

SURREY HISTORY

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WRENSHAM AND DISTRICT LOCAL HISTORY GROUP.



Wodalming Framework Knitting Industry
Ford's 'Homes Fit For Heroes'
Material for Surrey Historians

James Pain & Sons of Mitcham, Manufacturers of Fireworks
The Paper Mills of Surrey.

*Glenys Crocker
Mavis Swenarton
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Cover Illustration: Interior of William Paine's new hosiery factory in Godalming, 1922. (Courtesy of Alan Paine Limited).

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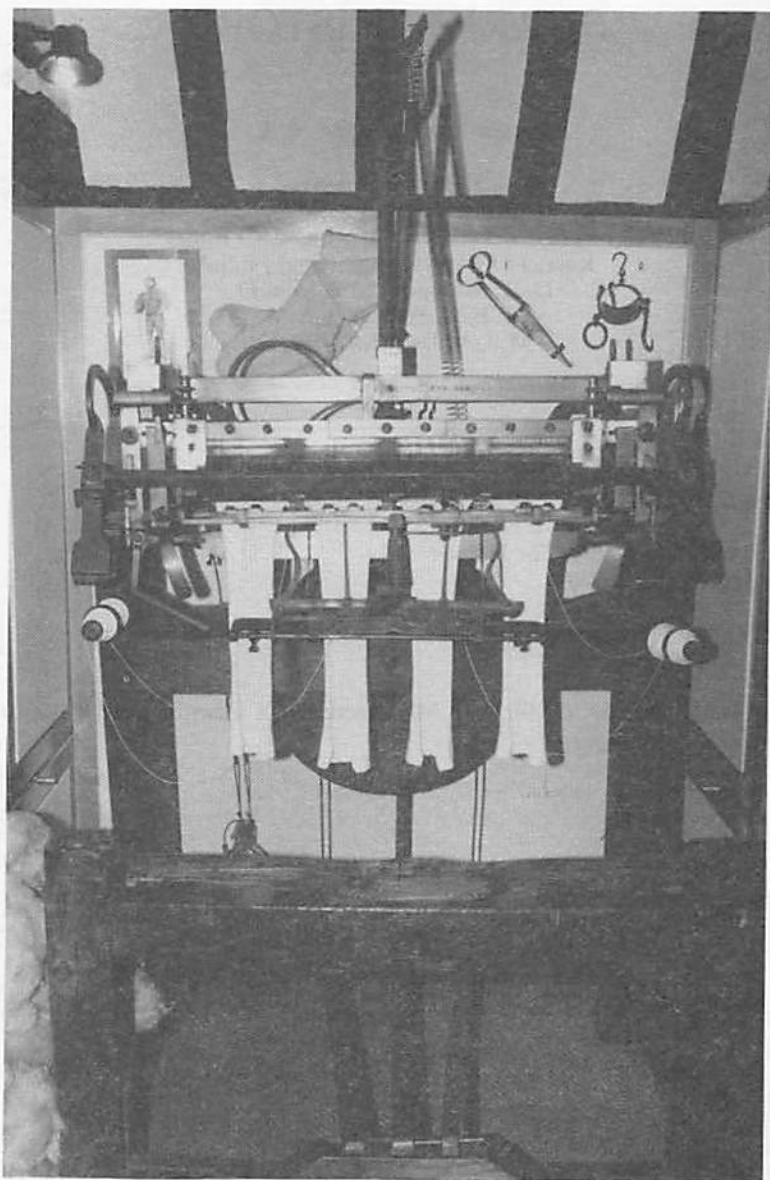


Fig. 1. Stocking Frame in Godalming Museum. The frame was presented to the Borough of Godalming in 1936 by Allen, Solly & Company of Arnold, Nottingham, who had operated in Godalming from 1860 to 1888. It was refurbished in 1988-9 by the Ruddington Framework Knitters' Museum, Nottingham. This particular frame was used to knit four stocking feet at once.

THE GODALMING FRAMEWORK KNITTING INDUSTRY

Glenys Crocker
Surrey Industrial History Group

The invention of the stocking frame

The year 1989 marks the quatercentenary of the invention of the stocking frame by William Lee. An example of the developed form of this machine is owned by Godalming Museum and is illustrated in Figure 1. The hosiery and knitwear industry in Godalming, which survives to the present day at the Riverside Factory of Alan Paine Limited, is a remnant of an early distribution pattern. Since the eighteenth century the industry has been largely concentrated in the East Midlands but its early development took place in London and in several outlying districts.

The life of the inventor William Lee is not well documented and conflicting accounts have been handed down regarding his life and career.¹ The accepted view is that he was born at Calverton near Nottingham and educated at Cambridge, and that it is doubtful whether he was, as legend holds, a clergyman. The Arms and Supporters of the Framework Knitters' Company, shown in Figure 2, features a stocking frame without its massive wooden stand and two figures. These two represent the inventor, in academic dress, and a woman with knitting needles who is said to have been the source of his inspiration. Lee's frame is not however a development of the two-needle method of knitting but is rather a mechanised version of the peg frame. This is familiar as children's 'French knitting' on a bobbin set with four nails. The same principle was formerly used, with a row of pegs, to make large flat items such as carpets.² Lee's stocking frame similarly produced a flat piece of work which had to be seamed to form a garment. Unlike weaving, which is carried out by interlacing two separate sets of threads, knitting is produced by the interlocking of loops in one continuous length of yarn. The machine has a row of hooked or bearded needles, one for each loop, which are set horizontally and fixed. The yarn is laid across the needle stems. Loops are made in the yarn by pushing it down between the needle stems by means of metal plates called sinkers, which are carefully shaped to manipulate the work. The new loops are pushed into the needle beards which are then closed by a presser bar, and the loops of the previous row of knitting are pushed over the ends of the needles to form a new row. The various movements are carried out against springs and are made by means of levers and treadles.³

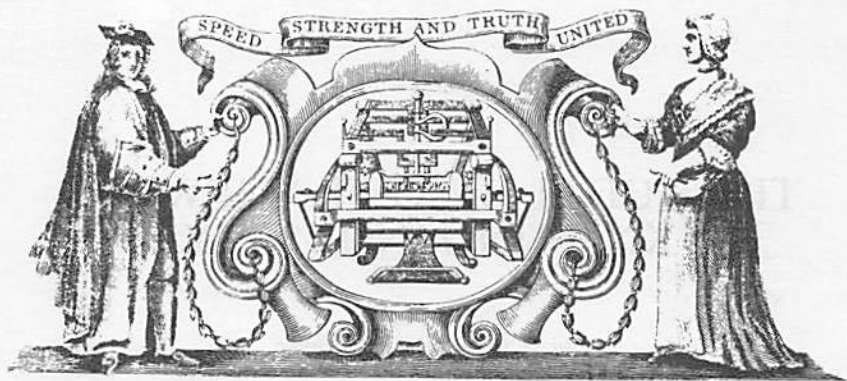


Fig. 2. The Arms and Supporters of the Framework Knitters' Company. (Reproduced by kind permission of the Worshipful Company of Framework Knitters).

The framework knitting industry

Two classic histories of the industry were written in the nineteenth century, by Gravenor Henson in 1831⁴ and by William Felkin in 1875,⁵ and these have provided the basis for most subsequent accounts.

William Lee worked on his invention in London during the 1590s. He failed to obtain the support of Elizabeth I, partly because his original machine could produce only coarse work and partly because it was seen as a threat to the livelihood of the hand knitters. He therefore accepted an invitation to work in France during the reign of Henri IV, who had ended the harassment of the Protestants and was actively encouraging industry. However the enterprise had scarcely begun when the king was assassinated. William Lee himself remained in France, where he is last recorded in 1614,⁶ but his brother James and most of their workmen returned to London and established themselves in Old Street Square. Shortly afterwards James Lee set up a second centre of production in his native Nottinghamshire.

Felkin implied that framework knitting spread to Surrey at an early stage in the development of the industry:

‘... the machine being so soon transferred to London, and to a particular spot Bunhill Fields Saint Luke’s, from whence its use radiated amongst other parts to Spitalfields, and after a few years to Godalming in Surrey . . .’⁷

However the earliest known named framework knitter in the area is Isaac Fortrie, who was party to a deed in 1681-2.⁸ His birth is recorded in the Godalming parish registers in 1648, which indicates that he would have entered the trade in the 1660s. Framework knitting spread also into other areas on the periphery of London and in 1664 there were 400 frames in the capital, up to 50 in the Surrey, Hampshire and Berkshire area and another 50 in Buckinghamshire and Hertfordshire. There were also 150 frames in the East Midlands by this time.⁹

Godalming Militia Roll

	Godalming Hun.	The Names	(Addition)	Age	When enrolled
1	Arlington	J. William Meads	Stocking weaver	22	19 th Sept 1758
2		William Baker	Shoemaker		27 th Nov. 1758
3	Godalming	George Woods	Stocking weaver	21	19 th Sept
4		John Mason	Shoemaker	27	
5		John Wilkes	Stocking weaver	20	
6		Thomas Eden	Do.	20	
7		William Strubb	Do.	21	
8		Thomas Hill	Do.	24	
9		James Swift	Stocking maker	36	27 th Nov.
10					
11	Turncomb	J. Henry Moore	Stocking weaver	19	
12	Labourn	J. Francis Burton	Shoemaker	24	
13	Turncomb	J. John Cuthingham	Wool weaver	35	
14	Shacklesford	James Wills	Stocking weaver	45	
15	Cushing	J. Charles Harris	Stocking weaver	21	
16		of Dover Street	Do.	22	

Fig. 3. Document Showing Names of Stocking 'Weavers' (Guildford Muniment Room, LM 1330/8, courtesy of Mr. J. R. More-Molyneux).

A number of crucial improvements had been made to the frame by about 1670 and by 1714 the number of frames in the country had increased by a factor of 13, made up of a 22-fold increase in the East Midlands and about an eight-fold increase in the London area.¹⁰ From 1714 onwards there was an absolute decline in south-east England and by 1782 nearly 90 per cent of the country's 20,000 frames were in the three counties of Nottinghamshire, Leicestershire and Derbyshire. The early industry produced luxury goods, particularly in silk. Later the worsted branch expanded, followed in the mid-eighteenth century by the development of cotton hosiery for the mass market. Nottinghamshire came to specialise in cotton, Leicestershire in wool and Derbyshire in silk hosiery, though not exclusively. Centres of the industry were also established in Gloucestershire and in Scotland and Ireland, and there was a small scatter of frames in many other areas.¹¹

The Surrey Framework Knitters

Gravenor Henson described the Surrey framework knitting district in the mid-eighteenth century as extending 'from Little London, a hamlet of Albury, unto Chiddingfold, upon the borders of Sussex'.¹² The main concentration was in Godalming but numerous references have been found to framework knitters or stocking makers in nearby villages. From the early eighteenth century onwards, references to Surrey framework knitters occur in large numbers in records of the Framework Knitters' Company, in Surrey

apprenticeship records, among the numerous deeds and wills transcribed by the late Percy Woods of Godalming and in other documents such as the Militia Roll of 1758, illustrated in Figure 3. The term 'stocking weaver' in this document is a misnomer, arising from the fact that weaving was the most familiar method of making textiles by machine.

