

FLOUR MILLING IN GLOUCESTER

by Hugh Conway-Jones

Until the nineteenth century, flour milling was carried out by small water powered mills wherever there was a suitable stream, and there were ten such mills on the four mile stretch of the River Twyver from Upton St. Leonards to the northern outskirts of Gloucester (1). A further mill within the old Abbey precincts was sited on a branch of the Twyver known as the Fullbrook. These early mills would mainly have processed corn from the local farmers using the traditional method of grinding between specially prepared millstones.

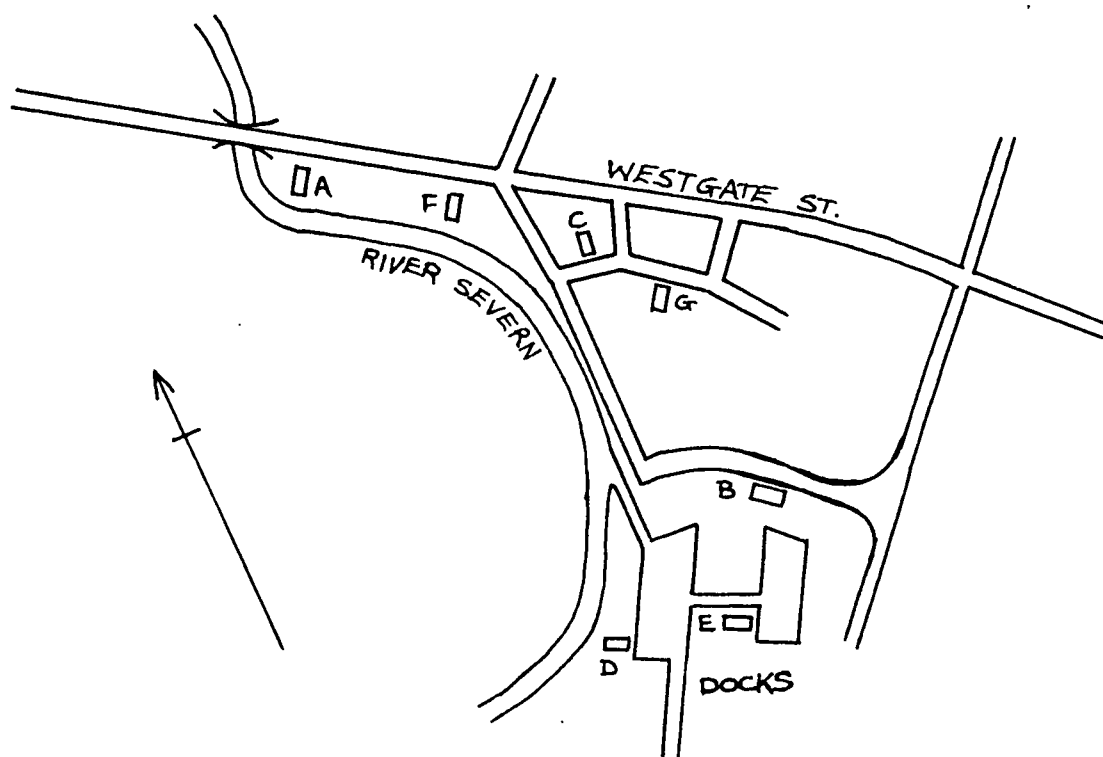
The opening of the Gloucester and Berkeley Canal in 1827 encouraged a significant growth in corn imports through Gloucester docks to help feed the developing industrial towns. Initially this corn was transhipped at Gloucester and sent on to mills that had reasonable access to a navigable river or canal. Several of the old cloth mills in the Stroud valley were converted to flour milling and the corn was brought in along the Stroudwater Canal. During the 1830s, the largest miller in the district was John Biddle who ran Stratford, Ebley and Wallbridge Mills. He built his own warehouse at Gloucester docks to store the imported corn, and he had a large wagon drawn by eight horses for making deliveries of flour to Gloucester and Cheltenham (2).

As the demand for flour increased, new steam-powered mills began to be established where there were good transport facilities to bring the wheat and coal in and to move the flour out. In about 1840, a baker named Thomas McLean established Gloucester Steam Mills which backed on to the River Severn fifty yards to the south of Westgate Bridge (A). Apparently he took over an existing timber-framed building and added on a four storey brick building to the north. At least by a few years later, the mill had eight pairs of stones and other machinery powered by an 18 h.p. engine in the old building and by a 14 h.p. engine in the main building (3). With an eye to even better transport facilities, J. and J. Hadley built the City Flour Mills in 1850 in the main docks area just to the north of the recently opened Victoria Dock (B). The original building is the easternmost of the existing group, and would have contained just a few pairs of stones and some flour dressing machines much like those used in the country mills.

