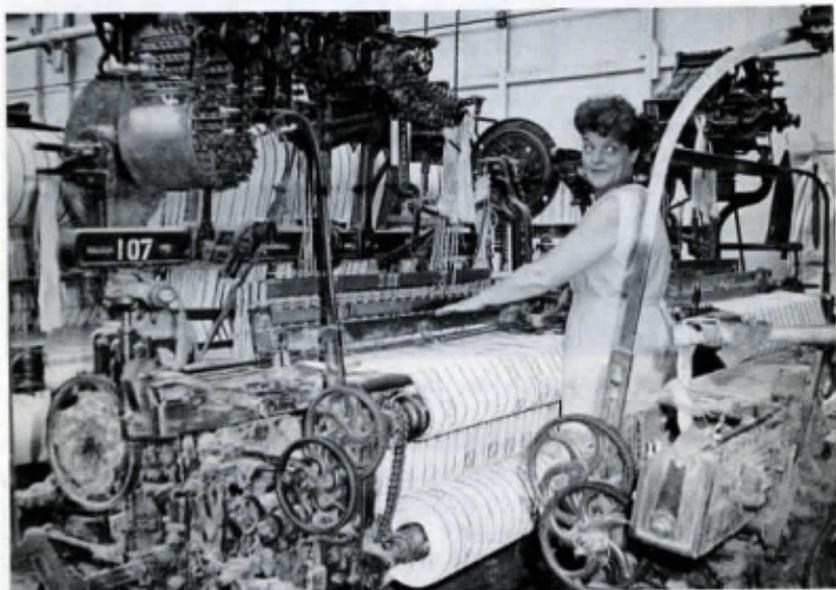
Little is left of the early weaving industry in Radcliffe. Although Knowsley cottages at Ainsworth (765106) are rumoured to have been the homes of Flemish weavers there is no direct evidence for this, and they do not possess the traditional row of upper windows. Weaving is said to have been carried out in the cottages at Scotson Fold but again there is no direct evidence to support this.

By 1780, Sir Robert Peel had established a cotton mill in Radcliffe on the banks of the Irwell. At low water the wooden baulks of the weir can still be seen in the river near Radcliffe Bridge (787071), although the factory has long since disappeared, following a fire in 1851. Peel's mill is noteworthy because of its connection with an outbreak of putrid fever in 1784, when after an investigation by a number of Manchester doctors, certain recommendations, including the following, were made:

That great attention ought to be paid to the privies . . . that they should be washed daily and ventilated in summer . . . that the smell arising from them shall not percolate into the workrooms . . . and that a strict observance of cleanliness should be enjoined . . . and that children should be washed occasionally. The bodies of those dying of fever should be wrapped in pitch cloth . . . smoking tobacco will be a useful preservative to those superintending the works.

Today weaving in Radcliffe is all but finished, only terry towel weaving being carried on at the Pioneer mills (792071). The mills themselves are worthy of attention as is the nearby Wilton mill (790072).

In Quarry Street, Radcliffe, there was until recently a small works producing coloured weaving, owned by Messrs Sharples Ltd. Samples of the cloth and other items are now preserved at Radcliffe library. Black Lane mills (776088) and Water Lane mills (778072) are two other mills of note. Red Bank Mills (775080) although now occupied by other companies dates back to 1854, and a new spinning mill was added in 1918–1919 but never used. A small cotton mill also worked for a time in Ainsworth village.



Towel-weaving (terrying) at Torrtext Ltd., Pioneer Mills, Radcliffe (Closed 1971).

*Photo by permission of Torrtext Ltd.*

### BLEACHING

The presence of the bleaching industry is still reflected in local place names such as Lowercroft and Farcroft and even in the town name Whitefield. One of the earliest bleachers in the area was A.C. Bealey Ltd.

