

A DRIVER and WEATHERHEAD family history

Silsden, West Yorkshire, England

Tracing the story of two Silsden families, through six generations of change

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Appendix 8

Driver family businesses

1. Wm Driver & Sons Ltd

Nail making had been an established occupation in the Black Country, part of the Midlands of England, since the thirteenth century and in the mid 1700s the makers were largely women. At that time a nail maker with the name William West arrived in the West Riding of Yorkshire from the Midlands and settled in Silsden. The earliest references to nail making in Silsden that have been found are the marriage banns record and subsequent marriage at St Andrews Church, Kildwick, of William West, nail maker, and Isabel Turner, both of Silsden. They were married on 3rd November 1755. His birth record has not been found. He was married a second time some 20 years later to Mary Holdsworth of Silsden.

The art of nail making was learnt and the men of Silsden began a new occupation that would thrive in this village. Iron was made in a number of locations in Yorkshire, at Sheffield but also in nearby Kirkstall in Leeds, and in Bradford. Coal was available in quantity from Lancashire and transportation, by good roads and by the Leeds Liverpool Canal which passes through the centre of Silsden, was reliable and relatively inexpensive. The Leeds Liverpool Canal was opened locally in 1773 and was completed to Liverpool in 1816. At the beginning of the Industrial Revolution the demand for nails was increasing and manpower was not a problem. Silsden was primarily a farming village but weaving of linen, cotton and wool were established cottage industries. To these nail making was now added.

Nails were made by heating bars of iron to white heat, hammering them into shape and cutting the shaped nail from the bar. This took the form of a forge consisting of a fire, usually using small coal, and large bellows to quicken the combustion and get the bars sufficiently hot to shape them. The shaping was carried out on a stock which was topped by an iron stithy block with two shaped holes in it to hold tools. One tool was a block on

which the metal was hammered and the other was an upright chisel on which the nail was severed from the bar. Hammering was done using hand held hammers and maybe a foot operated heavy hammer called an oliver. There were frequently four men and a boy working around each hearth. Nails were made for a host of uses the most common at that time would be horseshoe nails, but increasingly and particularly after WWI, for the making of shoes with leather soles rather than the traditional wooden soles. However, shuttering and structural applications needed during the construction of the canal (1773), reservoirs (1866-82) and the railway (1847) created their own special needs. It is said that nails were made in batches of 1000, but in practice that meant an additional hundred or more 'for good measure'.

Nail making sprung up in many locations around the village with a number of farms investing in a variety of skills as a way of increasing their income. Consequently, nails were made at these secondary sources especially on days of bad weather and hours of darkness. As a result, some masters of the nail making industry would provide the facility and all materials and pay the nail maker an agreed price when the maker had completed the specified type and quantity of nails. In the case of William Driver, P3, once he had become 'established' he probably had a mixture of salaried nail makers and some independent ones. Roy Mason in his book Pennine Village says that at one time William Driver had 40 employees.

Returning to the start of the Driver men of Silsden becoming nail makers, the family involvement seems to have started in an informal way, recorded when Henry, N2, stated his employment to be a nail maker at the baptism of his daughter Hannah, in 1785, and a weaver at other times. His son John, O4, followed the same path being nail maker in some records and weaver at other times. However, in 1822 a directory for Silsden listed, under Nail Makers, the names of William Fortune, Robert Nightingale, W and H Spencer and Samuel Tillotson, but no Drivers.

Then in about 1834 William, P3, entered the business and for him it was a lifetime commitment. He was an apprentice probably for six years and

would have qualified in about 1842. He may have continued working for the same master for a while, but before long he would have set up his own facility and presumably had the other Driver nail makers working with him. The location of his smithy in the early days is not known. In later years it was in Highfield Lane. The first Methodist chapel was in Highfield Lane until 1870, when they moved to their new church in Kirkgate. The floor of the demolished building was then used by the Silsden Fire Brigade until 1908, when they moved into a new fire station in Kirkgate. Having been advised that the site of the Driver smithy was about half way up Highfield Lane on the west side and comparing the 1853 and 1909 maps it looks as if the smithy might also have taken advantage of the floor of the chapel.

As mentioned in William's narrative, number 19, becoming 'established' probably meant that he had set up his own forges and was ready to commission the supply of nails from additional nail makers. He had made arrangements for selling his product. He became established in 1848 and married in 1855 to the daughter of a Port of Lancaster excise officer. What we also know is that he became an exporter and importer to and from the colonies, which were probably in Africa and the West Indies. Could these exports be via the Port of Lancaster? Some records of exports and imports from and to Liverpool from 1820 to 1900 do exist. These records may be statistical rather than individual shipment records. Also, the Leeds Liverpool Canal archives might provide evidence of William's business activity.

