Rural Foundries in a Vale & Downs Context

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Rural Foundries

There is a tendency to think of foundries (ie enterprises which cast shaped components from molten metal in contrast to metal manufacturers who make ingots for subsequent processing) as being solely associated with post-industrial revolution manufacturing centres, eg Black Country, South Wales and parts of northern England. While it is true that the majority of foundries were, and are, in those areas there were in the 19th and early 20th century a significant number of foundries scattered around the towns and villages of predominantly agricultural counties (Fig 1).

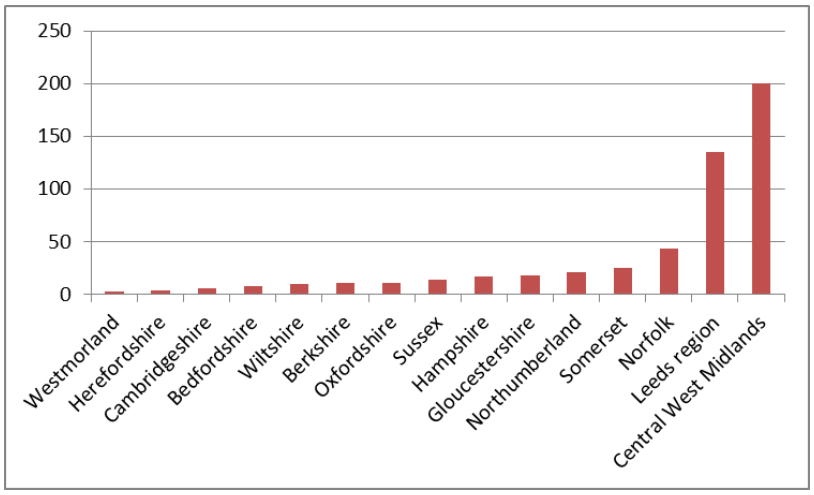

Fig1. Foundries listed in Kelly's Directories 1885-1899 – number per agricultural county/industrial region (Accessed through www.specialcollections.le.ac.uk)

While not making a major contribution to national production of cast components the presence of foundries in agricultural areas, typically a dozen per county at any one time, is likely to have had a significant effect on local economies, particularly where circumstances led to a foundry based business becoming a national, or even international, supplier.

Sector Expansion

The growth in the number of rural foundries over the course of the 19th century was probably due to three market factors; high farming, municipal improvement, enhanced domestic comfort. The increasing number and complexity of agricultural implements (Fig 2a) led to a large rise in the use of cast components resulting in a situation where almost everyone making or maintaining machinery had to have a source of castings. The middle 19th century was an era of municipal improvement where towns carried out public works to provide water, sewage, lighting, drainage etc, all of which required products (Fig 2b) containing cast components. At the same time there was a rise in affordability of domestic comfort which led to a growing market for household fittings and appliances (Fig 2c).