Some of the earliest known framework knitters in Surrey came from substantial families. For instance, Isaac Fortrie was the son of Isaac Fortrie, Vicar of Godalming, whose family owned property in the district.¹³ To some extent framework knitting replaced the woollen industry which was in decline in the seventeenth century. Many framework knitters were from families which had previously been active in the cloth industry, such as the Bowler, Chitty, Hooke, Monger, Shrub, Toft and Woods families, and some came from other textile backgrounds, such as the Purchase and Edsell families which had been associated with linen weaving.¹⁴ However during the period 1711-1731 apprentices were drawn largely from south-west Surrey and most were of modest social standing, the largest group being sons of husbandmen.¹⁵ Several early framework knitters were described specifically as knitters of silk, which is consistent with Godalming's position in relation to London. Besides silk goods, worsted stockings were also produced and at least some of the yarn was made locally.¹⁶ Cotton hosiery was also being made in the district by the 1750s.¹⁷

The early industry appears to have been in the hands of small masters who worked for the London trade. Some achieved a degree of prosperity and several played an important part in civic life. Wardens of the Borough in the eighteenth century who can be identified with some certainty as framework knitters are Nicholas Monger, Henry Woods, Thomas Gilham, Robert Monger, Thomas Thatcher, Thomas Woods, Caleb Hackman and Edward Luck, together with Henry Holland who belongs to a later stage in the development of the industry. However, although some individuals became fairly prosperous it is clear that some of the property of framework knitters was inherited and that many of them had additional business interests. The industry went through many vicissitudes in the course of its history and periods of prosperity were relatively short-lived.¹⁸

The Worshipful Company of Framework Knitters

In the early years the industry had no governing body but in 1657 the Framework Knitters' Company was granted a charter by Cromwell and this was replaced by a Royal Charter in 1663. By the early eighteenth century a number of conflicts had arisen within the trade, particularly over the enforcement of apprenticeship regulations and over the demands which the Company made upon its members. The desire of some masters to distance themselves from the Company's control encouraged the movement of the industry from London to the East Midlands.¹⁹

The master framework knitters who appear in Surrey apprenticeship records are described as 'Framework Knitter of London' or frequently as 'Foreign Brother of the Framework Knitters' Company', a term used according to one source for members of City Companies who were not natives of London.²⁰ The Company aimed to regulate the trade through a system of apprenticeships, usually for seven years, after which the entrant was required

to take up his freedom of the Company, normally travelling to London to do so. However occasional courts were held in the provinces at which new members were admitted and existing ones paid their dues. One such court was held in Godalming in 1729 at which 57 members paid quarterage fees, and 30 paid at Odiham in Hampshire a few days later.²¹

Correspondence between the Company and Godalming masters survives, and is largely concerned with two disputes. In one case an apprentice named John Hart had been removed by his father from the service of his master James Toft, who had been ill-treating him. The Justices had ruled that the boy should be removed from his master's service, but 31 masters signed a letter to the Company asking whether it allowed apprentices to be taken away without its consent. The correspondence continued over a period of nearly two years, and it was eventually agreed that the boy should be bound to another master. The Company was also asked to intervene in the case of an apprentice named Thomas Denyer, who with three years still to serve had left his master to set up his own workshop at Mr. Willmore's worsted manufactory in Farnham, and was there employing a journeyman, one William Doval from Leicestershire.²²

Although in the 1720s the Godalming masters clearly looked to the Company to protect their interests, by the middle of the century they were uniting with those in other centres of the industry to oppose its efforts to control the trade. At the same time the industry was suffering from a problem of overcrowding which was later to become acute. The poverty of some framework knitters was already proverbial and their meagre earnings were diminished by working practices such as the charging of frame rents, which also had the effect of encouraging the proliferation of frames. Against this background, the Company had enacted new bylaws in 1745 and was making excessive demands on its members, including some who were in receipt of poor relief. Indeed it started legal proceedings against two pauper members in Godalming for failure to pay their dues. Both employers and workmen, and in the case of Godalming also the local ratepayers, allied themselves against the Company. A parliamentary inquiry was held in 1753 at which several Godalming men gave evidence, and this established that the Framework Knitters' Company had no power to enforce its authority.²³

Conditions continued to deteriorate and in the 1770s workers in many framework-knitting districts petitioned parliament to regulate wages, but without success. The framework knitters now looked to the Company as a focus for their campaign and a number of them were admitted,²⁴ including several from Godalming.²⁵ A parliamentary inquiry was held in 1777-8 and evidence from Godalming was given by Edward Luck. He stated that earnings had been falling since the 1750s, that many workers could not earn enough to support their families and were receiving parish relief, and that many good hands had left the trade.²⁶ The industry died out in Hampshire at about this time²⁷ and continued in the South-East only in London and Godalming.

Fleecy Hosiery

The parliamentary campaign to regulate wages had failed, but this episode was followed by a natural recovery. Foreign trade improved and there were

favourable changes in demand which were accompanied by several important technical innovations.²⁸ These included the development of fancy patterning, wide frames, machine-made lace, and the fleecy hosiery in which Godalming began to specialise.²⁹

One of the new decorative effects was twilled work which produced a lustrous striped fabric. This gave rise to the development of wide machines in order to knit vertically striped stockings sideways. Two exceptionally wide frames made for this purpose in London were nicknamed 'Gog and Magog'. Henson related that Magog was afterwards removed to Godalming to make fleecy greatcoats, and that 'the phenomenon James Whitehorn, who wrought in it for twenty years, drove it quicker than many slow hands move eighteen inch frames'.³⁰

A method of making fleecy hosiery was patented in 1788 by George Holland, a hosier of London, who set up the manufacture in Godalming shortly afterwards. Courses of unspun fleece were worked into a fabric made of spun yarn so that this had the appearance of ordinary knitting on one side with a fleecy coating on the other. An example of this type of work is shown in Figure 4. It was used for a variety of garments including stockings, gloves, coats, waistcoats and breeches and was recommended 'for persons afflicted with the gout, rheumatism, or other complaints requiring warmth, and for common use in cold climates'.³¹

The product enjoyed considerable success, which is reflected in a contemporary account of a Boxing Day procession in 1791. The workmen of Messrs. Holland & Co. walked in procession from Godalming to Guildford, where they were received with ringing of bells at the three churches and firing of cannon by order of the Mayor. They then returned to the White Hart Inn in Godalming to be regaled with a good dinner by the patentees. The procession was arranged in the manner of the St Blaise commemorations, which were held in many wool manufacturing districts at that period, Bishop Blaise being the patron saint of woolcombers. A man dressed in fleecy hosiery went at the head of the procession, followed by figures on horseback representing the bishop and his chaplain, a shepherd and a shepherdess carrying a lamb in a basket, several wool combers, a band of music and 140 workmen wearing cockades and ruffles made of fleece.³²

The size of the assembly indicates the large scale of the Holland enterprise, but the prosperity was not to last. Depression followed the Napoleonic Wars and for many years the framework knitting industry nationally suffered a deepening of the problem of overcrowding and its attendant ills. The period was one of worsening poverty, marked by the Luddite risings in the East Midlands during the second decade of the nineteenth century and by a series of government inquiries which culminated in the report of a Royal Commission in 1845.³³ The picture which this document presents is one of appalling social distress and of an industry in complete stagnation, a situation which did not improve until the adoption of the factory system. Framework knitting had been a domestic industry in which all the family were involved, men knitting, women seaming and children winding yarn. This system continued late, probably because of the vast pool of cheap labour which was available. Power-driven frames suited to factory production were not developed until the 1840s and even then were slow to be adopted.³⁴

The Godalming industry contracted during the early nineteenth century and

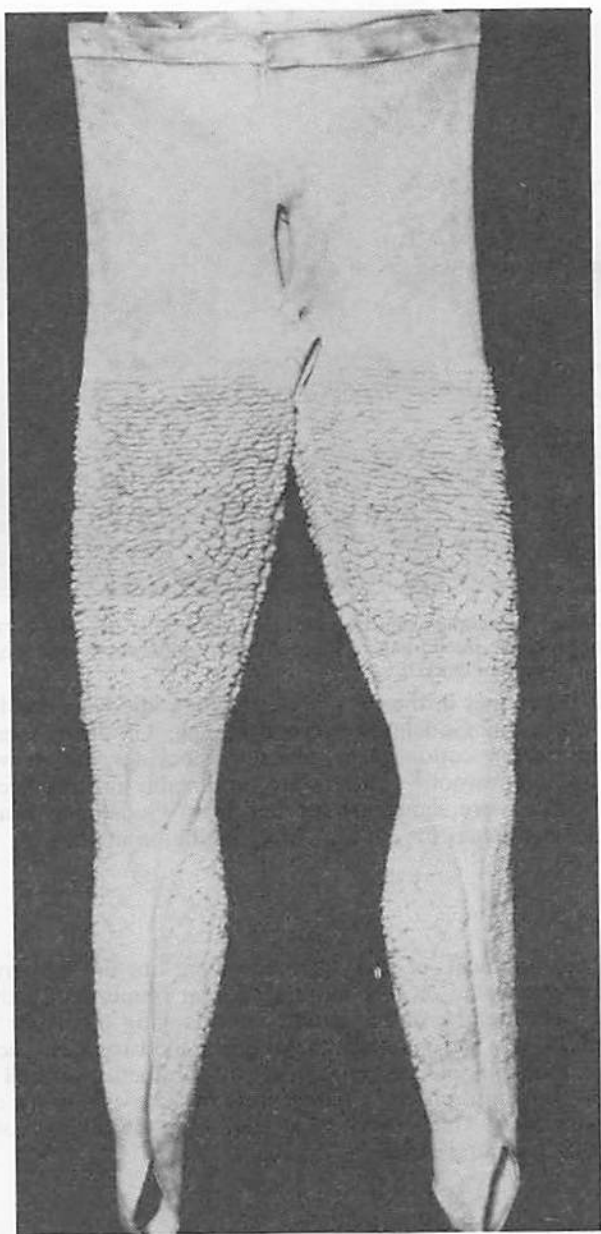


Fig. 4. Fleecy Pantaloons of the type manufactured in Godalming by Holland & Company (*courtesy of the Museum of Costume, Bath and the Editor of Textile History*).