An insight into the nail making business as a whole comes from a letter written in 1844 by Charles Weatherhead. Charles, was a Silsden grocer but also a Primitive Methodist and much involved with village activities. He wrote to a friend concerning a mutual acquaintance, saying, 'Baron goes on with his book trading, and tries to catch a penny where he can, as nailmaking is going fast to the grave'. An initial thought was that machines were being introduced which would have concentrated the manufacture of nail making and caused many individual makers to close down. That

certainly was to come, but Charles was proved to be wrong by Kelly's Directory of 1893 which states, 'Nail making is extensively carried on here'.

The iron in the early and mid 1800s was made by a process that produced a malleable material which when white-hot could be shaped by hammering, now known as wrought iron, but it was relatively soft and fairly rust resistant. By the late 1800s the technology had been developed to produce harder, stronger iron with specific other properties, now referred to as steel, and these steel materials were much less suitable for handmade nail making. Nail making machines had first become available in the 1830s and the William Driver business was one company in Silsden that had made that change. Roy Mason says William Driver was the only (*Silsden*) nail maker to use machines. The production rate would be increased and the machines would be better able to cope with the stronger materials. The new technology provided more consistent steel at a cheaper cost and most iron and steel works had made the change. William Driver Ltd may have made that change in order to supply to a developing mass market. Nevertheless, in the 1891 and 1901 censuses Sarah describes herself as a wrought nail manufacturer confirming that she is still using the wrought iron rather than steel material, but not necessarily only wrought iron.

It is not known when William Driver installed machines but it seems likely that it would be either around the 1870s or possibly after his death in the 1890s when the Ambler business at Canal Works ceased trading and their machines were presumably being sold. It is thought that the machines were sufficiently light weight to be moved if the need arose. It is clear that machines would eventually be located at Driver's Highfield Lane smithy.

In 1878 William died and in his will he instructed his executors to continue the business for the benefit of his wife, Sarah. Apart from a few direct legacies, his estate was to be divided equally amongst his children. His executors were his widow Sarah, his youngest brother Joseph and his eldest son John Morris. His prime asset was his business and that could not be interrupted until after Sarah had died. So the business was effectively in Sarah's hands for the next thirty years.

In 1908 Sarah died at the age of 77. She had written a will, see narrative 19, and the sole remaining executor of William's will, son John Morris, could now complete the administration of that will. The firm was sold to two members of the family for £7000 and the money distributed. It was now a private limited company and some family members would have used that money to purchase shares in William Driver & Sons Ltd. Frank Driver, Q6, who as early as 1908 seems to have established himself as the businessman of the family, became Director and Chairman, with John Morris, Charles, Henry Ripley and Mary Anne being Directors. The 1911 census shows that John Morris, now married, had moved back into the William Driver & Sons business and was said to be 'wrought nail manufacturer for boots and shoes, nail dealer and employer', while Charles was 'nail manufacturer, employer'. Frederick William, who married in 1910, continued to work as a nail maker and his brother, Hugh, became employed as a warehouseman in a mill, probably in Frank and Henry's business. The 1910 Silsden tax ledger shows Driver W & Sons to own its smithy and John Morris, living at the Grange Kildwick, to be owner of houses 12, 14, 16 and 18 Highfield Lane. Lord Hothfield was the owner of the slaughter house let to Ernest Spencer. The 1910 ledger also shows that Driver W & Sons had not yet acquired the warehouse at Canal Works. But by 1914 their warehouse and office were at Canal Works which was on the north side of the canal. It also advises that its telephone number was Steeton 41 ('Silsden 41', as printed in Grace's Directory, was an error). Mention is made of being importers, but there was still no indication as to what they might have imported.

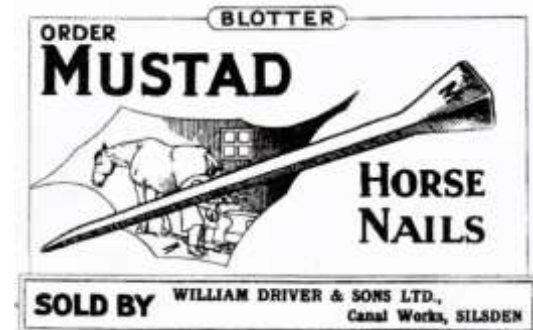
Four years later, Grace's 1914 Who's Who in Business shows:-

DRIVER (WILLIAM) & SONS. Ltd. Nail Manufacturers, Importers and Merchants. *Works:* Highfield Lane. *Warehouse and Offices:* Canal Works, Silsden. *Hours of Business:* 9 a.m. to 6 p.m. Established in 1848 by William Driver. Continued by his sons. *Incorporated* as a private Limited Company in 1908.

Directors: Frank Driver (Chairman), H. R. Driver, Charles Driver, J. M. Driver and M. A. Driver.

Specialities: Horse Shoe Nails, Bolts, Frost Cogs. Leather Factors, Boot and Shoe Bills, Cutlan Bills, and all kinds of nails for the Boot and Shoe trade. *Connection:* United Kingdom, Importers from and Exporters to the Colonies. *Telephone:* No. 41 Silsden. *Telegraphic Address:* "Driver, Nailworks, Silsden" *Bankers:* Bank of Liverpool, Ltd. (Silsden).