In 1859, the Hadleys moved on to greater things in London, and converted an old water mill in Upper Thames St. to steam power. Meanwhile John Biddle's extensive business around Stroud had mainly been taken over by Joseph Reynolds and Henry Allen, and they were wanting to extend their interests to Gloucester to minimise transport costs. They therefore took over the City Mills in 1860 and also the

Gloucester Mills at about the same time. Unfortunately the latter were seriously damaged by fire in 1863 (3), and it does not appear that they were ever fully rebuilt, although other operators carried on milling there for many years.

The repeal of the Corn Laws in 1846 led to a large increase in corn imports through Gloucester. From an average of 53,000 tons per year in the early 1840s, the corn brought up the canal rose to 94,000 tons per year in the early fifties and to 154,000 tons per year in the early sixties (4). Much of this was sent on to the industrial towns of the Midlands and South Wales via the inland waterways and the new railways, but there was also a growth in the amount milled in Gloucester and six new mills were established between 1863 and 1871 (5). The Quay Steam Mills on the north side of Quay St. (C) were started about 1863 by Samuel Luker who had previously run Grove Mill between Painswick and Stroud. About the same time, a baker called George Cox established the County Steam Flour Mills in Hopewell St. (off Barton St.). Around 1867, William Hall & Sons moved from Over Mills to start St. Owens Mills in a converted warehouse on the west side of the docks (D). Their place at Over was taken by



Reynolds and Priday, although not for long. James Reynolds (the son of Joseph Reynolds at the City Mills) converted the Albert warehouse in the docks (E) to a flour mill in 1869, and his former partner Charles Priday took over St. Owens Mills ten years later. After Samuel Luker died in 1867, the Quay Mills were run jointly by his sons for a few years, but around 1870 Henry Luker started the Island Steam Mills in Lower Westgate St. (F) and in 1871 James Luker started the Victoria Steam Mills on the south side of Quay St. (G),

leaving John Luker to continue at the Quay Mills. From the limited evidence available, it seems that most of these new mills had between three and five pairs of stones. Grinding was followed by sifting using either reels covered with silk or a cylinder covered by a wire mesh inside which brushes revolved at high speed.

During the 1870s, there was growing competition from the import of foreign flour of high quality, particularly from Hungary. This so concerned the British millers that a party of about forty visited Budapest in 1877, and they found that the Hungarians had developed an improved means of milling using iron rolls (6). With this method, the wheat first passes between pairs of fluted rolls to break the outer skin of the wheat grain and scrape away the endosperm inside. Between each set of rolls impurities are separated by sifting in conjunction with air currents. The separated endosperm is then broken down by passing through pairs of smooth rolls, again with sifting between each stage, to give the required grade of flour.

One of the party that visited Hungary was T.W. Hibbard who had become chairman of James Reynolds & Co when the founder died in 1876. He was so impressed with what he saw that he arranged for a four sack per hour roller plant to be installed at the Albert Mills in 1880 and a larger plant was installed two years later. (A standard sack of flour weighed 280 lbs.) At this time, the City Mills were being run by the sons of the original Reynolds and Allen, and they soon followed their neighbours lead by installing a ten sack per hour roller plant in 1883. Maybe this overstrained their finances as they went bankrupt in 1886, and the business was taken over by Priday Metford & Co. This firm was formed by Charles Priday who had been running St. Owens Mills, F.K.S. Metford from Bristol and F.T. Pearce who had been associated with Reynolds and Allen. The new company suffered a setback in 1888 when a serious fire gutted the wheat cleaning department (7), but fortunately the fire did not spread to the main mill building and they were soon back in business again.

It does not seem that the other Gloucester mills made the change to roller milling. Most of them carried on into this century (5), but increasingly they were used for making animal food rather than for producing flour. The Quay Mills closed around the turn of the century, although the building was only demolished recently to make way for a proposed shopping development. The Victoria Mills closed around 1906, and the site was later used as the Vulcan Works of the British Carbonising Co and is now part of the Shire Hall car park. St. Owens Mills were used by Priday Metford & Co for making wheatmeal flour and animal food until 1921 when the plant was transferred to the North Warehouse in the docks. The Island Mills passed through several hands until they were taken over by West Midlands Farmers around 1920 and they still occupy the site. The County Mills were operated by E.J.C. Palmer until about 1930 when the building became part of the Co-op Bakery, (the original building still stands on

for many years by the Evans family, but the building was burned down around 1940 and the site is now occupied by Westgate Motorhouse.

The two mills that did continue to develop were the two that had made the change to roller milling, and it is probably significant that both had prime sites in the docks. It is possible to follow the fortunes of the Albert Mills in some detail because many of the papers of James Reynolds & Co have recently been deposited in the Gloucestershire Record Office (8). It was noted earlier that the Albert Warehouse was converted to a mill by James Reynolds in 1869, and that after Reynolds' death T.W. Hibbard arranged for the installation of roller milling plant in the early eighties. The mill manager at this time was W.R. Voller, and he started an evening class in 1884 covering the use of the new methods. Later, men from other mills were allowed to join in, and Voller went on to write what became the standard book on milling. In later years, the firm prided themselves on the number of well-known millers at home and abroad that had received their training in Gloucester.