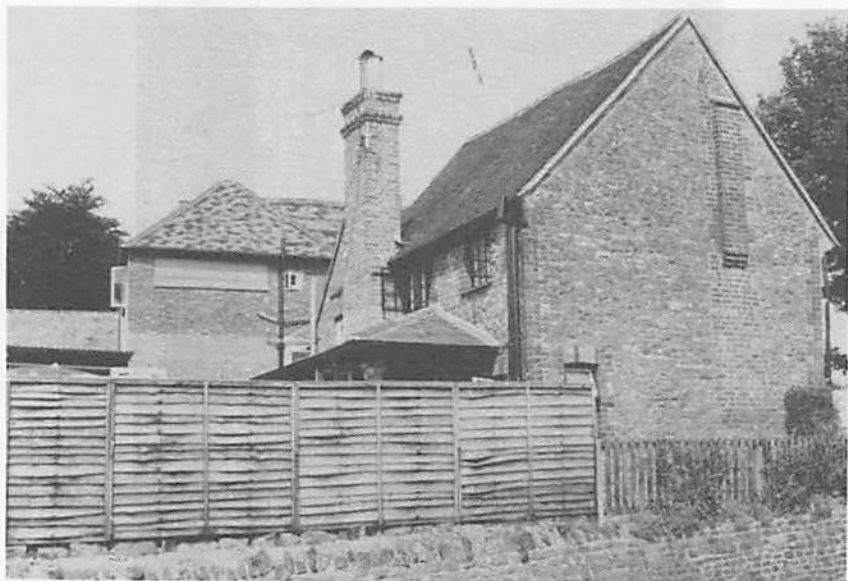


Fig. 5. Three-storey frameshop extension, with pyramid roof, at the rear of 22 Mint Street, probably dating from the second half of the eighteenth century. A typical long window on the top floor has since been blocked.

by 1833 half the frames in the town were standing idle.³⁵ In 1844, 55 out of 102 of the frames in Godalming were operating. Of these, there were 40 narrow frames making cotton goods, probably stockings, and 15 wide frames on worsted and lambswool.³⁶ These were presumably making fleecy hosiery, examples of which were shown by the two main Godalming firms, Thomas Holland & Co. and James Fry, at the Great Exhibition in 1851.³⁷

Frameshops

Before the establishment of the factory system in the hosiery industry, framework knitters would own or more often rent frames which they worked upon in their own homes, or in frameshops belonging to master framework knitters or others who had invested capital in the industry. One such 'stocking maker's shop' containing 43 frames was left by Elizabeth Marshall in her will in 1823.³⁸ A frameshop, probably dating from the late eighteenth century but with later extensions, which survives as part of a dwelling house in Mint Street, is shown in Figures 5 and 6.

Hosiery Factories

In 1851 when Thomas Holland & Co. showed their products at the Great Exhibition, the firm had recently moved from its old base near the High Street

Fig. 6. Front View of 22 Mint Street.
The top storey of the rear workshop was later extended over the front of the house.



**Fig. 7. Allen & Solly's Purpose-built
Factory in Mill Lane, erected by 1873.**

to the new Langham Factory in Catteshall Lane. The change may have been made in order to use steam-powered machinery. Certainly a steam engine was in use by 1863.³⁹ However by then the Hollands had retired and the business had been taken over by Nevill & Co. of London who made significant changes, in particular bringing in managerial and technical staff from Leicestershire.⁴⁴

In about 1860 a second hosiery factory was set up in Godalming by Allen & Solly, an old-established firm which until then had operated entirely under the domestic system in the villages around Nottingham. They worked in re-used industrial premises in Farnden's Yard, near the junction of the High Street and Bridge Street, but by 1873 moved to a new purpose-built factory in Mill Lane, which still stands as shown in Figure 7. However in 1888 the firm closed its operation in Godalming and moved to a new factory at Arnold in Nottingham.⁴¹

The Godalming hosiery factories evidently succeeded by concentrating on specialist products and luxury goods. Nevill & Co. continued to manufacture fleecy hosiery, one development of which was the production of gun sponges for muzzle-loading firearms,⁴² while Allen & Solly made fine silk hosiery and underclothing which they exported to North America and to the Empire.⁴³

Census Enumerators' Returns for the period show that the town attracted a number of skilled workers from the East Midlands, particularly in the decade 1851-61 when 24 single men and heads of households arrived, making up about one third of the male workforce. The Census also shows that many women were employed as seamers and finishers, often as outworkers, although they are clearly under-recorded in some of the returns, notably those of 1881. The extent of women's employment is however shown by the report of the party given by Allen, Solly & Co. in 1887, to celebrate Queen Victoria's Golden Jubilee. Supper was served in the ironing room and an adjacent workshop, where 'about 160 sat down, the guests being chiefly female'.⁴⁴

A few years after Allen, Solly & Co. left Godalming, Nevill's Langham Factory also closed, its last entry in local directories being in 1895. The premises were then taken over by the Godalming Sanitary Steam Laundry which had already been established adjacent to the hosiery factory.

Twentieth-century Knitwear

As the hosiery factories were leaving the town, another revival of the Godalming knitting industry was beginning, this time through the initiative of two firms of tailors and outfitters. The Pitchers family established their business in Godalming in 1885. The mother of the family, Lucy Pitchers, was an inventive woman who is credited with the design of a device for forming cable stitch on the hand knitting frame, for which W. T. Pitchers obtained an American patent in 1893. The firm began producing sports sweaters, as illustrated in Figure 8, particularly for Charterhouse School, which had moved to Godalming from London in 1872.⁴⁵ Pitchers acquired new premises at 46 High Street in about 1906 and another tailor, William Paine from Sevenoaks, took over their original workshop at number 72. Finding some knitting frames which had been left behind, he made a few experimental sweaters and when these were successful he went into production with some 20 to 30 workers and

PITCHERS,
46, **HIGH STREET,**
GODALMING.



Manufacturers of Gentlemen's Sweaters & Ladies' Knitted Coats,
Original Makers of the Charterhouse Sweater.

ESTABLISHED 1885.

Fig. 8. Pitchers' advertisement, 1913, showing cable stitch sports sweater (courtesy of Surrey Local Studies Library).

old cable-stitch machines, making sportswear for the club and school trade.⁴⁶

After the First World War, changes in social attitudes and in styles of dressing created a large market for comfortable knitted outerwear. Both firms built new factories and both expanded during the following years with export trade. William Paine's new factory, which is shown in the cover photograph, was built in Brighton Road in 1922. R. J. & A. R. Pitchers opened their new premises in Rock Place in 1930. The factory was extended in several stages, finally by Jaeger Holdings Limited which acquired it in 1961.⁴⁷ It closed down in 1970 and in 1989 is being demolished to make way for a new relief road.

Alan Paine Limited is still active, has an annual turnover of £13m. and is Godalming's largest employer,⁴⁸ with a workforce of around six hundred in recent years. Unusually for a modern knitwear company it has remained a private family firm. The business expanded steadily after the Second World War and in 1965 moved to large new premises at Godalming Wharf. The old factory was afterwards occupied by the English Chain Company Limited. Alan Paine Limited founded its reputation on high quality knitwear in conventional English style, but since the 1960s has invested heavily in design, while continuing to work exclusively in natural fibres. The firm has achieved notable success in the export of high quality menswear to Europe, North America and other parts of the world and has received three Queen's Awards.⁴⁹ More recently, Kent & Curwen Ltd. have established a factory in Farncombe. The firm makes heavy gauge sportswear on hand frames and their customers for cricket sweaters include the England touring team.⁵⁰

Since the late eighteenth century the knitwear industry in Godalming has survived through specialisation, particularly in high quality products, and the town's modern factories are continuing this long tradition.

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50. Information provided by Kent & Curwen Limited.

Acknowledgements

The author is indebted to John Janaway and Kenneth Gravett for valuable discussions, and to Alan Paine Limited and Kent & Curwen Limited for information on their firms.

GUILDFORD'S 'HOMES FIT FOR HEROES'

*Mavis Swenarton
Walton and Weybridge Local History Society*

Stoughton Housing Scheme

The Housing Act of July 1919 was passed to fulfil the pledge given by Lloyd George's government to build 'homes fit for heroes' for the troops returning from the First World War. The estate at Stoughton, developed by Guildford Borough Council, was one of the first built under the Act and the contractor for the 83 houses was W. G. Tarrant, Sons & Co. of Byfleet. Mr. Tarrant was a well-established local builder with a reputation for high quality materials and good workmanship; he was best known for his development of St. George's Hill Estate on land which he had bought from the Egerton family in 1911.

In July 1917 the President of the Local Government Board had been authorised to issue a circular indicating that substantial financial assistance would be available to local authorities who were prepared to carry out a programme of housing for the working classes, approved by the Local Government Board, immediately after the end of the war.

The Medical Officer of Health for Guildford reported in May 1918 on the number of houses in the Borough unfit for human habitation and at the same time a local Conference on Housing recommended the erection of a minimum of 500 houses, 250 in the first year after the war and a similar number in the second year. A number of possible sites were identified and in September 1918 members of the Housing Committee of Guildford Council devoted two Saturdays to inspecting 'the suggested sites for the erection of houses for the working classes'; subsequently negotiations for purchase were started.

On Armistice Day, Monday 11th. November 1918, the Housing Committee met and recommended the immediate preparation of a scheme for the erection of 300 houses for the working classes, about 80 at Stoughton and the remainder near Farnham Road. The Committee also recommended the purchase, provided the price was reasonable, of eight acres of land at Stoughton and that Mr. E. L. Lunn be appointed Architect and Surveyor for the scheme. Edward L. Lunn, a local architect, had been appointed Acting Borough Surveyor, Guildford, after Mr. E. Young Harrison, Borough Surveyor and Engineer, had been granted leave of absence in January 1917 to take up a commission in the Royal Engineers.

By December 1918 a price of £1,750 for eight acres of land at Stoughton was agreed and provisional plans were drawn up for the layout of the land and the design of the various types of houses proposed. Unfortunately the plans of the houses and the original plan for the layout of the land have not been traced. A sub-committee was set up to consider the plans and before the end of the year the Housing Committee recommended that they be adopted.

Under the scheme 85 cottages of eleven different designs would provide:

- 4 cottages with four bedrooms and a parlour,
- 50 cottages with three bedrooms and a parlour and
- 31 cottages with three bedrooms without a parlour.

Mr. Lunn was instructed to proceed with the plans, specifications and estimates for submission to the Local Government Board. Thus within six weeks of the armistice being signed, plans were well advanced for Guildford Borough Council to build 85 houses for the working classes.

In January 1919 Mr. Lunn reported good progress and general approval for the plans was received from the Local Government Board. The plans were open for inspection by the public at the Guildhall from 11 a.m. to 4 p.m. on Saturday 25th. January 1919. By the following month figures were available for the estimated costs, the total number of houses having been reduced from 85 to 82:

- Average cost of non-parlour cottages each £ 600.
- Average cost of parlour cottages each £ 750.
- 4 parlour cottages with four bedrooms each £ 895.
- Mean cost of 82 cottages of all classes each £ 684 5s.

It was emphasised that these figures were based on present costs, which might not obtain in three or six months time. Guildford Gas Company offered to put in slot meter installations at the cost of the Company and this offer was accepted.

The Housing Committee recommended that Guildford Council approve the plans and estimates and apply to the Local Government Board for sanction for a loan of £65,510 to defray the cost of carrying out the scheme. It was agreed to name the roads Shepherd's Hill and The Triangle, the latter for a reason obvious from the plan (Figure 1): when the estate was redeveloped in the 1980's the whole area was called Shepherd's Hill. The influence of the garden city movement is shown by the imaginative layout of the roads and the variety in design of the houses. On the main road, Shepherd's Hill, two circles opened out, the second and larger one having two pairs of three-storey houses as a dominant feature, with a pair of attractive two-storey houses on either side. In a Local Government Manual on State Aided Housing Schemes, it was stated that densities should not exceed twelve houses to the acre in urban areas and eight to the acre in rural districts; on the eight-acre site at Stoughton 83 houses were built, giving a density of slightly over ten to the acre.

By March 1919 the scheme was sufficiently advanced for the Council to contact the Director of Building Materials Supplies, Ministry of Munitions, who were purchasing on behalf of the government considerable quantities of the materials required, and seek sanction for the scheme from the Local Government Board. Within two weeks a reply was received giving approval for the scheme and expressing the President's hope that there would be 'early commencement of the work'.