Horseshoe nails were often sold in sturdy wooden boxes measuring 13 x 5 x 7.5 inches which today make a most useful workshop storage facility. Two names on these boxes are Mustad and Capewell. Furthermore, from a copy of a William Driver advertisement while at Canal Works, we find that William Driver & Sons was selling Mustad horseshoe nails. On one Mustad box it says 25lbs (11.3 Kg). The question of what was he importing has now been answered and the boxes have been sitting on a shelf for a very long time waiting for me to read the names.



However, the Mustad family were inventors of a wide range of products from heated toilet seats to car engines and also the fishing tackle industry, expanding in many other countries.

The name Capewell of Great Britain led us to



Hartford Connecticut in the USA where George Capewell founded a company in 1881. He invented a machine that efficiently manufactured horseshoe nails, and his success made Hartford the 'horseshoe nail capital' of the world. This at a time when horses powered transportation worldwide. That company expanded in many other fields and sold its horseshoe nail business to Mustad in 1985.

It was thought that William Driver & Sons were importing horseshoe nails from both companies, thus answering the question of what were they importing from the colonies. However, both the Mustad boxes and Capewell boxes indicate they were made by their English companies. So, the question about importing remains uncertain.

Sometime between 1914 and 1917 William Driver & Sons moved out of Canal Works and into 39 Keighley Road, this is most likely to have included house number 41 Keighley Road and the land and building immediately behind, to which access was from number 39 and also from Sykes Lane. It seems as if John Morris had an office at number 39 and the warehouse was in the property behind. On moving to number 39, the William Driver and Driver Brothers joint telephone number of Steeton 41 at Canal Works was taken by the Driver Brothers' North Street Mills with William Driver & Sons taking the number 52. This number was the telephone number used by the previous occupants of number 39 Keighley Road, the printers Briggs Brothers. The date of the move might have been as early as 1910 if the Grace's Guide was not completely up to date.

Interestingly the other Driver family business, North Street Mills, is recorded in the same directory as having telephone numbers 41 and 42,



with 42 being at the mill in North Street with an extension to Moorfield, Frank Driver's home. This suggests close cooperation between the two businesses with brother John Morris being the link, firstly at the Canal Works and subsequently at 39 Keighley Road. It is possible that John Morris, in the office at the wharf and then at 39 Keighley Road, was representing both the William Driver and the North Street Mills businesses and presumably handling the receipt and despatch tasks for both companies.

It had been thought that telephone numbers 41 and 42 would have been installed at the same time, being adjacent numbers, but it was later discovered that number 41 had previously been used at premises in Cononley, while 42 was the Driver Brothers' number when they started their own business working at Airedale Mills. When William Driver & Sons moved out of Canal Works to 39 Keighley Road their telephone number changed to Steeton 52. It was to remain 52 or 2352 until William Driver & Sons finally closed in 1962.



The period 1920 to 1925 would have been the time that John Morris, Charles and Frederick William would have been thinking of retirement. Frank Littledale, having been demobilised in 1919 and probably since then learning the family business, was ready to take the helm. He was of the next generation and available to do so. In 1926 Frank L married Mina Wall and it is likely that she took an interest in the financial side, possibly having some guidance from her husband's uncle Frank.

The business progressed but it appears not to have generated sufficient income to support more than one family. We see from the North Street Mill ledger of 1920-23 that Frank owned 590 shares in Wm Driver & Sons and that the dividend was 10% in 1920, 21 and 22 but 5% in 1923.

The very brief entry in the 1927 Kelly's Directory reads '*Driver William & Sons Ltd. nail mfrs. 39 Keighley rd. T N Steeton 52*', and this was also the address in the 1920 Electoral Register for J. M. Driver. Keighley Road number 39 and adjacent property number 41 are on the corner of Sykes Lane, just south of the canal. No mention is made in Kelly's 1927 directory of Highfield Lane and this suggests that the business might have left Highfield Lane before 1927. They certainly had left Highfield Lane by the end of 1935. When the William Driver business moved out of number 39 that property was taken over by the other family business of Driver Brothers.

The company had an established business and clientele and had broadened its scope to supply leather, and materials and products required by blacksmiths, shoe makers and repairers.

By the time the next generation took over the change was complete. It was on 17th January 1935 that Wm Driver & Sons purchased a warehouse premises on the corner of Pickard Lane and North Street from Wm Gill & Son (Silsden) Ltd and presumably closed the Highfield Lane works. The sale document tells us that the warehouse was at one time used as a Clog Iron Maker's Workshop, and another document (a sketch map) shows the building even earlier to have been a brewery, and to have been used by Jim Boyes for his hand loom weavers.