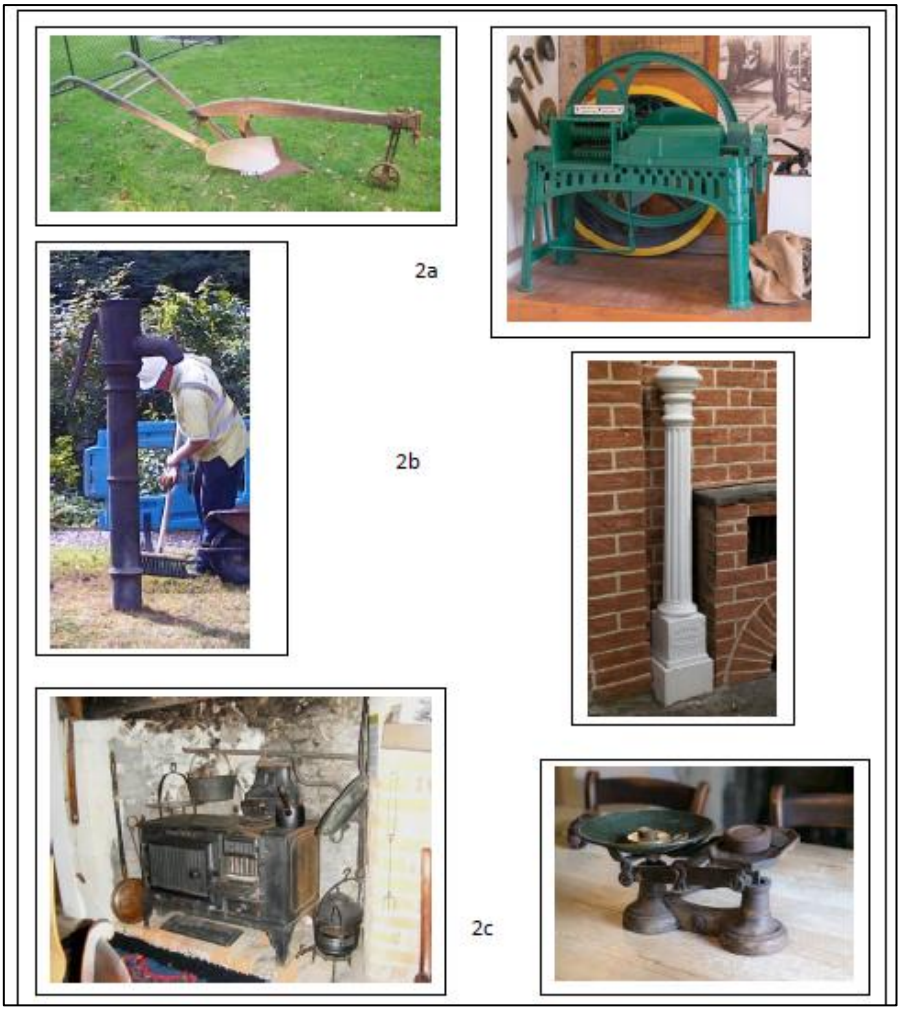

Fig 2. (a) simple plough contains seven cast components, chaff cutter (Wantage Engineering) almost all cast iron. (b) Theale Turnpike iron pump (cast by Hedges of Bucklebury), Wantage Town Commission iron bollard (cast by Gibbons of Wantage) (c) cast iron kitchen range (made by Kent of Wantage), cast iron scale and cast iron and brass weights.

Coupled with the existence of expanding markets was the fact that the capital and labour requirements to set up an entry level foundry were modest. Copper alloys such as brass melt at less than 1000degC so only required a crucible and a blacksmith forge type hearth to produce molten metal. With a melting temperature of 1150-1200degC iron needed more specialised heating but a small bellows blown cupola furnace was fairly easy, and fairly cheap, to build. After that the only requirement was for ladles, sand and wood to make patterns (Fig 3).

Fig 3. 1m diameter cupola furnace from Hedges Foundry, Bucklebury (in use ~ 1820-1960) and a casting being poured in a sand mould

Rise and fall - a case study

A furnace in the back yard might not become more than an occasionally fired up add-on to another business or it could, with luck and judgement, grow to become a middling enterprise; that sort of progression is well illustrated by a local example - the Kimber family. The family lived in Steventon (now Oxon but then Berks), a village with a population of 600-900 during the 19th century – substantial but still only a tenth the size of the nearby town of Abingdon.