*A.C. Bealey, Dumers Lane, Radcliffe (797078)*

The Bealey family chose the site for their works very carefully, placing it near to the River Irwell and by 1732 they were in business as bleachers having extensive crofting grounds. By 1811, a substantial weir had been constructed at

Warth (796090) and a one and three quarter mile long goyt built for supplying water to the works. In 1791, Bealey started to produce their own chemicals especially sulphuric acid; this they produced in six lead chambers, 12ft by 10ft which are said to have been roofed like a cottage. The water from the goyt syphoned beneath Dumers Lane and into the works where it drove eight waterwheels, and eleven bucket dashwheels. At an unknown later date two water turbines were installed by Gilkes of Kendal, one of which still survives. In part of the works there is a tall tower with a wind vane on the top, said to have been put to use when 'the wind was blowing the right way' so that the deadly fumes from their chemical plant would not endanger the people of Radcliffe. Also standing is a schoolroom or chapel established by Mary Bealey within the confines of the works (1793), the foundation of which is commemorated by a plaque on the oak beam of the storeroom. There were also two beam engines, both now dismantled, though a Bellis and Morcom two-cylinder vertical steam engine is still used for generating electricity. The works also had its own gas-producing plant but only the large ashlar blocks are left today, inscribed with the dates 1864 and 1867. The works is still in use.



Bealey's Bleachworks, Radcliffe, showing wind indicator on tower (left) for favourable release conditions for poisonous gases, from their acid plant.

*Mount Sion Works (767067)*

Mount Sion occupies a site on the bank of the River Irwell. Today the work processes manilla hemp for paper making, but it was started by a Mr Burd and in 1859 John Whitacker took over and used it as bleachworks. The engine room still survives and housed a Hick Hargreaves two-cylinder horizontal compound engine until c1935. During World War II the factory produced guncotton. Water was supplied to the works via a goyt further up the river, and another Gilkes water turbine is situated on a dogleg of the goyt beneath the works. On the side of the river is Radcliffe's only surviving waterwheel. It is thought to date back to about 1830 and is perhaps better described as a waterdriven beam pumping engine. Pinioned to two masonry columns are twin rocker arms, which are thought to have been part of a steam engine, the wheel was undershot from a sluice in the goyt, the diameter of the wheel being about 12ft with a breadth of 5ft. The wheel has six cast-iron sections on each side with buckets made of malleable iron. The buckets are unusual in that they appear to be experimental being similar to Fairbairn's self-ventilating type used in Furness. There is also the remains of an adjustable shuttle for ensuring maximum efficiency of the water-flow onto the wheel.

*Lever Bank Bleachworks (762063)*

Perhaps one of the most interesting of all the works in the Irwell Gorge, is Lever Bank Bleachworks situated on a bend of the river, close to Ladysshore, Little Lever. Most of this nineteenth century bleachworks is intact and is today used to store television tubes. At the entrance to the works is the stone counting-house which has much of its original glass still in the windows and there is a fine cast-iron balustrade on the stairs. At the front of the building in the roadway was an early type of weighbridge, now removed. Across the work's yard is the manager's brick-built house, and nearby is the engine house. Here a Bodmer vertical type steam engine of 140hp worked until c1926. In a building partly built out into the river there are remains of circular stone wier bases, and watercourses along the floor for operating the numerous bucketdash wheels.

In many of the buildings the roof is supported by wooden trusses and on the northern side of the works where the so-called drying machine was situated there is evidence of a fireproof floor. There are two mill chimneys standing, one octagonal and the other hexagonal in section. At the footings of buildings earlier sandstone foundations can be observed, whereas the present buildings are of handmade brick. The stone building to the east of the main complex was the stables and is intact except for an end which has collapsed. There is evidence that at some period it was used for human habitation. Close by, another brick building was found to be a smithy, the handbellows inside were found to be in perfect working order; there were also various tools and benches still remaining. On the riverside, evidence was found near the old goyt of a waterwheel pit and a little further along is the weir. The works had one of the first libraries in the area and