It appears that the name 'Highfield Works' was transferred from Highfield Lane to this building in Pickard Lane. However, in the 1910 Ledger Pickard Lane is called Highfield Pickard Lane. Highfield was used elsewhere with Highfield being the name of the farm at the bottom of Bolton Road. At the time they relinquished use of the warehouse and office at 39 Keighley Road. The telephone number, Steeton 52, was also transferred to the new

Pickard Lane warehouse. We can be sure of this transfer since in the 1950s the telephone number of the warehouse, which had an extension to Frank's home, was Steeton 2352, the extra two digits being needed in the 1950s as the number of telephone lines increased.

At the new warehouse one man was employed, no doubt to take messages and orders, and to arrange and receive supplies. Frank L was meeting with customers and making deliveries much of the time and travelled up to North Yorkshire and Cumbria on a regular basis. He was 64 when he became ill and the company was wound up following his death in 1962. On 21st December 1962 the last asset of the William Driver business, the warehouse, was purchased by Driver Brothers Ltd and in 1973 was purchased by Mr A Jackson, the managing director of the North Street Mills and his wife and converted into living accommodation, the name being changed into Highfield House.

In the Castle Museum in Keighley is a display of nail making.

2. North Street Mills

This appendix includes a 1911 article on the Driver brother's North Street Mills business by Gentleman's Magazine and reports on three mill outings arranged by Frank during the post WWI years.

Traditionally the family were nail makers, and that was the occupation of William and Sarah's eldest son, John Morris. But sometime after the 1891 census he moved into the weaving business, as shown in the 1901 census. The second son died as an infant. The third and fourth sons, Charles and Frederick William, started work and remained as nail makers. However, the fifth son, Henry Ripley, started work, probably about 1879, as a woollen weaver and became an overlooker in the cotton trade, and then a manufacturer. Similarly, Frank, the sixth son, left school in 1883 and in the 1891 census is shown as a manager and salesman in the cotton trade.

In 1881 Jeremiah Walton, born in Bolton Lancashire, was a wincey manufacturer in Silsden and he and his family lived in Bolton Road. In the 1891 census he is shown as a dress goods manufacturer and that business

was located in Airedale Sheds alongside other businesses also using Airedale Sheds. This facility was on the west side of Kirkgate behind the Red Lion Hotel and Mechanics' Institute. Henry and Frank worked for Jeremiah but, in about 1891, they stopped working for him and, hiring weaving machines and power in the Airedale Sheds, started working for themselves. This might have happened in 1903 when Jeremiah died at the early age of 56. However, according to Grace's Directory of 1914, the family textile weaving business of Driver Brothers was established in 1897.

The next data we have shows that in 1898 they rented 'Room & Power' at the mill in North Street that James Boyes had created.

James Boyes was born in Mellor, Blackburn, in Lancashire, where in 1891 he was a Cotton Cloth Looker (an overlooker in Yorkshire parlance). In 1880 he purchased the old Primitive Methodist Chapel in North Street (vacated in 1871). We also read that between 1888 and 1892 he purchased additional land from Lord Hothfield on which a weaving shed and offices were erected. Help to finance this development was provided by a mortgage from the Craven Bank. In 1893 he was recorded in Kelly's Directory as Boyes & Sons, stuff manufacturer in Silsden. Then in 1898 he let part of his mill to Henry and Frank who were now requiring larger premises.

James in 1901 was still a manufacturer, now living at a large house called Briardene, in North Street opposite the mill. He was age 59 and, before the 1911 census, he retired. Henry and Frank built up their business, having purchased James' remaining interest in the Mill but also in 1906 buying the mortgaged property held by the Craven Bank.

The Silsden 1910 tax ledger shows James' wife, Margaret, to be the owner of 16 houses on the SE side of North Street, plus 3 in Chapel Lane and 5 in Chapel Street.

In 1911 James was still living at Briardene, in 1919 at 32 North Street and he died in 1922. His wife Margaret had died two years previously.

Road names had not been formally defined and before the chapel was built the road had been called North Street and, in some instances, Feather Lane, Fenkhill Street, Quarrel or Quarry Hill. The lower part, understandably was renamed Chapel Street when the chapel was built. However, this chapel building became North Street Mills. This steep part of the road has informally been called Boyes Hill and then Driver Hill.

In about 1908 Courtaulds commenced manufacture of cellulose acetate (viscose) artificial silk. Henry and Frank cooperated with Courtaulds developing new woven fabrics and in 1910 they were chosen to represent the Bradford Chamber of Commerce at an exhibition in Brussels.

It is possible that their eldest brother, John Morris, joined them for a while since the 1901 census shows him to be Manager Worsted manufacture Cotton and Wool, but not for long as by the time of the 1911 census he had returned to nail making. In 1908 their mother, who had been running the other family business of William Driver & Sons, died. It was initially thought that the changes in occupation of John Morris would have been distinct changes of employment, but as an understanding was gained of the Canal Works and the move to 39 Keighley Road and their telephone numbers were traced, it seemed that John Morris had his feet in both family businesses. Now, as William's sole surviving executor, John was the owner of that nail making business and he needed to administer his father's will.

Returning to Driver Brothers, in 1914 Henry Ripley retired, leaving Frank in sole charge as shown in the following article.