To augment the main mill building, a wheat cleaning house, boiler house, engine house and various workshops had been built to the south of the mill. Then around 1886, the adjacent warehouse to the west was taken over for wheat and flour storage, and this was connected to the main mill by a footbridge. During the summer of 1889, the mill was usually operating 143 hours per week and produced around 2200 sacks of flour from around 275 tons of wheat (an extraction ratio of 71%). Around 1898, Reynolds & Co started using the old stone plant again to make wholemeal flour which was sold as Pure Digestive Wheatmeal. This quickly established a high reputation, and at the London Bakery Exhibition in 1902, it was used by the winners of the gold, silver and bronze medals in the open class for wheatmeal bread.

In 1900, the firm became a limited company with T.W. Hibbard as chairman and W.R. Voller as one of the directors. The share capital was £80,000. Unfortunately the new company made a loss in the first year, and the chairman paid a dividend out of his own pocket. This was only a temporary setback, however, and the firm was soon making steady profits. Their account books show that the milling operation was only a small part of the business, and the profitability of the company depended mainly on how clever they were in buying their raw material and in selling the product. For example in 1901-2, the cost of the wheat comprised over 80 per cent of the selling price of the flour:

Expenditure:	Foreign wheat	£139,000
	English wheat	£41,000
	Carriage and storage	£12,000
	Mill operation, depreciation and interest	£12,000
	Staff salaries and expenses	£8,000
	Profit	£7,000
Income:	Flour sales	£219,000

The foreign wheat came from Canada, Russia, America and the Argentine, and part of the skill of milling was to blend together the different types of wheat to give the required grade of flour. An interruption in supply from one source could upset the balance as their warehouse could only accommodate a few weeks throughput. To minimise this problem, some use was made of Beards warehouse by the main basin and this was linked to Reynolds wheat cleaning department by a conveyor belt in 1905. Nevertheless, it was still difficult to keep the wheat mixture regular in 1912 when there were poor harvests in Russia and Manitoba, and again the following year when Russian wheat was unsatisfactory and there was also a poor English harvest.

By 1910 the company was in a sound financial position with debentures paid off and £10,000 in a reserve fund, and the opportunity was taken to modernise the mill. A new boiler was installed, the wheat cleaning machinery was improved and the roller plant was remodelled to give an output of 20 sacks per hour. The company purchased a steam wagon, and it ran 11,500 miles in the first year and made a profit compared with paying railway freight charges. During the first World War, the whole industry was put under Government control. By 1915 there was a complete absence of Russian wheat due to the closure of the Dardenelles, and other supplies were limited by lack of shipping. After the war investment began again, and the 1920s were a time of re-adjustment and fluctuating fortunes. In 1927 the company took over the lease of Beards warehouse and it became their flour bagging and storage warehouse with their earlier warehouse retained for wheat storage. Around 1934, the old steam engine was replaced by electric motors, although the chimney remained a landmark in the docks until recently. During the second World War, the industry came under Government control again. At times it was necessary to use rather low quality wheat, and the extraction ratio was increased to 85 per cent for several years. In 1962, the company was taken over by Allied Mills and although there were plans for expansion, the company decided to concentrate their activities in Tewkesbury, and the Albert Mills were closed in 1977. The ancilliary buildings to the south of the old mill were demolished recently.

With the closure of the Albert Mills, only the City Mills remain to represent an industry that once was of considerable economic importance to Gloucester. The survival of Priday Metford & Co must be partly due to them having remained a private company with all the shares held by the three founding families. The wheat no longer arrives by ship, but is mainly brought down from Liverpool by road. The flour is delivered to independent bakers over a wide area. Their buildings and plant have been extended and modernised over the years, and their current output of 25 sacks per hour is probably not far short of the total of all eight mills of a hundred years ago.

Acknowledgements

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References

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3. J.J. Powell, Gloucestershire Extracts Vol.2 p.87.
4. J. & C. Sturge, Annual Corn Circulars 1831-86. Gloucestershire Collection No.12199.
5. Directories and Glos.R.O. D3833/7.
6. W.R. Voller, Modern Flour Milling (1892), Gloucestershire Collection No.15969.
7. Gloucester Journal, 7th Jan., 1888.
8. Glos,R.O. D3039/1-35.

Addendum

Since the main article was written, a further reference to an early corn mill has been found (9). This shows that in the first few years of the nineteenth century, a steam powered mill was established in Lower Westgate Street backing on the River Severn. The four storey building contained six pairs of stones together with an apparatus for dressing and preparing oatmeal. The business was established by a group of proprietors and provided a service to those who brought their own corn to be ground. The project was not successful, however, and in August 1810 the premises were advertised for sale.

Additional Reference

9. History of Cheltenham (H. Ruff, Cheltenham, 1803).