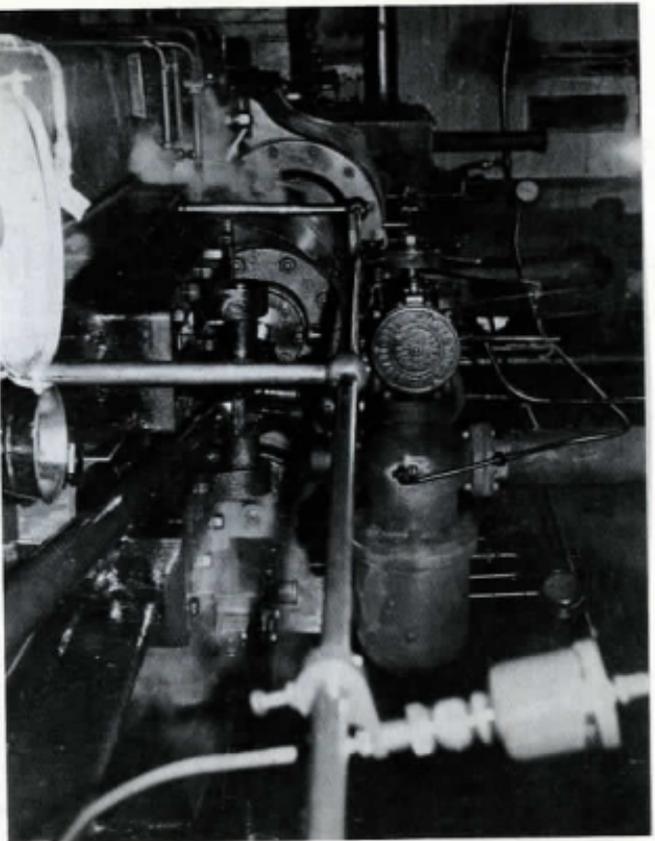


Lever Bank Bleachworks, Little Lever. Showing former croft, with keir bases.

fortunately a number of minute and day books have survived and are now preserved in the local studies collection at Radcliffe Library. Visitors to this particular area are not encouraged, and the area is patrolled by dogs.

*Hardcastle's Ltd, New Road Mill, Radcliffe (790067)*

New Road Mill, at first engaged in spinning, was opened in 1865. The works has since been extended and today the main function of the plant is dyeing, bleaching, and textile printing. The original mill engine shed stands in the millyard with a datestone inscribed 1864. The shed contained an Ashworth & Parker inverted vertical triple expansion engine of 600hp. When the engine was scrapped in 1964, the nameplate was given to Radcliffe Library where it is now kept. The last large steam engine to stop running at the works was a Lancaster & Tonge double expansion horizontal, which up to its withdrawal from service in 1969 was operating without a governor. The firm still uses steam power in the form of diagonal engines for driving textile printing machines; these engines were by a variety of makers, including Whitehead & Poole (Radcliffe), Mather & Platt and John Wood of Ramsbottom.



Lancster-Tonge horizontal engine at Hardcastle's, Radcliffe 1969.

*John Blakey Ltd (784068)*

This interesting works is close to Radcliffe Bridge. The company manufacture braid or cord. A special type of braiding machine is used, but of particular interest is the oil engine which is still in use and providing power. The engine is a 50hp type made by the National Gas & Oil Engine Co, Ashton-under-Lyne and it is fitted with a seven ton flywheel.

*John B. Lomax Ltd (783067)*

This firm had until very recently two small diagonal steam engines in operation working drying cells. The larger of the two engines was thought to have been installed by Holgate, Fishwick & Leather (Bury) about 1932.

*Ainsworth Hall (759097)*

The old dye works is now demolished, but the site is important in that it is thought to be the works of John Wilson, who in 1753 sent a representative to Turkey to learn the secret of dyeing the colour Turkey red. Following this young man's return Wilson was probably the first to dye this colour successfully.