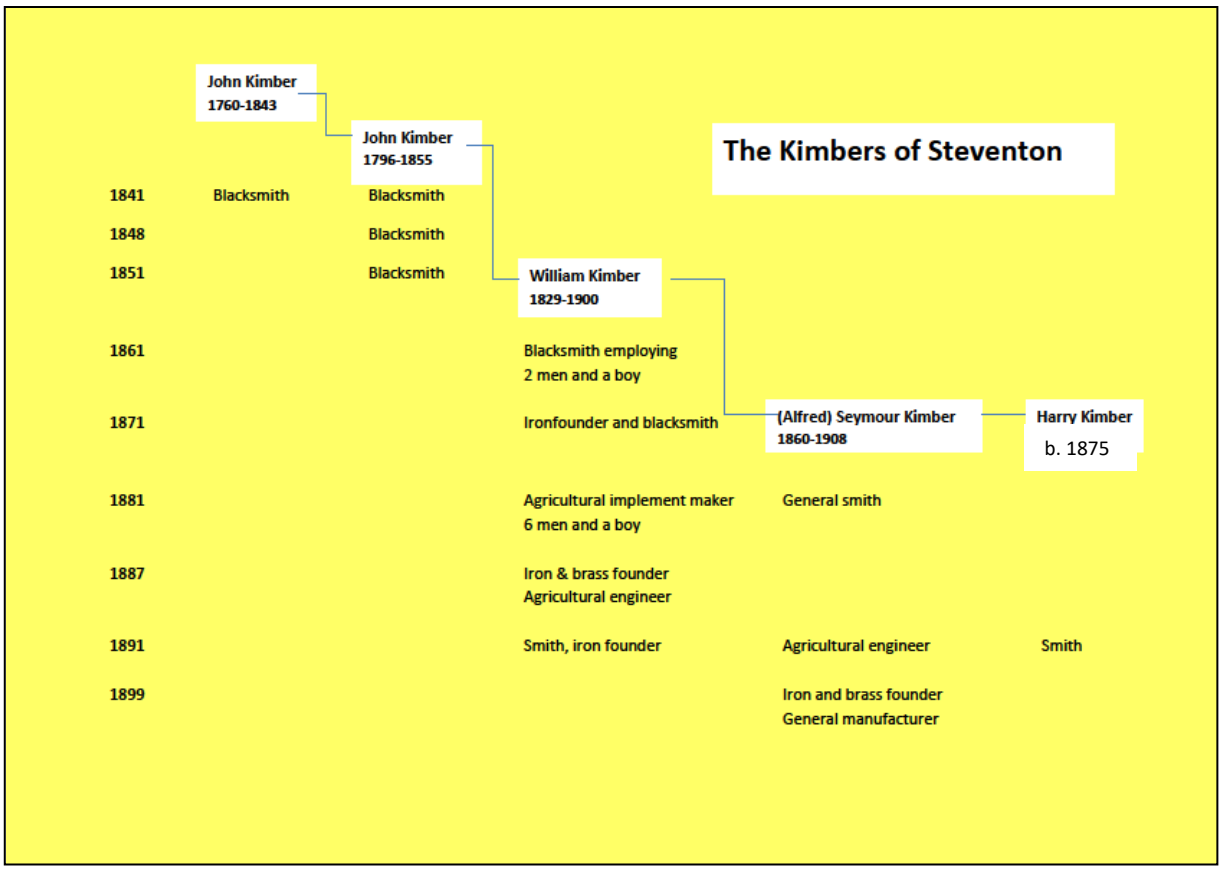

Fig 4. History of the Kimber family business - based on directories, OS maps, census and the family website http://www.bradshaw32.plus.com/family

The John Kimbers, senior and junior, were in turn blacksmiths with premises on the High St, Steventon. John junior died in 1855 and the business was then headed by his son William who in 1861 employed two men and a boy. By 1871 William had extended his services to include iron founding and ten years later described himself as an agricultural implement maker with an expanded workforce of six men (presumably one being his son Seymour) and a boy. The OS map of 1888 has a foundry marked on the east side of the High St. By 1891 directory entries imply that although William (aged 62) was still active the engineering business was now under Seymour Kimber, who in 1899 (following his father's death) was described as an iron and brass founder and general manufacturer. So over the course of the 19th century the family had gone from a one man smithy to a medium sized manufacturing business – which then disappeared almost overnight. There is no entry in the 1915 directory and the foundry is not marked on the 1910 OS map. Seymour died in 1908 at a relatively young age (48) with a daughter as his only child, his brothers were in other trades elsewhere – even Harry who trained as a smith had gone for a soldier (Royal Engineers1891-1903) and then emigrated to USA. With no relatives to take it on the business was presumably wound up.