From the London Gazette, 1914

NOTICE is hereby given, that the Partnership heretofore subsisting between us, the undersigned, Henry Ripley Driver and Frank Driver, carrying on business as Cotton and Wool Manufacturers, at North-street Mills, Silsden, Yorkshire, under the style or firm of " DRIVER BROTHERS," has been dissolved by mutual consent as and from the 31st day of March, 1914. All debts due to and owing by the said late firm will be received and

paid by the said Frank Driver.—Dated the 6th day of May, 1914. HENRY RIPLEY DRIVER. FRANK DRIVER.

Frank's son, Norman, who had been at Rugby School from 1920 to 1922, left school early probably in order to learn the business. It is known that he did not enjoy his days at Rugby. Frank died in 1935 and Norman became sole owner. The business continued until it was forced to close by competition mainly from low cost overseas sources. The North Street Mill Timeline explains the history of the mill over the 95 years of its existence.

During its earlier years the business also acquired several other properties in Chapel Street and North Street. These were mainly cottages but also the house that had been the residence of James Boyes known as Brierdene. It may be that Frank purchased much of Margaret and James Boyes' properties at or before their deaths in 1920 and 1922. For a period, after 1919 when James and Margaret moved into 32 North Street, Brierdene was used as a canteen for the workers of the mill. The mill ledger has a



Drivers Brothers North Street Mills offices and warehouse 1910

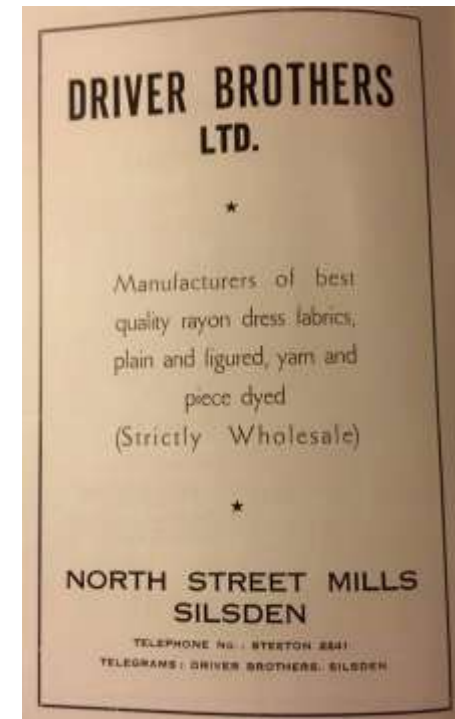
Brierdene Purchase Account with a single entry 'Dec 14th 1920 £1250'. During later difficult years these properties tended to be sold one by one.

Grace's 1914 Who's Who in Business

DRIVER BROTHERS, Dress Goods Manufacturers, North Street Mills, Silsden, *via* Keighley. *Hours of Business*: 7 am to 6 pm; Saturdays, 7 am to 12 noon. *Established* in 1897 by Henry Ripley Driver and Frank Driver, the present principals. *Premises*: Extensive, containing 350 Looms. *Staff* 230.

Bradford Warehouse, 35, Swaine Street. *Branches*: London, 7, Bell Yard, Carter Lane, E.C.; Manchester, 4, Aytoun Street; Glasgow, 24, St. Enoch Square. *Specialities*: Fancy Artificial Silk, Silk, Worsted and Cotton Figured Dress Goods, Voiles, Blouse Cloths, Zephyrs, Moreens, Delaines, Printing Cloths in Cotton, Union, and All Wool; Union and Cotton shirtings, Ceylons, and Pyjama Cloths.

They were selected by the Bradford Chamber of Commerce to furnish patterns illustrating the class of fabrics manufactured in the Bradford District for the Brussels Exhibition, 1910, and for the Milan Exhibition, 1911. The exhibit at Brussels was awarded a Grand Prix, together with the special congratulations of the Jury. *Patent* Frog or Heater for loose Reed Looms to prevent breakages. *Connection*: United Kingdom, Foreign (especially United States and South America, India, China, Japan), Colonial.



Telephones: Nos. 41 and 42 Steeton_ *Telegraphic Address:* "Driver Bros., Silsden." *Bankers:* Bank of Liverpool, Ltd (Silsden).

This tells us that in 1914 the Driver Brothers business was accessible on Steeton 41 and Steeton 42, with 42 also linked to Frank's home Moorfield. After the death of Frank in 1935 Norman was still living at Moorfield. However, in 1951 Norman married and he and his wife, Molly, moved to live in Ilkley. His mother Elizabeth went to live near her daughter in Glasgow, so that phone link was no longer relevant and the number 42 was relinquished. The mill retained number 41 until it closed in 1993.