Tenders for building and road making were considered at a meeting of the Housing Committee on 19th. May 1919. The lowest tender for building was £68,646 18s. 3d. from W. G. Tarrant, Sons & Co. Byfleet, followed by

£72,507 0s. 0d. from Kidman & Sons, Cambridge; fourteen other tenders were submitted, the highest being £93,070 from W.H. Gaze & Sons Ltd., Kingston-upon-Thames. Consideration of the tenders was adjourned for a reason that became apparent at a meeting held three days later. For road making the lowest tender was £4,609 9s. 3d. from Franks, Harris Bros. Ltd., Guildford, and this was recommended for acceptance. The next lowest was £4,900 from Hardy & Co., Woking, followed by £5,750 from W. G. Tarrant, Sons & Co., the highest being £7,769. At a meeting on 22nd. May Mr. Lunn, the architect, reported on an interview that he had had with Mr. Guest, general manager for Messrs. Tarrant, regarding the suggestion to give part of the contract to another firm. A letter had since been received from Messrs. Tarrant stating that this would be unfair as their tender was for the whole work; if the whole work were entrusted to them, they would guarantee completion of 40 houses in 4 months from the exchange of contracts and the remainder within 6 months. The Housing Committee then resolved that the tender of W. G. Tarrant, Sons & Co. be accepted, subject to the approval of the Local Government Board.

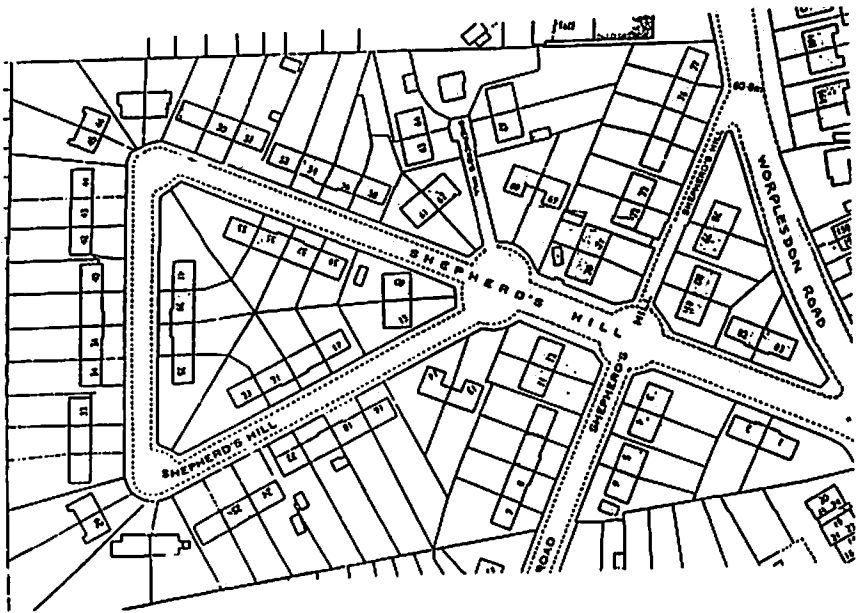


Fig. 1. Stoughton Estate: detail from 1982 Redevelopment Plan (courtesy of Guildford Borough Council).

On Thursday 12th. June 1919 Dr. Addison, President of the Local Government Board and the minister responsible for implementing the government's housing programme, cut the first sod at Stoughton. In a glowing account in the issue of 14th. June, the *Surrey Advertiser* reported that Dr. Addison had paid Guildford a marked compliment in coming to turn the first sod on the site on which 83 houses were to be erected, and there was a further compliment in his remark that he had come because he was anxious to

get in touch with those who were DOING something. Dr. Addison showed himself well acquainted with the manner in which time was wasted on negotiations for sites and in adjournments from one meeting to another.

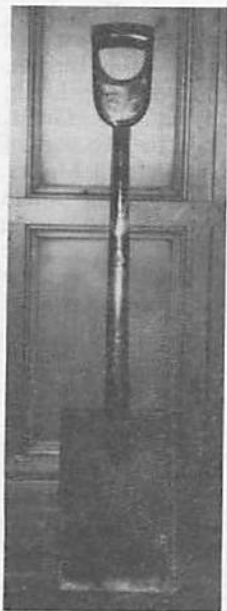


Fig. 2. Spade used by Dr. Addison, now in the Guildhall, Guildford.

The Ceremonial Spade

The large, heavy spade for Dr. Addison's use was taken by Harry Cawsey, a junior member of Tarrant's office staff, to Millmead House, the office of Guildford Borough Council. Tarrant's office and workshops were in Byfleet and Harry travelled by train from Byfleet station, then called West Weybridge, to Guildford and delivered the spade to the Council office, but he was not permitted to attend the ceremony.

Subsequently Guildford Council accepted with thanks the gift of the spade, suitably engraved, from W. G. Tarrant, Sons & Co. and ordered it to be placed in the Museum, the wording of the inscription being left to the Chairman. The spade has now been transferred to the Guildhall, which was reopened in 1987 after extensive restoration, and may be seen there. The spade, which is in excellent condition, has a polished oak handle and shaft, and a steel blade (Figure 2). It bears two silver plaques, the upper one bearing the words: 'With this spade the President of the

Local Government Board turned the first sod of the Guildford Corporation Housing Scheme at Stoughton on the 12th. of June 1919'. The one on the shaft was engraved with the names of 'His Worship the Mayor Councillor W. S. Taverner J.P., Councillor H. Fentum Phillips Chairman of the Housing Committee, 6 Aldermen, 16 Councillors, Architect E. L. Lunn, Lic.R.I.B.A., Town Clerk A. D. Jenkins'.

Progress and Problems

In July 1919 the Local Housing Conference requested information from the Council on rents to be charged for the houses at Stoughton and suggested that a public notice be issued inviting applications so that the number of houses needed could be ascertained; information was also sought on the principles on which selection of tenants would be made.

Also in July there had been an application from W. G. Tarrant, Sons & Co. for an increase in pay for bricklayers and labourers from 1s. 3d. to 1s. 6d. and from 1s. to 1s. 3d. per hour respectively. No decision was made pending a reply from the Government department concerned. However, on 11th. August there was a strike at Stoughton, the men leaving work at 1 p.m.; subsequently negotiations were started. It was not until November 1919 that approval was received for an increase and in the meantime further strikes had occurred, but



Fig. 3. Terrace of Houses at Shepherd's Hill before modernisation.

when the increase was finally sanctioned it was made retrospective to 23rd. August. The wages for mechanics were raised to 1s. 6d. per hour, for painters 1s. 5d., scaffolders and timbermen 1s. 4d., and for labourers 1s. 3d.: the award was for six months and three months notice was required of any alteration.

A plan for the second of Guildford Borough Council's housing schemes was put forward in July 1919. This provided for the erection of 230 houses near Madrid Road, off Farnham Road, and was called the Guildford Park Scheme. At the end of July a special meeting of the Council interviewed six candidates for appointment as Borough Surveyor and Mr. E. Miners was selected. No indication has been found as to the reason for Mr. E. Young Harrison, who had been granted leave of absence in 1917, not returning to his post. He was still listed in *Kelly's Directory* 1919 as Borough Surveyor and Engineer, Guildford, with Edward L. Lunn as Acting Borough Surveyor. The appointment of Mr. Miners was greeted with strong opposition on the grounds that he had not served in H.M. Forces and although the Mayor of Darlington wrote that he 'had been retained in civil life solely on the appeal of Darlington Town Council', Mr. Miners resigned. Subsequently William G. Cross, Assistant Borough Surveyor and Engineer, Richmond, Surrey, was appointed Borough Surveyor, Guildford.

In September the *Surrey Advertiser* reported that there had been 324 applicants for tenancy of the houses at Stoughton. Progress had been so rapid that it was anticipated that a block of three cottages would be ready for occupation by the end of October. There were 200 men at work on the site and 71 houses actually in course of construction. A sub-committee was set up to consider the terms and conditions of tenancy, the principles on which

selection would be made and the names of the persons selected to occupy the houses.

At a meeting on 13th. October the Housing Committee recommended that the rents, inclusive of rates, for the Stoughton houses should be:

Non-parlour, three-bedroom cottages	12s. 6d. per week,
Parlour, three-bedroom cottages	15s. per week,
Parlour, four-bedroom cottages	17s. 6d. per week.

In accordance with the suggestion of the Ministry of Health, prospective tenants would be informed that rents were subject to annual revision in an upward direction to two-thirds of an economic rent based on capital cost, the aim being that after 31st. March 1927 the rent would be sufficient to cover maintainance, management, depreciation and interest. Meanwhile the Government and Borough would have to make good the annual loss, the latter's share being limited to the produce of a penny rate. A list of prospective tenants had been prepared and the principles on which they had been selected were explained. It was reported that completion of the houses was being retarded by non-delivery of materials which had to be obtained through the Director of Building Materials Supplies, and by strikes.

A survey of housing in the Borough, required to be submitted to the Ministry of Health under the Housing and Town Planning Act 1919 before 31st. October, indicated the provision by 31st. December 1919 of 83 houses at Stoughton, which were already nearing completion, and 220 houses at Guildford Park by 31st. March 1921. This was in accordance with the recommendation made on Armistice Day for a scheme to erect 300 houses for the working classes, about 80 at Stoughton and the remainder near Farnham Road.

Cheaper Houses

The subject of cheaper houses had been under discussion by the Council and in the local and national press for some months. In October Mr. Lunn, the architect, reported to the Housing Committee on a visit that he had made to Braintree in Essex where the Unit Construction Company was building concrete houses. The design would effect a saving of £100 per cottage compared with the cost of the Stoughton houses; it was agreed that Mr. Lunn should submit a design for consideration under the Guildford Park Scheme.

Wooden houses were also under consideration, with the risk of fire having to be taken into account. In large towns a density of eight to ten houses per acre was considered to give rise to a fire hazard, but in rural areas with a density of four to six houses per acre the risk would be much less. The Ministry of Health was said to be favourably disposed to experiments with wooden houses. In November the Housing Committee considered a summary of information on the relative cost of different types of houses, including timber and asbestos, and decided not to recommend the purchase or erection of wooden houses. However, Mr. W.G. Tarrant, who had had considerable experience of building wooden huts for the army in the war and was under contract to the French and Belgian Governments to provide housing in the

devastated areas, invited the Housing Committee to inspect wooden houses already erected at Byfleet and offered to build two sample houses at a special charge. Members of the Committee inspected the houses on 17th. December and reported to a meeting on 22nd. December, but further consideration was adjourned.

It is probable that the 'wooden houses already erected at Byfleet' were a semi-detached pair in Oyster Lane. These houses were identical to those shown on a plan submitted to Walton-on-Thames Urban District Council in March 1920 for six wood and brick cottages to be erected in Ellesmere Road, St. George's Hill, Weybridge. The plan is marked 'Standardised Permanent Wood & Brick Cottages Type B by W. G. Tarrant, ensuring quick erection at lowest possible cost' and is dated 7/11/19; it is now held in Weybridge Museum. The six cottages were duly erected in Ellesmere Road and are still occupied and in good condition, as is the pair in Byfleet; several of the Ellesmere Road houses have been considerably extended.