Foundries of the Vale & Downs

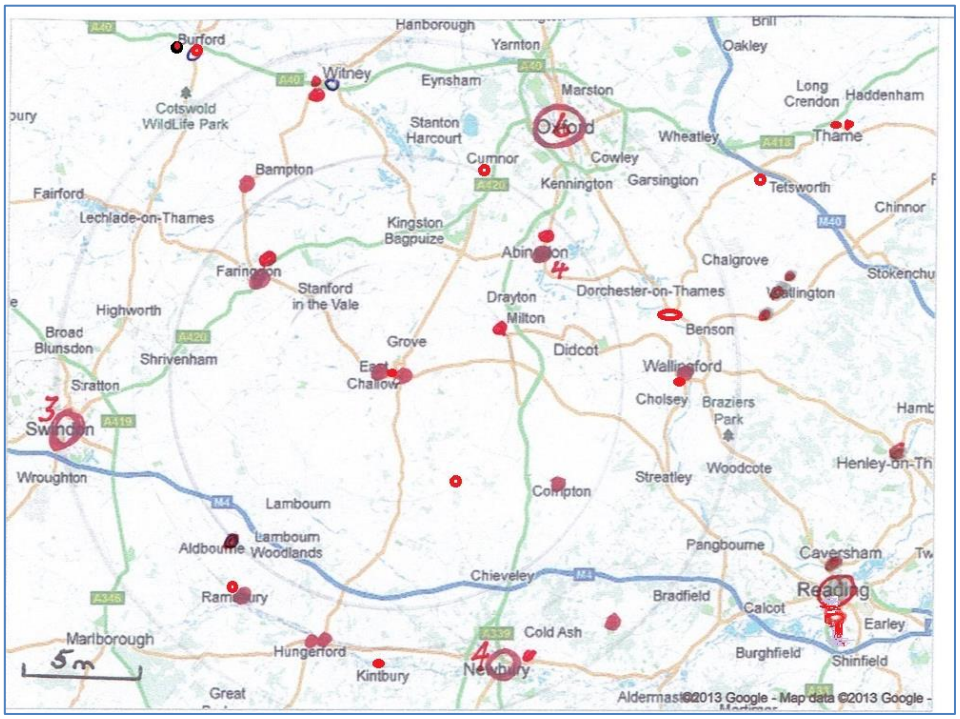

Fig 5. Foundries around Wantage (~1820s to 1920s)

The map in Fig 5 is centred on Wantage and shows the locations of foundries which operated in the North Berkshire/South Oxfordshire area from the beginning of the 19th century onwards. A non - exhaustive list of 57 businesses is given in Appendix 1, of these around 35 were in, or bounding, the Vale and Downs. The map only shows foundries producing engineering castings, there were in addition half a dozen bell foundries.

Most of the foundries were in the market towns but there were a significant number (about 25%) scattered around the villages, and these were not necessarily the smallest or shortest lived. For example, Baker's foundry in Compton (19th century population ~ 600) was producing about 1500 tonnes of iron castings a year at its height and the family ran the business from 1827 until the 1950s [1]. Similarly Knapp's Clanfield (population 200) foundry, complete with its own brass band (Fig 6), operated from the late 19th century until the 1960s [2].