Because of the insight into the employment provided by a weaving mill, the following list is included which gives details of 258 employees at William Wright's textile mill in Wright Place, Silsden, as given in the 1851 census of Silsden. (HO 107/2287 folio 34 page 2)

2	spinning overlookers
2	weaving power loom overlookers
5	dressers of warps
4 boys, 26 girls	full time or above 13 year old spinners
15 boys, 17 girls	half time above 8 years old spinners
89	power loom weavers, worsted & cotton goods (girls)
58 male	wool combers
35 female	wool combers
4	wool sorters
1	manager or book keeper.
258 Total.	

For comparison, but 63 years later when the machinery was better developed and ran faster, the North Street Mill was stated by Grace's Directory in 1914 to have 230 staff. This technical development continued to gather pace during the subsequent decades.

The importance of the textile industry to Silsden is brought home when we read that over time there were 9 such mills in Silsden, 26 in nearby Keighley and countless numbers across Yorkshire and Lancashire.

The early days of North Street Mills are best summarised by hand written notes made by Norman Driver. They are quite detailed and indicate that work was not just confined to North Street.

These notes ended in 1955 and having had the good fortune to become acquainted with the retired manager of the North Street Mills up until closure in 1993, I asked and he very kindly agreed to pick up the thread and complete this piece. However, he spoke at some length and feeling about the period leading up to the planned and announced closure, by which time the number of employees had been reduced to about 55, and about that closure plan being thwarted by the bank foreclosing three weeks earlier. The timeline is provided at the end of this appendix.

Even better insight into the business in the early and middle years of its existence are provided by the next many pages which are from the Gentleman's Magazine of September 1911 and of three other events, celebrations captured in photographs. The Mill Ledger, referred to elsewhere, although prepared by the mill staff, relates to Frank Driver and his family and does not contain any mill business entries. It has provided a little insight into their family life at Moorfield.

The last 30 or so years of the business were particularly difficult and are an illustration of the UK's national decline in its wool, cotton and manmade fibre textile manufacturing industry.

The Gentleman's Journal

September 29, 1911.

THE WEAVING OF ARTIFICIAL
SILKS, DRESS GOODS,
SHIRTINGS, etc.

Messrs. DRIVER BROTHERS, North

Street Mills, Silsden, near Keighley.

By J. G. KETCHEN, Chief Sub-Editor, and Member Press
Gallery, House of Lords.)

*"The web enwraps the beam, the reed divides,
While thro' the wid'ning space the shuttle glides,
Which their swift hands receive; then, poised with
lead,
The swinging weight strikes close th' inserted
thread ;
Each girds her flowing garment round her waist
And plies her feet and arms with dextrous haste."*

OVID

THIS word picture by the old Roman poet could almost be read for a description of modern weaving if one but remembers that the manual has given place to the mechanical. Weaving is the art of intersecting fibres into web – as cloth was formerly called. The basis is the warp threads which run longitudinally from end to end. Across these, from side to side, run the weft threads, and it is the intersection and the interlacing of the two series of yarns which make the



fabric. We have recently been privileged to see the weaving of beautiful fabrics, a description of which very properly finds place in this series of the British Industry articles.

There is no doubt that in the matter of artistic excellence in woven fabrics, the foreigner long held the position of honour, for he could and did evolve creations that fascinated and attracted. Then came the artist-craftsman into the ranks of British manufacturers – the man who could design and produce fabrics equal to those that came from France or the Far East, and though his fight against prejudice was stern and strong, he came to stay. But after all, memory is a great tyrant, and when we saw in great West End shops fabrics rich and rare in appearance, we at once set them down as of foreign make. But we were corrected and told they were made in Britain, and few enquiries revealed the fact that they came from a quiet Yorkshire Town of the name of Silsden, lying in the Airedale Valley between Keighley and Skipton, a valley that even to-day speaks of its existence in the ice age of the world, and from the North Street Mills of Messrs. Driver Brothers. So we presumed to write and ask for permission to come and see the making of the fabrics that seemed to us the crown of the artist-craftsman, and receiving a favourable reply to our request, we went to Silsden to see the processes from start to finish.

Messrs. Driver specialise in the manufacture of all kinds of artificial, plain and fancy silks, and though they weave many other kinds of fabrics, it was these that particularly attracted our attention, for they came upon us as vision of idealised beauty. Imagine fabrics perfect in pattern, with a marvellous harmony of colours, delicacy of hue and softness of handle that at once arrested attention and compelled

inspection. There is about them just that attractive suggestion of fragility combined with strength, that melting of one colour unconsciously into another that is akin; nothing to startle, but everything to interest – a perfect creation of artistic excellence. Light as gossamer, yet strong as silk; beautiful, yet useful; and designed to please the eye and satisfy the most fastidious taste – a triumph of the artist and the manufacturer.

What it cost Messrs. Driver Brothers to achieve success in the matter of anxious experiment and large expenditure the outsider can never learn, but after years of work success has come, and Britain to-day, by their efforts, stands at the top. But, past successes are unheeded, and the firm are always on the alert not merely to supply the demand, but to anticipate, or even create it, for we saw in the making beautifully designed and executed fabrics that are intended for the market in 1912. They make a point of never showing a novelty in two successive seasons, and by frequent visits to Paris and London they are able to gauge the possible requirements of fashion a year ahead. Just now they are turning out over 1500 pieces of 45 yards every week.