Completion of the Scheme

On Saturday 6th. December 1919 the Mayor opened the first six houses at Stoughton and according to the *Surrey Advertiser* the lucky tenants could be in occupation, if they so wished, by the same evening. Dr. Addison, who had been appointed Minister of Health in July 1919, had been asked to open the houses, but, said the *Surrey Advertiser*, seeing that he had come in the summer to cut the first sod and had so many calls on his time, it was not surprising that he was unable to accept. Of the six houses ready for occupation, four were in one block without parlours and two were semi-detached with parlours; all six had three bedrooms. The *Surrey Advertiser* reported that while to the Corporation of Poole belonged the credit for having completed the first homes under the Government Scheme in the South of England, if not in the whole of the country, Guildford was a good second. Thus in under six months from the date on which Dr. Addison cut the first sod at Stoughton, six houses were ready for occupation despite problems over non-delivery of materials and strikes for higher wages.

On 6th. January 1920 Mr. Lunn reported to the Housing Committee that sixteen houses were occupied and a further thirteen would be ready for occupation by 24th. January. Attention was now turning to the Guildford Park scheme and Mr. Lunn was appointed Architect-in-Chief for the whole scheme and architect for 110 houses; three other architects were appointed to erect 40 houses each, making 230 in all. Mr. Lunn commented on 'the extremely good organisation at Stoughton', where building work would be virtually complete by the end of the month. If Messrs. Tarrant, Sons & Co. were informed by the end of January, they would be able to transfer their plant from Stoughton to Guildford Park and start building there by the beginning of March. The firm was prepared to build not less than ten pairs of cottages at £ 723 per cottage, or if the minimum number was fifty at £ 705 per cottage. It was agreed that, subject to the approval of the Ministry of Health, the offer to erect fifty houses at a cost of £ 705 each be accepted.

At a meeting on 12th. January the Housing Committee considered a long report from the Borough Medical Officer of Health on the houses to be

erected on the Guildford Park site. He had studied the number of persons in the families occupying houses at Stoughton and recommended that houses of smaller size and hence of lower cost and rent should be erected. He also suggested that two-storied cottage flats should be built for the small families; there would be a certain amount of inconvenience for those in the upstairs flats, but the upper floor would be healthier to live in; however, no such flats were built at Guildford Park. With regard to the four-bedroom houses, of which four had been built at Stoughton, he commented that it was the larger families who were least able to pay the higher rent.

Redevelopment

In 1982, just over sixty years after completion of Stoughton Estate, plans were drawn up for redevelopment and modernisation. A limited number of houses, being those with the largest gardens, were demolished and terraced houses and two-storied flats, implementing the suggestion made sixty years earlier, were built: space for car parking was also provided. Where a house was demolished, the replacement was required to provide accommodation for at least two families. By the end of 1988 redevelopment was almost complete, only one terrace of four houses still awaited modernisation (Figure 3), with work in hand on two pairs of semi-detached houses. These four houses were unique in being the only ones on the estate built of red brick and having cavity walls, all the other houses having rendered walls. Of the original two pairs of three-storey houses with four bedrooms, one pair has been modernised and the



Fig. 4. Modernised three-storey houses at Shepherd's Hill.



Fig. 5. Modernised two-storey houses at Shepherd's Hill.

other demolished; one of the adjacent pairs has also been demolished, but the other, now modernised, is still very attractive and is the only pair of this design on the estate (Figures 4 and 5). In January 1989 the average rent, including rates and water rate, for the houses was £ 37 per week; for the larger three-storey houses the rent was £ 42 per week.

According to an officer in the architect's department of Guildford Borough Council the houses on Shepherd's Hill Estate (Stoughton) were different from any others built by Guildford Council, having a larger floor area and being taller; also the difficulty of the larger families being least able to pay the higher rent for a bigger house is as applicable now as it was in 1920. In December 1988 a workman employed on modernising one of the red brick houses commented that it was very well built, a lasting tribute to W. G. Tarrant, the builder of Guildford's first 'homes fit for heroes'.

Epilogue

There is another connection between W. G. Tarrant and Stoughton as Miss Ada Cabrera, from whom he purchased Wentworth estate, is buried in Stoke Cemetery, less than a mile from Stoughton Estate. Ada was the youngest child of Don Ramon Cabrera, Count de Morella, and his wife Marianne, who bought Wentworth in 1854. The Count died in 1877 and when the Countess died in 1915, Ada inherited the bulk of the estate. An auction sale was held in 1920, but only a few lots were sold and from 1922 onwards W. G. Tarrant bought land from Miss Cabrera, developed Wentworth golf course and built

houses on the estate. Ada left Wentworth in 1917 and lived in Englefield Green for some years before moving to Hill House, Harvey Road, Guildford, where she died in 1934. Her grave is in the cemetery on the south side of Stoughton Road, surmounted by a granite cross; her companion of many years Agnes l'Oste Probart, who died in 1954, is buried in the same grave.

IMPORTANT DATES

- 11-11-1918 Armistice Day – Housing Committee recommended the immediate preparation of a scheme for 300 houses for the working classes.
- 23-12-1918 Purchase of 8 acres of land at Stoughton approved.
- 22- 5-1919 Tarrant's tender for the erection of 83 houses accepted.
- 12- 6-1919 Dr. Addison cut the first sod at Stoughton.
- 20- 9-1919 324 applicants for 83 houses – rapid progress at Stoughton.
- 6-12-1919 The Mayor opened the first 6 houses at Stoughton.

PRINCIPAL SOURCES

- Minutes of the Housing Committee of Guildford Borough Council 1918-1920, Guildford Muniment Room ref. BR/CMM/HOU/1.
- Minutes of Guildford Borough Council 1917-1920, Guildford Muniment Room ref. BR/CM/1/9.
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NEW MATERIAL FOR SURREY HISTORIANS

Accessions of Records in Surrey Record Office, 1988

David Robinson
County Archivist

Rebuilding Peper Harow in the eighteenth century

'Capability' Brown, the landscape gardener, was employed in the 1750s to landscape the grounds of Peper Harow for George Brodrick, 3rd. Viscount Midleton. We hold at Guildford Muniment Room a large amount of Peper Harow estate records, and we were therefore especially interested when three plans and elevations for rebuilding the house came up for sale at Sotheby's, attributed to Brown.

We were successful in purchasing the drawings for £3,000, with the aid of a 50 per cent grant from the Government Purchase Grant Fund. Then came the interesting part. Two of the plans, one of a 'semi-basement' and one of the main floor above, were by the same hand and the main floor plan bore the initials LB (Lancelot, i.e. Capability, Brown). The semi-basement plan was particularly interesting because it showed the relationship of the 'working rooms' of the house and the outbuildings at a time when a country house operated an independent domestic economy. The main building was to include the dairy, wash house and laundry as well as the kitchen and a series of cellars — strong beer cellar, ale cellar ('or it might be a good Billiard Room'), wine cellar and small-beer cellar. The brewhouse itself was in the nearer courtyard, which was divided into kitchen court, laundry court and poultry court, with three hog styes and storage for wood and peat. The further court, stable court, included the stables, coach house with granary over it, and enclosures for dung. Beyond this was 'a Place for Breeding Pheasants etc.' The third drawing, dated May 1752, was the elevation of the south-west front of a house of similar size and shape to the house shown on the plans, but not identical to it.

Mrs. Corke, the archivist in charge of Guildford Muniment Room, was able to relate these drawings to ones already among records deposited in the Muniment Room. One of these was the second storey of Brown's plan. Another was a pair to the south-west elevation, showing the south-east elevation. In addition there was a plan of the south-east gate leading to Eashing, almost certainly by Brown, and there were two elevations of a house with rustication and castellated towers in which the arrangement of the windows corresponded with Brown's plans.

It appears that the third Viscount Midleton decided to alter or rebuild Peper Harow in 1751, when he attained his majority, or 1752, when he married Albinia Townshend. The Muniment Room holds a plan of the old

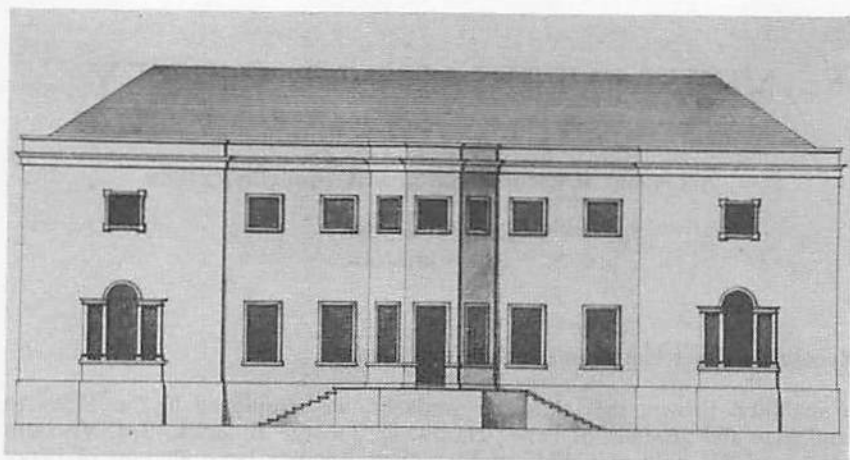


Fig. 1. Proposed Elevation for Peper Harow, 1752.

house and several plans showing different ways of using parts of it in a new design. It seems clear that at least three architects submitted plans in 1752 and 1753, including John Vardy, Henry Flitcroft and William Chambers. Brown's designs may date from this time or a little later, but must date from before March 1765 when Chambers was commissioned to build the new house. There are two poignant touches to this story. One is that the third Viscount never saw his house completed. He died in September 1765, only six months after signing the contract with Chambers. The other is that, as many of my readers will know, Peper Harow was badly damaged by fire this year (1989).

Another accession of Peper Harow records which we received, this time from the family, was the diaries of Augusta Mary, Viscountess Midleton (1828-1903), wife of William Brodrick, 8th. Viscount Midleton. The diaries cover 1855-1898 and although the entries for each day are quite brief they build up a picture of life at the time. Viscount Midleton was one of the first County Councillors and in January 1889 his wife refers to the first days of the newly-created Surrey County Council:

- 1st. January 'Midleton to Quarter Sessions for the last time under the old regime.'
- 24th. January 'Ld M to Newington for a meeting of the County Council to talk about "Aldermen etc."'
- 28th. January 'Ld M to County Council at Newington where they elected all the 19 Aldermen, most of them those Ld M wished for.'

Portmore Letters

The Curator of Weybridge Museum has deposited with us a group of letters sent by Lord Portmore and others to Francis Whishaw, surveyor, regarding the Portmore estate at Weybridge, 1800-1808. The subjects include claims to allotments under the Byfleet and Weybridge and Chertsey inclosure awards,

both for the Portmore estate itself and for the Wey Navigation of which Lord Portmore was a proprietor. There are also disputes about rights to timber and proposed sales and purchases of land. One letter of 15th. May 1807 from Job Smallpeice of Guildford regarding the Byfleet inclosure begins: 'From electioneering engagements I have been prevented attending to your letter . . .' The deposit of these and other archives by curators of museums in Surrey recognises the close links between the Record Office and the museums in preserving Surrey's past.