## COAL MINING

Radcliffe has the distinction of the earliest known record in Lancashire to coal mining. In 1246, Adam de Radcliffe was fined for obtaining coal from common land. The geology of the area is such that the coal seams dip very steeply towards the south, making working very difficult. The early workings were little more than scratches on the surface, and only a few of these survive, such as those at Radcliffe cemetery (780084). There are also shallow coal pits close to the canal in the Scotson Fold area (778072), but these are covered by the later nineteenth century cotton mills. Housing has also covered up early remains, for example at Cams Acre (776072) and at Meadowcroft, where numerous shafts were sunk to reach a seam known as the Top three yards – during the depression in fact the whole site was nicknamed 'the Klondyke' (780082). Coal has also been extracted on the river side at Little Lever near to Ashclough and the spoil heaps from the shallow workings can still be seen (760065). By 1797, a steam engine was in operation pumping water at the Black Cat colliery, but most pits were simple affairs. West of Higher Pit Lane, Ainsworth there is a remarkable assemblage of shallow coal workings. Here numerous shafts were sunk to reach the only profitable seam in the area, the Cannel mine (772100). From the air the site is pock-marked with depressions, the shafts sunk by the early miners. The seam was about fifty feet from the surface at its deepest and about ten feet at the shallowest point.

*Cockey Moor Colliery (777095)*

There are now no visible remains of this once important colliery, thought to have been started towards the middle of the seventeenth century. The site was at the junction of Bury and Bolton Road and Grindsbrook Road, and the area has been redeveloped for housing. The colliery worked in a north-westerly direction until it met the shallow workings off Higher Pit Lane mentioned previously. At the junction of Grindsbrook Road and Higher Ainsworth Road on the south-east side was Lambwells pit, which was working in 1861 but abandoned by 1880 (775091).

*Cocky Moor Culvert*

Until very recently only a handful of people knew of the existence of the Cockey Moor Culvert. It has been described as a sough, a drain and a tunnel, but for convenience it is referred to as the Cockey Moor Culvert. Although the culvert appears on mine plans and is mentioned in a survey for the Lever Bank Bleachworks, Little Lever, historians have been unable to trace the original drawings. It is known, however, that it was constructed by Lord Grey de Wilton and that an appropriate clause was inserted in the Act of 1791 for the construction of the Manchester, Bolton & Bury Canal, to obviate risk to a tunnel. An interesting line in the Act reads '... or driving a proper or sufficient SOUGH or TUNNEL for the purpose of *working* his mines or beds of coal in the said

parish of Radcliffe'. This clause perhaps hints at an intention of using the tunnel for coal transportation as doubtless Lord Wilton would have been impressed by the activities at nearby Worsley. The culvert is thought to start at Cockey Moor colliery (777095) running parallel with Grindsbrook Road as far as Lambwells pit (775091) and here it is described as 'the great tunnel' and is 'sixty five yards to the water tunnel' and it has a 'level course'. The culvert in the small tunnel had a diameter of about five feet widening out to six feet nine inches in the great tunnel. There is in the area a house known locally as sough house, a possible further indication of the tunnel's existence.

From the Lambwells pit the tunnel goes beneath Moss Shaw housing estate (769082) to Lichfield Road where a shaft was found during the estate's development. The shaft was sealed, and the Doe mine (Doe seam) is recorded as being 132ft down at this shaft. From here the tunnel eventually reached the River Irwell beneath the Mount Sion works, the masonry arch still being visible, although the water flow had ceased. At Mount Sion the interior of the tunnel is brick-lined and is about ten feet in diameter. It is impossible to investigate the tunnel as it is almost filled to the roof with thick black mud.

Another short sough was constructed in solid sandstone from the Ladyshore colliery, Little Lever (762067) and can be seen at low water on the banks of the Irwell (761067).

### *Radcliffe Collieries*

Under this general heading come a number of old and scattered shafts, with a host of fascinating names such as Engine Pit, Cams Acre, Black Cat, Balance, Keppel, Horrox Meadow, all of which were sunk close to the canal and suggest a possible working date of post 1800. Some shafts were sunk next to the canal, such as Gin Pit, Mather Croft and Mather Croft New, the main shaft. All these pits have now been lost under spinning mills and weaving sheds that sprang up at the side of the canal during the later nineteenth century. Mather or Mathercroft New shaft had its wharf on the canal and it is known that it worked as deep as 504ft where the Lower Yard coal was extracted (781074).