They are also manufacturers of dress goods and blouse cloths in silks, worsteds, cottons, and unions. They make, too, linings, zephyrs, moreens, wool, and cotton prints; delaines, shirtings, ceylons, oxfords, and pyjama fabrics, and from the commencement their looms have never known what it is to work short time, and they have always had larger demand for their manufactures than they could supply. Their goods are used in the home trade, and go in large quantities to South America, South Africa, Australia, and the United States, helping, wherever they are, to give force to the motto, "British and Best."

It needs only a visit to such weaving sheds as those of Messrs. Driver Brothers to upset the popular fallacy of the littleness of man. The first shock is in the engine-room where one gets a vision of the majesty of power of the human mind. It is stupendous to think that a brain should have planned, and small hands made the gigantic fly-wheel and should have fashioned the engines that set it whirring to drive the countless frames and looms that throb and grind through the rooms and sheds. The feeling is deepened as one realises the untiring precision, the almost conscious action and the transforming, creating force of these pulleys and cog-wheels, shaftings and shuttles, for it is not merely manufacture — it is art-magic — creation by evolution, set not in the primeval silence that in the Stone Age brooded over this very valley, but framed in a rushing, pulsing, clicking, buzzing storm that deafens, dumbs and amazes. Then, when one follows step by step the processes of manufacture, one is lost in wonder at the delicacy and ingenuity of which this organised tumult is the audible and eloquent expression.

The raw materials used by Messrs. Driver Brothers are, cotton, artificial silk, silk and wool. We picked up some of the bobbins of cotton yarn, and here again there was a return of the vision of the power of man. This long straight thread had been evolved from a fluffy, fibrous, tangled mass, each fibre of which had diameter of $\frac{1}{2000}$ part of an inch that under the microscope resembled a flat ribbon twisted like a stick of barley sugar.

The weft yarn comes ready for the shuttle, but there are a number of processes through which the warp yarn has to pass before it can go into the weaving shed.

The warp thread is received in ball, after having been sized or dyed, and is then put through the process of dressing. Throughout this process the relative positions of the threads must be retained at a uniform tension all the time they are being wound on to the weaver's beam.

Then follows beaming, that is, the transference of the warp threads from bobbins to a beam, and this is done by means of a creel, upon which some 500 bobbins are placed.

We are told that speech is impossible in the Weaving shed, and so before we go in we are informed of what we shall see. It is essential to all weaving that the warp threads running the length of the piece should be lifted in sections, so that the shuttle may pass over some and under others. In the simplest type of weaving the shuttle passes at one stroke over the odd and under the even threads of the warp, and the next stroke over the even and under the odd. Different weaves of colour and pattern are secured by varying, *ad infinitum*, the way in which weft and warp cross and recross one another. In the construction of many of Messrs. Driver's elaborate figured fabrics, it is necessary that each warp thread, or at any rate that very many small series of warp threads should be under separate control, so two special types of looms are largely in use, the Jacquard and the Dobbie. The ordinary and dobby loom does its work by means of healds and heald shafts. The healds are vertical wires each with an eyelet hole in the middle fixed at the top and bottom into horizontal shafts, which are placed in the loom to be wound and the back beam which carries and pays out the warp threads. For plain weaving only two sets of healds are required. Through the eyelets of one set are passed the even threads of the warp, and through the eyelets of the others the

odd threads. When the healds containing the even threads are lifted and those with the odd threads lowered, a < shaped space known as "a shed" is made, through which the shuttle passes. But the difficulty is that only very few shafts can be placed over a loom, and so in most of Messrs. Driver's manufacture the ordinary loom is useless.

The Jacquard loom, instead of shafts and healds, has so-called harness cords hanging in several rows from a framework. Each cord has an eyelet at the level of the warp threads, and each is kept taut by a weight. Each warp thread has its own cord, just as each has its own heald when shafts are used. These cords are attached in groups to vertical wires in the upper framework, which are raised or lowered in the proper order automatically by the Jacquard cards. It is perfectly easy to have 300 such wires above loom, thus allowing designs of any degree of elaboration to be executed.

In the "dobbie" looms the raising and lowering of the heald shafts is done by horizontal lifting bars in the upper part of the loom, controlled by lags and in one way or another the wires or levers that work the shafts are connected with these lifter bars.