Baptists in Guildford

The records of Chertsey St. (formerly Castle Square) Baptist Church, Guildford, include minute books from 1744 to 1921, a trust deed of 1761 and early nineteenth-century almanacs, plans and cuttings. The first minute book shows the control exercised by the church over the moral standards of its members:

24th. June 1744 'Brother Berery and Brother Mathews were appointed to go to Sister Fowler to admonish her of her fault in justifieing of her son in his committing the sin of uncleanness before marriage and for her speaking in a slight reproachfull way and maner against our Brother Hoare in the Public Markett in our sister Burkes hearing.'

In 1750 Benjamin How was excluded for 'a long course of inordinate drinking', and in 1752 Mrs. Heather was excluded for six months when she became bankrupt – 'tho' we dont accuse her with a Design to wrong her Creditors yet it is judged by the Church from past circumnstances that she ought long ago to have left off her trade and was advised thereto'. In 1775 heresy raised its head: Thomas Attfield was excluded for 'his denial of the Trinity, and of the true and proper Divinity of our Lord Jesus Christ'.

Tales of Two Councils: Epsom and Reigate

Epsom, as it grew from a village to a town in the last century, outgrew the old form of local government – the parish vestry meeting chaired by the vicar – and obtained urban powers in 1850, being governed by a Local Board of Health – the first to be set up in Surrey. The Epsom and Ewell Borough Council have deposited the minute books of the Local Board and of the Urban District Council which succeeded it, 1850-1911. These minutes show the Board tackling the problems of paving and sanitation and taking responsibility for the fire engine. A surveyor's report of 1862 shows the need for action: 'the present old [sewage] pits are in a swamp and when they are emptied there is a great difficulty in getting the sewage carted away unless in a hard frost or a very dry season'.

One of the early actions of the Board was to lay on a pumped and piped water supply in the town. There were problems, including a burst pumping engine, which led to claims and counter-claims between the Board and their Engineer. The deposit also includes the minutes of the Epsom School

Attendance Committee, 1877-1903, and Epsom Burial Board, 1886-1895.

Reigate and Banstead Borough Council have deposited an important archive of Reigate Borough material. This includes court rolls of the manor from 1619 to the twentieth century which complement rolls dating from the sixteenth century to the eighteenth century which we already hold. There are also a survey of the manor dating from 1623 and an eighteenth-century parchment map of lands in the manor.

The council minutes themselves date from the creation of the Borough Council in 1863 and include minutes of the Watch Committee, which administered the Borough Constabulary, from 1864, School Attendance Committee minutes from 1877 to 1903, when the County Council became responsible for education, and Wartime Emergency Committee minutes, 1939-1945. Other bodies associated with Reigate whose records were deposited include the Mayor's Unemployment Committee, 1932-1946, and Redhill and Earlswood Commons Conservators, 1884-1946.

There are also minutes of the short-lived Reigate Races Committee, 1835-1839. Reigate races were founded, 'to make some Return and to give some encouragement to the Farmers in the neighbourhood over whom the Gentry and sporting men of the County have been in the habit of hunting'. In 1836 the winner of the Surrey Farmers plate was objected to as being a thoroughbred and therefore ineligible. The Stewards, presumably wishing to increase the importance of the races, introduced more races for thoroughbreds. In 1837 provision was made for the possibility of the winners of the Derby and the Oaks entering for the Dinner Stakes (they were to carry 10 lb. extra). The Committee objected that because of the Stewards' actions 'the Stakes have been carried out of the Country by persons who feel no interest in the Races beyond their own and not even adding their Subscriptions to them'. The Committee dissolved itself in 1839 and the races ceased.

Seventeenth-century Dorking and Reigate

We have received from the County Local Studies Library a nineteenth-century copy of a 1622 survey of the manor of Dorking and of the register and book of sufferings of the Reigate Quakers. The survey is a detailed list of tenants of the manor and their properties. The Quaker register includes births, marriages and burials in the mid-seventeenth century (Quakers did not use the parish church for baptism, marriage or burial and kept their own records) and the 'sufferings' are accounts of cows and oxen taken in lieu of tithes (which Quakers refused to pay) from Richard and Thomas Bax of Capel, with an entry relating to the maintenance of Capel burial ground.

Early Days of Brooklands

A London firm of solicitors have deposited, through the good offices of the British Records Association, papers relating to the Locke King estates and the early years of Brooklands motor racing track. We already hold a considerable amount of records of the Locke King estates, mostly title deeds but including

some material relating to the motor track. The present deposit includes correspondence and accounts for the building of the track and notes and drafts of articles and interviews to publicise it. They also include minutes of a discussion after dinner in a private room in the Café Royal in 1907 at which leading competitors were asked for their recommendations, based on the first two meetings, for improvements to the racing.

‘A Lasting Spring’ in Weybridge

We have been most generously presented with a copy of ‘A Lasting Spring’, a history and reminiscences of the Hall school, founded in 1898 by Miss E. M. Gilpin (later Lady Sadler) in the Village Hall, Weybridge. Miss Gilpin’s approach was a radical one for the period, laying great stress on art and craft and drama and the development of individual children’s interests and initiative. Pupils produced a number of handmade illustrated books, of which we already possess one, ‘The Village Hall’, dating from 1915. ‘A Lasting Spring’ was produced by former pupils and consists of a history of the school compiled largely from personal reminiscences. The illustrations are taken largely from the books produced by the pupils but thirteen of them have been hand-coloured by former pupils. The work of hand-colouring these illustrations in each of the 150 copies took 1,000 man/woman hours and each copy is therefore unique. The production of the book is in a sense a final flowering of the tradition of the school.

A First World War Hospital

Lord Hamilton of Dalzell has deposited the records of Thorncombe Military Hospital, 1914-1919, and of Thorncombe Hospital Fund, 1919-1987. Thorncombe Military Hospital was established at Thorncombe House, Bramley, the home of Colonel and Mrs. Fisher-Rowe in October 1914, shortly after the outbreak of the First World War. It was funded by subscriptions and donations of local people (from Lady Brabourne and Colonel Richards to ‘farm employees of Mr Ellis’ and, ‘Penny Subscribers’) and staffed by paid staff and V.A.D.s. The Hospital possessed a fully equipped operating theatre and ‘an x-ray installation’ was erected in the grounds of Snowdenham House.

Voluntary help was used to a considerable extent. Mending parties were held and volunteer cooks gave a day a week’s service. During the War, 2 289 patients passed through the Hospital. The average length of treatment was 36½ days and the cost per patient was £8 18s. 3½d.: ‘The average approximate cost of each patient per day was thus 4s. 9d., which may be considered a satisfactory result’.

At the end of the War the sum of £1,150 remained in hand and was used as the basis of Thorncombe Hospital Fund. The Fund was used to meet medical and welfare costs of villagers in Bramley, Thorncombe, Grafham, Wonerh, Blackheath and Shamley Green. In the early years the money was spent on extra nourishment (milk, eggs, butter, Benger’s Food, Bovril), baby food, trusses, calipers, lint, fares and ambulance costs to Guildford Hospital, and (medicinal) brandy. The Fund was wound up in 1987 and the records are

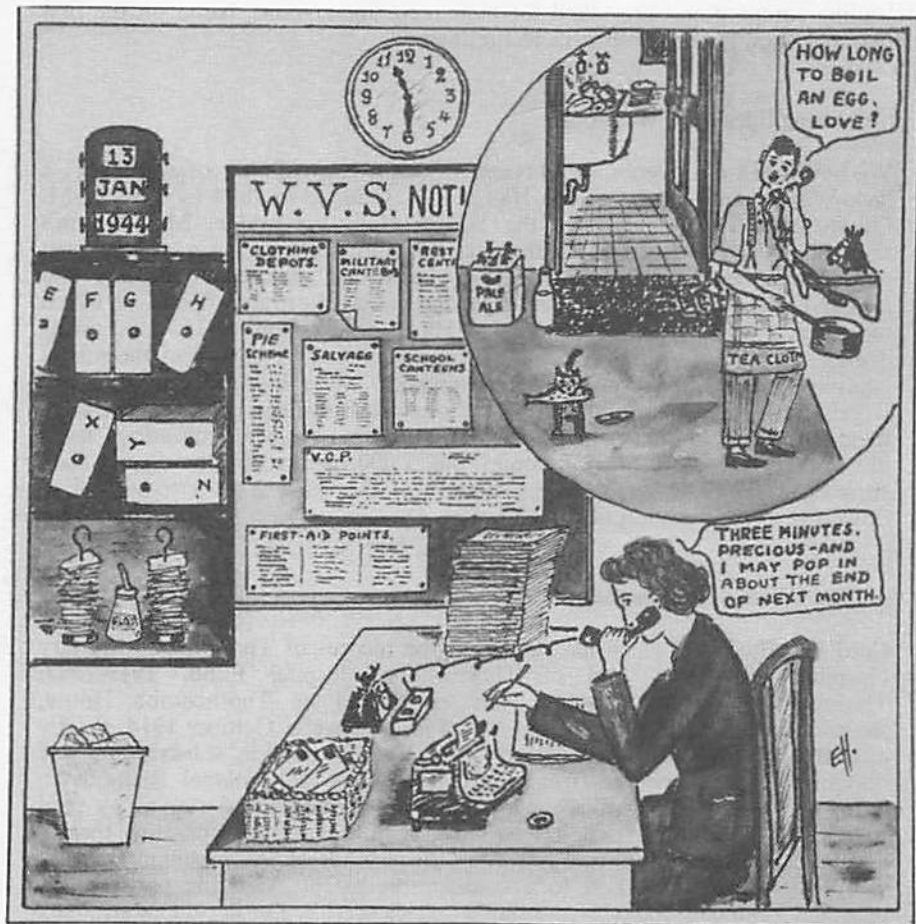


Fig. 2. Domestic Results of W.V.S. Work in World War II from the papers of Miss Helen Lloyd of Albany.

remarkably complete, including the minute book, account books and correspondence.

From Great Tangley to New Zealand

A descendant of the Colebrook family, who were tenant farmers of Great Tangley Manor in the nineteenth century, has deposited papers relating to the family and the house. They include a programme of 'Special Devotional Exercises and Addresses' held in 1873 in the Congregational chapel which William Colebrook founded in his barn. There are also copies of letters from a son and daughter of William Colebrook who emigrated to New Zealand. These throw light on both New Zealand and England in the nineteenth century: Thomas Colebrook wrote to his father, 'You also ask me if I am "sorry I left home," to that I can safely say *no*, not that I disliked home or was uncomfortable there, but a Colonial life seems to suit me best, it is so free and easy, no bowing and scraping and Mr. and Sir to any one; its all by yr. christian name, and they are pretty much of an equal; there are very few proud stuck up things here'.

W.V.S. in the Second World War

We have received from the executor of Miss Helen Lloyd of Albury papers relating to Miss Lloyd's activities in the Women's Voluntary Service, in particular during the Second World War. These include the minute book of Albury district evacuation committee, 1939-1945, with details of the arrangements made for evacuees, including medical treatment, recreations, Christmas parties ('the cost would be 8d. a head which included scones, cakes, jellies, lemonade and crackers') and the provision of clothing and blankets. The records also include reports on activities (for example, the W.V.S. provided food at Guildford station for troops evacuated from Dunkirk) and papers relating to the scheme by which Guildford Rural W.V.S. 'adopted' 80 families in 'Bomb Alley', Caterham, who lost their possessions in summer 1944. The traumatic domestic results of W.V.S. activity are shown by a cartoon, showing a husband phoning his office-bound wife to ask 'How long to boil an egg, love?' Her reply: 'Three minutes, precious - and I may pop in about the end of next month'.