### *Whittaker Bridge Colliery*

There is little left today of this colliery except the substantial supporting wall on the canalside (784077). The area has been developed for housing, in the course of which the line of the old tramway running to nearby Robertson Street was destroyed. The line of the old tramway served for a long time as a service road for allotments in the area. The shaft was next to the canal and during the housing development the shaft was opened and filled in, and indeed even after eighty years of disuse little seepage from the canal could be seen. The top of the shaft was concreted some time ago, and when this was removed, the supporting pieces were found to consist of colliery rail and at right angles Lancashire & Yorkshire rail. The coal from this colliery was off-loaded by a chute into the barges waiting

below. This colliery also included Hampson Meadow pit (782077) near Robertson Street, the two pits being linked by the tramway previously mentioned. An old collier recalls a tunnel from Hampson Meadow pit running down to the canal wharf at Water Lane, but this has not been found. Whittaker Bridge pit started before 1846, and finished its life c1896. The full depth of the shaft was listed by A. Jessop as being 302ft 3in, and a recent measuring of the shaft's diameter revealed it to be 15ft. The workings from this colliery tended south towards Radcliffe Bridge.

#### *Stand Lane Colliery (787066)*

A shaft was sunk on Stand Lane before 1840 and later another shaft was sunk to a depth of over 803ft. Caw Daw pit was close by and was worked to a depth of 560ft, but this shaft has now been lost.

#### *Withins Group*

Withins Lane, Bank Top, and Hagside collieries are all linked underground, including a link with the Coney Green colliery to the north. Withins Lane pit was 998ft to the bottom (789088) and Hagside was over 800ft to the sump (792085). Bank Top colliery was the deepest being 1,413ft to the bottom (792092). In a paper read to the Manchester Geological Society in 1862, Andrew Knowles, the colliery owner gives some interesting information about these pits:

The Hagside pit is used partly as pumping pit, it is eleven feet three inches in diameter. The engine employed for the purpose being a vertical or direct acting one and capable of working up to two hundred horse power. The cylinder is sixty three inches in diameter with a nine foot stroke. The water is raised by two forced lifts, the lower one is one hundred and fifty yards long and the higher one is one hundred and forty five yards. The ventilation of the mine is produced by the exhaust steam from a pair of twenty horse power engines, employed to work an incline at the bottom of the pit, assisted by a furnace . . .

#### *Allen's Green and Green Lane Collieries (780070)*

Few remains are left today except for the basin on the Manchester, Bolton & Bury Canal near Scotson Fold (777068). There was at one time a wooden link bridge across the canal but it has now gone. Other collieries on the northside of the Irwell include Coney Green colliery, which had several shafts and a day-eye or adit. The Wilton colliery (767082) is better documented than most, as a retired collier has been able to give much information and provide diagrams of the workings.

#### *Outwood Colliery (776057 shown incorrectly on the 1 inch OS maps as Outward)*

This pit was at one time the most important colliery in the area, employing well over one thousand men. the colliery was closed in 1931 after a serious underground fire in the Trencherbone mine. Entry into the mine was by cage, and at one level after leaving the cage the collier would descend a series of steps at a

gradient of about one in three or four, each step being about 1ft deep. The steps were zigzagged, and chain links were put across to prevent the men falling to their deaths. The colliery was opened about 1840-5 on a significant scale, although a small working had existed prior to this date when it was known as Cloughside colliery. Before the building of the East Lancashire Railway in 1845, a surface tramway link was established between the colliery and the canal wharf at Ringley (773052). At Higher Heaps the line of the tramway can still be seen, and it was near Higher Heaps that in later years a stationary steam engine was employed in haulage. The tubs worked on the endless chain principle. At Wood Street (774055), the later course of the tramway can be seen where it passes beneath Ringley Road. There was another length of tramway from the colliery to Radcliffe, originally worked by windlass and then by a steam engine at the pit. All that is left of this tramway is the raised causeway in a field near the colliery at 779061. The line was gravity worked down into Radcliffe.