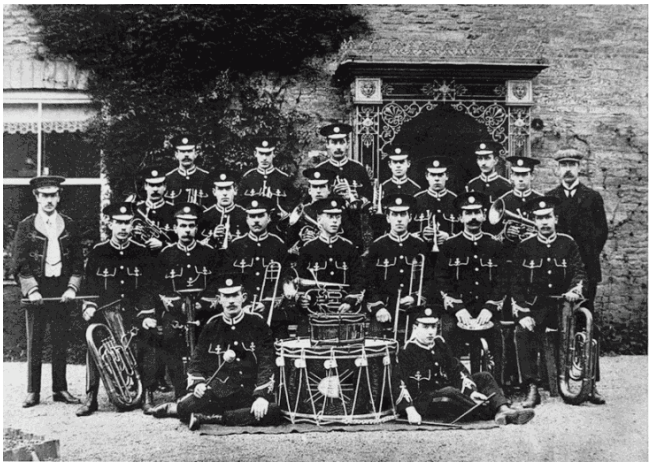

Fig 6. Thames Valley Iron Works Band outside the owners house (1913)

Taken over a hundred year time scale there were a significant number of foundries in and around the Vale and Downs with at any moment eight to ten being in operation – so in line with typical county numbers . This manufacturing base will have affected the area by providing direct employment, income for suppliers and producing the components or machinery necessary for the success of other local industries and agriculture.

Wantage -a factory town?

Although providing the normal facilities of a small market town Wantage, even in the 18th century, had significant manufacturing. There was substantial rope and canvas making and until its bankruptcy in 1811 the Sylvester Tannery was claimed to be the largest in the kingdom [3]. These were industries which were based on agricultural raw material, much of it locally produced, and so can be seen as naturally fitting into the environment. It did mean that there was a local workforce whose number presumably outstripped the employment offered by the usual market town trades and businesses (the tanneries, all closed by 1825, had employed over 100 men) and so was available to new enterprises, including those based on external materials such as brass and iron.

In 1826 John Austin [4] opened a foundry (on or near the corner bounded by Newbury St and Ormond Rd) and by 1830 it was doing well enough to have its products smashed by a gang of Swing rioters [5]. Under Charles Hart it moved to premises at the bottom of Chain Hill in 1847. Subsequent owners were P& H Gibbons from 1860, Gibbons & Robinson from 1881 and Robinson & Auden from 1891 (at which time its incorporation capitalisation was £32000, equivalent to £30m today). In 1900 Lord Wantage took over and, as the Wantage Engineering Company, there was further growth from 100 employees to getting on for 200.workers. For 90 years products had been largely agricultural equipment, including its own range of traction engines (Fig 7). However, from 1910 onwards the company, under the leadership of the Thurstons, moved increasingly to making mining and haulage equipment. Throughout the foundry was a key part of the process with Wantage Engineering at one time operating two cupola furnaces and employing 8-9 people in the foundry. The foundry ceased operation in 1963 and the company, by then part of Wrigley-Union, closed in the 1980s.

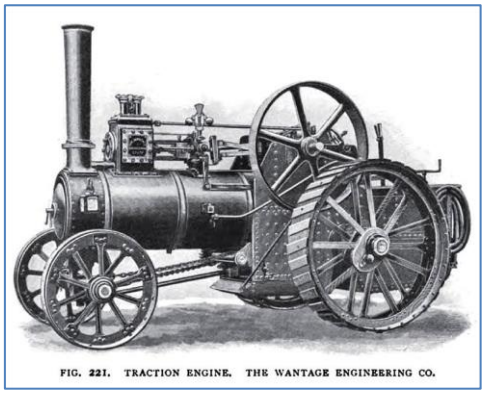

Fig 7. 8 HP engine built around 1904

Meanwhile only a mile away in Challow another foundry had sprung into life by the 1840's. Originally William Pierce & Co (Engineers and Ironfounders) it became Nalder & Nalder [4] in 1858, the choice of location was presumably influenced by the proximity of the Wilts & Berks Canal. By 1888 Nalders was employing 150 people (with an annual wages bill of £5310, equivalent to £2.3m today) and may have had around 200 workers by 1900. The foundry operated one cupola furnace and a photograph indicates that about half a dozen worked in the foundry. Nalders made all sorts of

machinery but was particularly noted for cereal and malt graders and later cocoa and coffee equipment (the latter into at least the 1950s). The site remained an industrial centre until 2013.