Walking out of the open air into the weaving sheds one is struck dumb and almost deafened with the noise that so suddenly assails the ear. Three hundred looms, all banging their shuttles from side to side with lightning-like rapidity. Three hundred looms with three hundred gleaming sheets of fabric growing into being. Three hundred looms tended by neatly dressed girls and women and healthy looking men who have time enough to scrutinise any visitor that may rudely intrude. "Swifter than a weaver's shuttle" wrote the ancient sage who watched the hand workers of his day, but what would he have said of shuttles that went

backwards and forwards 120 times a minute. To stand by a loom with the thousands of threads of its warp being slowly unwound in precise and parallel order from the beam at the back of the machine separated midway by the healds, is an impressive experience. With each fling and convulsive reverse of the strapped arm the shuttle flies through the warp with speed that defies the eye, adding yet another thread or pick. Yet the machine is automatic, and those who tend it have only to clear up and repair broken ends and insert a fresh cop of yarn in the shuttle when the previous one is exhausted. There is row upon row of these mighty monsters in the North Street Mills, each with its revolving wheels, flying shuttles, vibrating straps and rods, all seen in a mass that dims the sight. As the fabric grows in each it is wound upon the slowly revolving beam in front of the loom.

"The men behind the gun" are two brothers, Mr. Frank Driver and Mr. H. R. Driver. They commenced business in 1897, and it is typical of their character that they finished work employés of another mill at 11.30 in the morning and begun work in their own at 1.30 of the same day. They rented room and power in the Airedale shed, but the growth of the business soon necessitated removal to more extensive premises at North Street Mills. They now own and occupy the whole of these Mills and have branches in Bradford, London, Manchester and Glasgow.

Apart from the steady increase in the demand for their manufactures, perhaps the greatest compliment was paid them by their selection by the Bradford Chamber of Commerce to supply patterns representing the artificial silk goods made in the Bradford district for the Chamber's exhibit at the Brussels Exhibition held in 1910. Here they received Grand Prix from the jury, in addition to special comment on the

excellence of the fabrics. They were selected again by the Bradford Chamber of Commerce to furnish a still more extensive show of their productions of artificial silks for the Turin Exhibition now being held.

Apart from the ability of the principals, there are other factors that have made success possible, and one is, the up-to-date equipment of the Mill. Both partners are impressed with the idea that the best can only come from the best, and so there is an installation of the latest word in technical and engineering science. Each class of loom is the best of its kind, and is relied upon to turn out better work than any other could. Then, too, there is the good feeling of respect and comradeship between the firm and its work-people. No effort on the part of the employers has been spared to make the sheds ideal work- shops, where a working day can be spent healthily and happily. We have seen workshops in many parts of Britain, and it needed no prophet's eye to tell the tale of the sullen, unhealthy faces of the workers in some of them, but we saw none of this at the North Street Mills, where the saucy eyes of happy girls looked into ours, and men moved about their work with that ease and comfort that spoke of physical contentment. Such feeling could only exist and grow where there is a generous "give and take" policy on both sides, and we were glad to see for ourselves that Messrs Drivers' policy is not one of merely making money, but includes that thoughtful consideration for their workers which makes them friends and allies.

Mr. Frank Driver is an instance of the fact that the world's work is done by busy men, for though he has had to work hard to establish his business, he has found time to devote to public matters. He is a member of the Silsden Council; has been Chairman of its Finance Committee, and is Vice-Chairman of the Council

this year. Politics attract him a little and he is President of the local Conservative Club, but his heart perhaps is more in his work as representative from the Council on the Old Age Pensions Committee at Skipton. He is interested in sport and has for years been the Captain of the Silsden Cricket Club and is Chairman of the Trustees for the local Cricket, Football and Bowling Clubs' ground recently acquired at a nominal rent. Mr. H. R. Driver has found his recreation in cricket, and after playing 30 years for the Silsden Club has just made up his mind to retire. Of a mechanical turn of mind, he has several patents to his credit. Two important ones used in the Mills are a loose reed frog, to avoid breakages in loom, and a patent spindle for giving longer life to picker and less liability to dirty pieces. Mr. F. Driver is also Chairman of the Directors of the old family business of William Driver and Sons, Ltd., Nail Manufacturers and Iron Merchants and Mr. H. R. Driver is also one of the directors.

We came from this Mill with feelings of keen pleasure for there was not a jarring, discordant note in our mind. We had seen British Industry at its best and one that has redeemed the name of Britain from the slur that it lacked the mind and touch of the artist-craftsman. And yet in spite of their triumphs we had found the principals to be men who felt that, after all, they had only worked and won and were not puffed up with their successes.

Note. At the time of this article, in 1911, Henry R was 47 and Frank was 43. Henry had married in 1902 and Frank in 1904. Each had three children. The partnership was dissolved in 1914. The business passed to Frank's son, Norman Driver, in 1935 on the death of Frank.

In July 1919 a day out for employees was arranged. It was mid-summer and WWI had ended the previous November. This day out involved a visit to the Lake District and a boat trip on Windermere. A description provided by Yvonne Bruce tells us that six charabancs took the party to Lake Side, where they tucked into 'a substantial dinner' at the Pier Pavilion before sailing up the lake to Ambleside. Calls were made at Kirby Lonsdale and Settle on the way home. It was a day to remember. They had left Silsden at 7.30 in the morning and didn't get back till midnight. As the local press reported, they had 'enjoyed themselves immensely'.



For page 232 to page 240 of Appendix 8 please see Appendix 8b.