#### *Ladyshore Colliery (763067)*

Until recently this was the best preserved of all local collieries, with most of its buildings intact. The colliery was established on the bank of the Manchester, Bolton & Bury canal at Little Lever and was one of the last pits in the area to mine coal. The colliery also made and repaired barges, having its own repair shops and lifting tackle. A few of the buildings still stand, including the colliery offices which bear the date 1837, and this seems to be the most likely date that the colliery commenced operation. The stone-built stables back on to a narrow road leading down to the nearby Lever Bank Bleachworks. It is said that the colliery was started by a Manxman from the Great Foxdale mines, but there is no evidence for this. The colliery was also well known as a source of clay for terracotta. In 1845 the owners Messrs Fletcher Ltd actually built a church of the fired material at Darcy Lever (733085). The *London Illustrated News* reported the event with an illustration in their February issue, 1845. The colliery was officially closed down in 1951.

## PAPERMAKING

Papermaking seems to have first commenced in Lancashire in 1617 at Cark-in-Cartmel, but by 1689 papermaking was being carried on in the Irwell Gorge. At Nob End, Little Lever, paper was being made by 1707 at T. Seddon's mill. The works has now almost completely disappeared except for the weir which can be seen at low water (753064) and the tailrace which is traceable along the bank. Less than a quarter of a mile from Seddon's mill is Cream's paper mill or Broadbent's going back to 1730. The works is perched on the edge of the river in an awkward location and after the canal had been built close by, an inclined plane (757064) was installed, for unloading goods. The plant is now up to date and only the weir made of stone is worthy of our attention. Mount Zion works, mentioned in the section on textiles, has since World War II been involved in papermaking.

Because of the sudden demand for paper after the war, the Strawpulp Manufacturing Company was set up in 1947 to produce paper using straw as the raw material. The company survived until 1952, but the plant and machinery was derelict in part of the works until a few years ago, giving the industrial archaeologist an opportunity to photograph the machinery and digesting plant.

#### *Radcliffe Paper Mill (787066)*

Radcliffe Paper Mill is an up-to-date mill which started production in 1915 using rags to produce feltpaper.

#### *J. Wild Ltd*

A company started in 1860 at Broad Dumers (797080) and is now completely updated.

#### *East Lancashire Paper Mill Ltd (792073)*

Here again there is little to interest the industrial archaeologist as much of the machinery is modern, being electronically controlled. Part of the present works on the north side was formerly a printworks belonging to Messrs Hutchinson, and their goyt still flows into the works. The ELPM was founded in 1860 and still produces high quality paper. In the generator house there is a uniflow steam engine built by Musgrave of Bolton, used as a standby. It is coupled to a Mather & Platt generator rated as follows; 112 rev, 120V, 800kW, 6667 amp. The engine was installed in 1916 and has a 17ft diameter flywheel.

## ENGINEERING

The engineering industry in Radcliffe seems to have grown up round the developing textile, papermaking and coalmining industries in the town. Boilermaking was a predominant part of Radcliffe's engineering output, but nowadays the engineering product is different, and everything from pea-canning machinery to television sets are made in the town. Not far from the Bolton & Bury Canal at a spot known as the Bottom of Black Lane (779074) was the Atlas foundry, its owner Squire Diggle having been recognised as the inventor of the Diggle drop box motion for powerlooms. The Eagle foundry in Egerton Street (784069) was recently demolished, but not before a number of photographs and patterns were salvaged and placed in the public library collection. There were other foundries such as the Globe foundry on Spring Lane (787074) which was started by G. Heywood, a boilermaker, and later owned by George Mills & Co, one of the early manufacturers of the automatic sprinkler for fire-extinguishing purposes. Bradbury & Saunders of Glebe Works (789072) specialised in the manufacture of papermaking machinery, and not far away the firm of General Engineering has broken away from the tradition and even produces wire cable. Wolstenholme's Ltd of Bridgefield Street (786074) were manufacturers of boilers,