These and many other records throw further light on Surrey life over the centuries. We are most grateful to those who place them in our care for the benefit of researchers into all aspects of the history of the county.

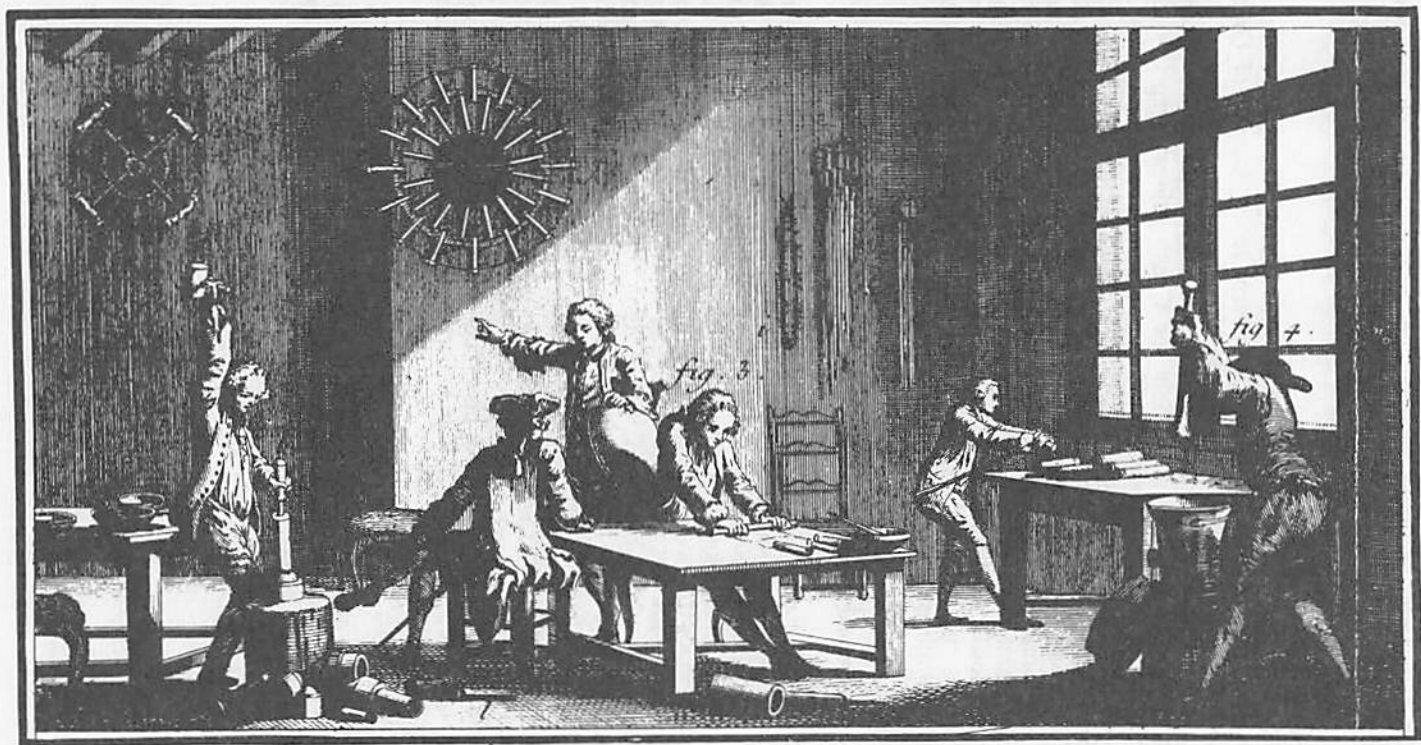


Fig. 1. The Manufacture of Fireworks in the eighteenth century.

JAMES PAIN AND SONS OF MITCHAM

Manufacturers of Fireworks (1872-1965).

Eric N. Montague

Surrey Archaeological Society and Merton Historical Society

Early Beginnings

For a little over ninety years the world-famous company of James Pain and Sons Ltd., firework manufacturers, had its principal factory at Eastfields, Mitcham. The firm was founded by James Charles Pain, who started making fireworks in a small hut in the back garden of premises in Albion Place (now Heygate Street), south-east London, where he employed two men and a boy. He may well have received encouragement in this venture by the example of his uncle Mortram, who was also a firework maker. The family's association with gunpowder, if not actual fireworks, went back to the seventeenth century, and James Pain could claim with pride that he was seventh in unbroken descent from the first Pain, a Huguenot from the Channel Islands who settled in London and manufactured gunpowder for the government of Charles II. An advertisement in the *London Gazette* of 1688, which for many years was displayed in the company's Mitcham offices, proclaimed that:

'Mr. Pain, who maketh the shining gunpowder, liveth now at Temple Hill, upon Bow river, where he maketh powder for His Majesty's service. He maketh some also of several prices, and it will be sold by the whole barel and by retail by Mr. Pluett, living in York Street, Covent Garden, at the Peacock, where he'll be found both in the morning and in the afternoon, and at exchange time upon the French Walk.'¹

James Pain's father, who died in 1870, had been involved in producing the displays in Hyde Park which celebrated the signing of the first Treaty of Paris in 1814, and was employed by Lord Melbourne's government to provide fireworks to mark the coronation of Queen Victoria, whilst James himself had been engaged as official pyrotechnist for the displays in 1856 at the end of the Crimean War.²

Removal to Mitcham

Various mishaps necessitated several changes of address before the move to Mitcham took place. Pain was at No. 20 Albion Place, for instance, when a fire occurred in 1864, and had moved to No. 10 by 1865. In 1871 he was working from No. 15, and two years later took an eighty-year lease of 121 Walworth Road, which became his home for a number of years, and the

firm's offices for a quarter of a century. Having acquired eight and a half acres of open land at Eastfields as the site for a new modern firework factory, James Pain moved his workshops from Albion Place and Edinboro' Grounds, Shepherds Lane, Brixton, to Mitcham in 1872.³

Until shortly before passing into Pain's hands, the Eastfields site had comprised three separate plots of agricultural land, one of which bore the picturesque name of 'Oak Stubbs'. Each had been enclosed at some time in the past from the east common field of the parish, and a quarter of a century earlier had been owned by Charles Shebbeare and James Moore.⁴ The north-eastern edge of the new factory site was defined by the 'main ditch', a small watercourse flowing westwards from Pollards Hill towards Figges Marsh, beyond which it joined the River Graveney. To the east lay 'Mitcham Little Wood', a marshy area of wet woodland dominated by alder, willow and birch, and reserved for shooting by the Watney family, who owned the New Barns estate which extended from Commonsides East to the boundary between the parishes of Mitcham and Croydon. To the west of Pain's land lay the remnants of the former open east field of Mitcham, still unenclosed until a few years previously, but by the late 1860s acquired by Edward Mizen, horticulturist and market gardener, and developed into 'Eastfields Farm'. At the southern corner of Pain's site stood what for many years had been the only building to be seen in the east field – a gamekeeper's cottage, brick and thatched, comprising two rooms and a weatherboarded lean-to outbuilding.⁵ This humble little dwelling was the home of William Temple, his wife, son and daughter, and until 1853 had also been part of the estate of James Moore.⁶ Two years after Moore's death in 1851 the gamekeeper's cottage, with the rest of the estate, including land in the east field and lordship of the manor of Biggin and Tamworth, passed to Moore's son, James Bridger, and it was probably from him that Pain purchased the site for his factory.

World-wide Recognition and Royal Acclaim

It was thus in 1872 that James Pain transferred the production of fireworks to the new Eastfields site, which was to be known as 'The Albany Firework Manufactory'. His main office remained at 121 Walworth Road, and he was soon to have another office at St. Mary Axe in the City of London dealing with marine orders and exports. When bulk storage became a problem two hulks, the *Emma* and the *Vectis*, moored at Gravesend, were acquired as magazines. James Pain's reputation was growing rapidly even before his removal to Mitcham. As early as August 1865 he had mounted a display of fireworks at Cowes for the Prince and Princess of Wales, and his advertisements proudly proclaimed that he was 'Artist in Fireworks' to the Royal Yacht Squadron and the Royal Victoria Yacht Club. He was also attaining world-wide recognition, and was soon to receive many awards for his products, including first prizes for 'Best Coloured Fires' and the 'Best Asteroid Rockets' at the great international firework competitions held at the Alexandra Palace in 1875 and 1877.⁷

By the 1880s the firm had offices not only in London and Liverpool, but also in New York and Melbourne, where there were subsidiary factories. In 1884 James Pain, who had pioneered the firework business in the New World,



Fig. 2. A Spectacular display of Pain's Fireworks at the inauguration of President McKinley in Washington, March 1897.

gave his interests in America, including the factory at Parkville, N.Y., to his eldest son, Henry John Pain. At first the firm prospered, and James Pain and Sons' fireworks were much in demand, providing the pyrotechnic displays at many great events, including the unveiling of Bartholdi's Statue of Liberty in 1887 and the opening of Brooklyn Harbour Bridge. All did not go well, however, and eventually the business failed. Henry Pain returned to England bankrupt, and his interests in the family business were bought out by his brothers.

Displays of Pain's fireworks remained highly popular with Queen Victoria and the Royal Family, and by Royal Command were mounted at Sandringham for the celebration of the majority of Prince Albert Victor, at Osborne on the occasion of the marriage of Princess Beatrice, and at the Queen's Jubilee display in Home Park, Windsor. For services at the marriage of Princess Amelia d'Orleans at Lisbon, by command of the King of Portugal, James Pain was created Knight of the Order of Christ by His Majesty. What was undoubtedly the most valuable accolade came in 1888, when James Pain and Sons were awarded the coveted Royal Warrant by Queen Victoria, and could advertise with the Royal Coat of Arms.

A Hazardous Occupation

In 1885 there occurred at the Mitcham factory an explosion and fire which was to be long remembered by local people, not only for its spectacular nature, but also for the efficiency and enthusiasm shown by the Mitcham volunteer fire brigade (equipped with a new steam fire engine barely sixteen months previously) and those of the surrounding districts in responding to a major emergency. From accounts carried in the *Croydon Guardian* and *The Times*⁸ it would appear that during the morning of Saturday, 16th. May, four men, Craig, Harrison, Randall and Temple, were engaged in 'No. 20 Danger Shed' on the manufacture of 'pourbillion'. Suddenly an explosion occurred from the fine work in preparation by Randall, and within a very few minutes the shed was completely destroyed but, fortunately, not before the workmen had escaped from the building. As a precaution against such occurrences the factory sheds had been erected at a considerable distance apart, and consequently the effects of the explosion were minimised. Nevertheless the fire which followed the explosion was spread rapidly by flying debris to other sheds which, on account of their construction and combustible contents, quickly ignited. The force of the initial explosion was felt over a mile away, and it was followed by further loud reports as seven other sheds were completely destroyed. Mercifully casualties were few. Some twenty men were at work around the premises that morning, but the first explosion gave them sufficient warning to escape the spreading fire. One man, James Eldgwood, was severely burned about the face and hands and had to be removed to Guy's Hospital, but George Harrison, the only other man injured, was less seriously burned and after treatment by Dr. Clarke of Mitcham was able to return to his home in Grove Road. As it happened, the women normally employed in the sheds which were destroyed that morning were engaged on other processes in the permanent buildings. The Mitcham brigade was first on the scene, and strove to contain the situation until they were joined by



Fig. 3. The Mitcham Fire Brigade which dealt with a serious fire at Pain's factory in 1885. (Courtesy of Mitcham Library).

brigades from Tooting, Streatham, Croydon and Sutton, summoned by telegraph. At one time it was feared the fire would spread to the permanent buildings on the site, but the combined efforts of the brigades brought the fire under control in a little under three hours, and they were able to withdraw. James Pain and Sons were left with damage estimated at about £500.