So by the latter half of the 19th century Wantage, plus the contiguous parish of Challow, had two engineering companies of appreciable size. Wantage Engineering had started as a jobbing foundry but directory entries indicate that its production became increasingly in-house and Nalders appears to have always been a tied foundry. The reason for their size and the continued existence of both enterprises well into the 20th century is probably related to the fact that both made finished products which had national and international sales, ie their prosperity did not entirely depend on the local market.

1881 Male Employment Distribution
Total for town and adjacent parishes

	Faringdon	Wallingford	Abingdon	Wantage	Swindon
Manufacturing %	**0.4**	**0.4**	**0.7**	**5.8**	**23.1**
Agricultural %	**42.7**	**46.2**	**40.7**	**40.3**	**16.7**
Other %	**56.7**	**53.3**	**58.5**	**53.8**	**60.1**
Total employed	**1473**	**3661**	**5198**	**1874**	**10360**
				Town only 14% manufacturing	**Town only 43% manufacturing**

Fig 8. Employment of men in Vale of White Horse towns (based on 1881 Census Occupations Report) Accessed through www.Visionsof Britain.org.uk)

The effect on the socio-economics of Wantage can be illustrated by looking at its employment distribution compared with nearby market towns. Those towns and their hinterlands only had half a percent of males employed in manufacturing – Wantage had over 5%, and within only the town 14%. It was only Swindon with its massive railway works which had more (Fig 8). Large work forces clearly caused accommodation problems as both Nalders and Wantage Engineering built workers terraces. Sometime before 1877 Nalders built a row of twelve worker's houses on the outskirts of Wantage [6] (Fig 9). These are still standing and the whole area is known as Naldertown. By this time Wantage Engineering also had company terraces sited at present day Three Pigeons Close. These have gone but the adjoining factory manager's house (fronting onto Ormond Rd) still survives as do some "worker built" cottages on Chain Hill.

Fig 9. Nalder Town – company housing of the 1870s

With eventually several hundred directly employed men (being paid the present day equivalent of around £5m a year) out of a total town population of about 4000, plus the supplier network, engineering had an important role in Wantage. It even had a place in public life as the owners of Nalders and Wantage Engineering were involved with various municipal, charitable and infrastructure bodies [7]. So although Wantage was by no means "a dark satanic mill" neither was it entirely rooted in agriculture, it encompassed the characteristics of a "slightly smoky" factory town.

End of an era

Although rural foundries persisted into the early 20th century, for example Kelly's 1920 directory lists nine in Berkshire, thereafter the story was one of decline. This was a reflection of a general trend in manufacturing in which the bigger consumed the smaller. Once transport improvements made location less important economies of scale came into effect especially when combined with increasing mechanisation – so that unit price could be decreased but only if production volumes were big enough to amortize capital costs. This would have particularly affected jobbing foundries but tied foundries were not immune. The need for cast components was also lessened by changes in fabrication techniques – the rapidly increased use of welding post WW1 provided a viable alternative, especially for short run work.

As a result the foundries around the Vale and Downs gradually shut down. A few in-house foundries hung on until the 1960s when, even though the companies may have continued, the foundry departments closed. It is this progression which accounts for the lack of survival of foundry relics. The rural foundries closed before conservation of industrial heritage emerged so, as the plant had scrap value, everything was sold off – except occasionally the patterns. Patterns would be retained because they had no scrap value, took up little room, and might be needed to get an outsourced casting made.

There are still a few foundries operating locally. Lucy Castings closed their Eagle Works in Oxford in 2005 after 193 years of operation but still runs Sandawana Castings, a jobbing iron foundry, in Witney. And in Swindon Honda is casting cylinder blocks and heads as the first stage of its engine production line.