Moulding at Whitehead & Poole Ltd., Radcliffe.

steam engines and sewage plant; today they produce water sluice valves mainly for power stations. Whitehead & Poole Ltd on Milltown Street are still specialist sewage engineers. The local studies section of Radcliffe Library were particularly fortunate here in that a short time ago on the retirement of Mr S. Poole, he generously gave to the library a complete collection of photographs of company products since the firm's foundation around 1900. In all there are about 900 photographs and also various catalogues and several hundred printing blocks. Until 1972, the firm did its own moulding, but this has now proved uneconomic.

On the borders of Radcliffe with Bolton are two important engineering works, that of Dobson & Barlow, formerly of Bolton (760085) and Mather & Platt Ltd (764082). Both works carefully chose their sites close to the Bolton to Bury railway line as did Whittaker Hall Ltd (777090) who now manufacture high speed air compressors and friction clutches.

#### *Stopes Pottery (764074)*

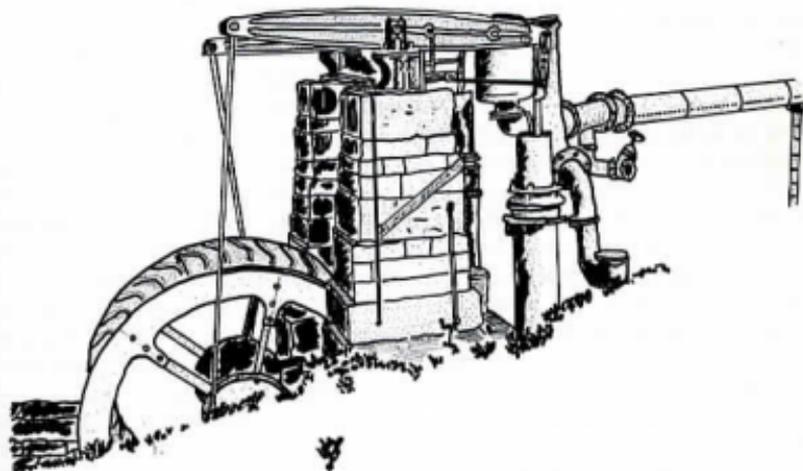
A small pottery working up to 1969, was the Wellington pottery at Stopes. The clay for making the terracotta goods was obtained from Ladysshore colliery and probably also from the nearby Stopes colliery. The firm had at one time their own

shallow working for obtaining clay and coal. It had a small horizontal steam engine at one time to drive the mixing pans and pipe machine. The pans bore the following inscriptions: J. Whitehead & Co, Preston and T.T. Crook, Bolton. At the time of the firm's closure they were manufacturing chimney cowl, and one of these has been obtained by the public library in Radcliffe.

*Whittaker's Stamp Works (789074)*

The premises for the stamp works were in Rectory Lane, Radcliffe. The company employed about eight to ten men. The wood for the stamps was first stored for it to season. Each wooden block had hammered into it pieces or strips of copper wire to form a pattern, or desired shape. In the textile industry the stamps were used to mark the ends of cloth to be exported, with an easily recognisable emblem. The firm went out of business after the introduction of rubber stamps in the 1940's, Radcliffe Library has examples of both the blocks and two of the pattern books.

In this account of the industrial archaeology it has been unfortunately necessary to omit many of the minor industries, such as wallpaper manufacture, sweet making, printing, wheelwrighting, cricket bat manufacture, shuttle making, brewing and mineral water manufacture, and condiment making, which are found in the area. On many of the industries that have been included space has not permitted the author to include all the known examples of that particular subject, and indeed active research is still underway in many of the minor industries listed above.



An unusual pumping engine operated by a waterwheel, through a rocking beam.  
This engine is near Radcliffe, on the River Irwell, Lancashire.

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