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Notes

1. "The Story of Compton - A Berkshire Downland Village", L McMahon and Mankin, Compton Parish Council, 2000 (tonnage calculated from rail shipment data)
2. "VCH Oxfordshire" Exeter University, British History On Line, 2006
3. "The Largest Tannery in the Kingdom", J Parrott, Garden Shed, 2009
4. Wantage Engineering and Nalder&Nalder archives held by Museum of English Rural Life, Reading
5. "Berkshire to Botany Bay", N Fox, Littlefield Publishing (hungerfordvirtualmuseum.co.uk)
6. "Working Class Housing in Oxfordshire", C Paine, Oxoniensia XLIII, 1978
7. Examples are Berkshire County Council, Wantage Town Lands, Wantage Cottage Hospital, Wantage Tramway – referenced in "Wantage Past and Present", A Gibbons, E Davey, Palmer 1900; "Wantage Cottage Hospital", M Prentice, Blowing Stone, 1986; "The Wantage Tramway", S Pearce Higgins, Abbey Press, 1958

Illustrations

All J Birch and G Birch except for 2a (1) – City of Moorabin Historical Society, 2b(1) – Holybrook Parish Council, 3(1) – Blists Hill Museum, 3(2) – Navinsanat Foundry Company, 6 – VCH Oxfordshire , 7 – Vintage Machinery

Appendix 1. Foundries of North Berkshire/South Oxfordshire

A non-exhaustive list compiled from, inter alia, OS maps, trade directories, Historical Atlases of Berkshire and Oxfordshire

Location	Number	Details
Abingdon	4	Davis Engineering -Wilsham Rd, Ballard (Phoenix) - Bath St, Nathaniel Dean - Stert St, William Dean - Ock St
Aldbourne	1	W T Loveday (later Aldbourne Engineering) - Lottage Rd
Appleton	1	White (best known as bellmakers/hangers but also advertised as general brass founder)
Brightwalton	1	William Baker and Charles Hart - The Green
Britwell Solome	1	Stevens
Bucklebury	1	Hedges (later David King then Whately Bros)
Caversham	1	S Griffith
Challow	1	Nalder and Nalder
Clanfield	1	L R Knapp (Thames Valley Ironworks)
Compton	1	W T Baker (White Wall Ironworks)
Faringdon	2	Claydon - Malborough St, George Morton (Faringdon Ironworks)
Great Hasely	1	Jarmain (Hasely Ironworks)
Henley	1	Hope Fletcher Henry Luffman
Hungerford	2	Gibbons Bros - Bridge St later Charnahm St, Cottrell &Co (Eddington Ironworks)
Kintbury	1	passing reference in acount of Swing Riots
Newbury	4	William Plenty - Kings Rd, Porter & Turk, J Burton - Cheap St, W Tasker - Pound St
Oxford	6	Lucy & Co - Jericho, Dean & Son - Cowley, Clews - Clarendon St, Curtis - Botley, Oxford Steam Plough - Cowley, Newman Savory - Canal Wharf
Pyrton	1	Dimmock
Ramsbury	2	R Gibbons (moved to Hungerford), S T Osmond - Newtown
Reading	8	R Cort (Reading iron Works), J Wilder, T Williams, R Hall, H Marsh, Allen& Simonds, E Stanley, H Goodman
Shillingford	1	Shillingford Works Co
Steventon	2	Kimber - High St, Smith - The Causeway
Swindon	3	GWR, George Kerr (later Edwards), Affleck - The Prospect
Thame	2	H Mott - Park St, Lucy&Co
Thatcham	1	G Wheeler
Wallingford	2	William Guttridge - Wood St, Wilder & Wilder
Watlington	1	Stevens Bros - Shirburn St
Wantage	2	Joseph Golding - Grove St, Wantage Engineering Co (and predecessors)
Witney	2	Young, Leigh & Jackson

Notes on these companies are in an annex to the hardcopy version of this paper deposited with the V&D Museum, Wantage

In addition to the engineering foundries listed above there were bell foundries at:

Aldbourne, Appleton, Banbury, Bicester, Burford, Oxford, Witney and Wokingham