By the nature of the materials involved, and the human element (all production at Pain's was by hand), occasional accidents were, unfortunately, almost inevitable. In July 1896, for instance, there was an explosion which resulted in the death of a 17-year-old firework maker, George Edward Goodman,⁹ and in another fatal explosion early one June morning in 1902 two workers, Joseph Craig, a foreman and an experienced man of 60, and a 16-year-old boy, James King, lost their lives.¹⁰ Over the years further accidents were to occur, despite managerial precautions and Home Office supervision, but there is no evidence to suggest that conditions at Mitcham were particularly lax.

James and Sons

James Charles Pain's first wife, Mary Ann (*née* Craig), died in 1884 whilst they were still living at Walworth Road. Some years previously his sons had bought 'Manhattan', 55 Mitcham Lane, Streatham, and one of them, Frederick Pain, died there in 1894. James Pain senior eventually remarried and lived at Clapham, retiring from active involvement in the business in about 1898. He moved to Streatham after the death of his second wife, Elizabeth, in 1902, and lived until 1923, dying at the age of 86 at his house in Moyser Road.

Following James Pain senior's retirement, management of the business devolved on his sons, James Charles junior, Arthur and Philip. Arthur controlled the works at Eastfields, whilst Philip took charge of the office which, from 1898, was located at 'The Chestnuts', overlooking Figges Marsh, Mitcham. The premises, which still stand at the junction of Lock's Lane and Streatham Road, comprise two three-storied early eighteenth century houses with later additions, and had been used as a private school for a number of years. They were offered for sale by auction in May 1898. The right-hand house, the larger of the two, was taken for use as offices for the company, whilst the other became Philip Pain's residence. The former schoolroom was used as a billiards room, and the housekeeper, Mrs Piper, and her husband occupied the rooms at the rear and to the left of the house.

Arthur Pain, who lived at 'Brooklyn', Tooting Bec Gardens, Streatham, died in June 1909, aged 44. By this time the firm was employing between two and three hundred workpeople at the Mitcham factory, with a further hundred or so 'off the Works', i.e. as outworkers, engaged in operations which did not involve use of explosive material. A contemporary account lists the main branches of output as:

(a) Public Displays at home and abroad for National and public rejoicings and events, with Set Pieces in Fireworks Illustrative thereof.

(b) Signals for use of Armies and Navies of England and foreign countries, Life-Line Rockets, Cannons, and apparatus.

(c) Distress Signals for Mercantile Marine, life-saving, and Railway companies, Military and Camp Signals, and for Tropical and Arctic Expeditions.

(d) Ordinary Fireworks for private consumption and export trade, Signals for Fishing Fleets and smoke tests.' 11

In 1915 fireworks retailing at 1/4d. (0.1p) each sold wholesale at 1s. 6d. (7.5p) per gross. At the other extreme of the range there were rockets at 30s. (£ 1.50) each, selling at a wholesale price of 15s. (75p) each. Fireworks were also sold by the box, the contents of a 6d. (2.5p) box (4s. or 20p a dozen wholesale) being:

1 Roman candle	2 Snakes
1 Box of Coloured Fire	2 Golden Rains
6 Crackers	2 Devils
2 Wheels	2 Flower Pots
4 Squibs	2 Star Lights
2 Yew Trees	2 Blue Lights

1/4 Packet of Chinese Crackers

In retrospect, it seems incredible that such a selection could have been sold for so little and yet leave a small margin of profit, but this was the case.

James Charles Pain died in 1918, leaving his brother Philip head of the business. A batchelor, Philip Pain seems to have lived very much for his work, concentrating his time and ability on the many ramifications of the family business. He did not take any active part in public affairs, but had the reputation of dispensing charity freely. Unfortunately he suffered indifferent health and had been a semi-invalid for some time when, in April 1926 at the age of 56, he unexpectedly suffered a heart attack and died whilst at work. He was buried in the family grave in Mitcham parish churchyard.

Since there were no direct heirs, Philip Pain was succeeded in the business by his nephews, Arthur Wishart Milholland, M.C., M.A., and Philip Milholland. They were sons of Mary Edith, daughter of James Charles Pain, and John Fitzallen Milholland, Crown Solicitor to Jamaica, who were married at Mitcham in 1894. Arthur and Philip, both of whom travelled for the company after the war, and had then emigrated to Canada, became Managing Director and Director respectively.

War and Post-war

In 1917 the family business of James Pain and Sons became a limited company. Soon after the outbreak of war three years previously production had become increasingly concentrated on serving the war effort, and the workforce at Mitcham expanded to reach over one thousand at its peak. Millions of Very Lights were produced, including an invention of Philip Pain's, 'Dark Ignition Very Lights' which, producing no flash when fired, did not betray the position from whence they originated. Following the Armistice the factory returned to peacetime production, and the company sought to resume its position of pre-eminence in the manufacture of fireworks. The firm's reputation was impressive, and it was claimed that, since the company's foundation, displays had been given at over five hundred coronations in



Fig. 4. Charter Day for the newly created Borough of Malden and Coombe on 23rd. September 1936 was celebrated by a grand display of Pain's fireworks at the local recreation ground at Beverley Park. (Courtesy of the Royal Borough of Kingston upon Thames).

different parts of the world, as well as at other great international events.¹² For many years the company was to hold sole pyrotechnic rights at the Alexandra Palace, and shortly before James Charles Pain's death it also acquired sole rights for fireworks to be shown at the British Empire Exhibition at Wembley in 1924 and 1925.

The inter-war years saw James Pain and Sons Ltd., under the directorship of the Milhollands, continuing steadily at Mitcham without dramatic incident. Soon after Philip Pain's death 'The Chestnuts' was sold, and the company's offices moved to less commodious, but more conveniently situated, accommodation at 9 St. Mary Axe. The Mitcham works by now covered over eighteen acres and the firm was a major employer of labour in the district, with over two hundred workpeople on its payroll at Eastfields. The environment here remained rural, and even in the mid 'twenties Tamworth Lane and Sandy Lane were still dirt roads, very muddy in wet weather. The long and close association of Mitcham with a firm of such international repute was a source of considerable local pride, and no event, be it a hospital fete, carnival or the celebration of the granting of Borough status in 1934, could be

Fig. 5. Fireworks in production at Pain's factory. (Courtesy of Mr. H. D. F. Hutchings).

considered complete without a display of Pain's Fireworks to provide a finale. Mitcham in the nineteen-thirties was steadily becoming completely suburbanised, and large estates of housing were in course of building virtually all round the works. Part of the factory site, surplus to requirements, was sold off to provide land for an extension of the Streatham Vale Cemetery and Crematorium. The little gamekeeper's cottage, no longer used for its original purpose, survived for many years in its own backwater, still occupied by members of the Temple family. Several of them had found employment with Pain and Sons, from whom the cottage was rented for two shillings and sixpence a quarter. Demolition seems to



have taken place sometime in the nineteen-forties, the cottage even at this late date having no electricity supply and, with no mains water either, still dependent on a shallow well in the garden.

The outbreak of World War II in 1939 brought a return to wartime production, this time with an emphasis on the manufacture of signal flares and Very lights for the Royal Air Force. The works did not experience any direct hits during the air raids of the nineteen-forties, the nearest incidents being two high explosive bombs which fell on open land to the north of the factory site, and damage was confined to blast.

From the early post-war years until as late as the nineteen-sixties the appearance of the Eastfields site remained much as it had been at the turn of the century. Acacia Road, once an ancient bridle path leading from Mitcham's Lower Green to the common field and, beyond Tamworth Lane, known as 'Firework Lane', led the visitor to the factory gates. Either side of the road, and partly encompassing the works, were the nurseries and market grounds of F. & G. Mizen, horticultural growers and market gardeners. The illusion of surrounding countryside was heightened by the trees and open space of the cemetery grounds, visible beyond Pain's premises to the north-east. The factory offices were in a range of brick buildings extending to the left of the main gates, and a two-storied slate and weather-boarded house, with decorated 'gothick' bargeboards to its gables, stood to the right. Behind it was a long line of chestnut trees and the south-western boundary fence. As in the eighteen-eighties, the huts used for specific operations or types of product were dispersed throughout the grounds. Of timber-framed and weatherboard construction, and individually quite small, they were disposed in rows roughly



Fig. 6. An Imaginative Advertisement of the 1930s. (Courtesy of Mr. H. D. F. Hutchings).



Fig. 7. 'The Chestnuts', Streatham Road, Mitcham -- James Pain & Sons' former offices photographed in 1972.

forty feet apart. Between the first and second rows were rectangular ponds of static water to supply fire pumps in case of emergency. More widely spaced, and with intervening banks of earth, were storage buildings and magazines grouped in the more remote south-eastern part of the site. Because of the marshy nature of the ground there were interconnecting wooden walkways leading between the buildings. Whereas the actual process of manufacture of fireworks had to be conducted within the factory compound, where it was governed by safety legislation, the manufacture of the cardboard cases was largely performed by homeworkers, several dozen of whom, mostly women, were employed in the neighbourhood.

Urbanisation and the Demise of Pains

The impression of stability in a rural backwater was deceptive, however, and by the early nineteen-sixties fundamental changes were in the offing. At Mizens' nurseries an era was about to end with the removal of the business to Ottershaw, and the greenhouses were soon to be demolished to make way for the new Eastfields School and its surrounding sports ground. Bryant and May bought James Pain and Sons Ltd. from the Milhollands in about 1963/4 and Pains effectively became the firework division of Pains-Wessex Ltd., manufacturers of a wide range of pyrotechnic products for military and civilian use. Production at Mitcham having ceased in November 1965, the Eastfields works were closed down in 1966 and the business transferred to High Post, Salisbury.

What now remained of the former Pain's site passed into municipal ownership, to be redeveloped as a housing estate. The approved design was that of P. J. Whittle, the Borough Architect of the new London Borough of Merton, which came into existence in April 1965. The new estate copied a scheme that had already been employed with success at Pollards Hill, where another of the new Council's estates had been acclaimed as a classic example of the new school of 'high density, low rise housing' and had received a design award. In naming the roads of the Eastfields Estate the opportunity was not completely missed to commemorate the history of the site. The names of Henry Clay, the Treasurer of the former Borough of Mitcham, and Barbara Thrupp, the retired Housing Manager, apparently inspired local councillors as much as those with a more intimate association with the locality. James Moore and the Pain family both had closes named after them, and James Potter, Moore's uncle who died in 1799 and probably also farmed land in the east field, was honoured in a similar way. Unfortunately, due to a mistake in the municipal offices, the Milhollands are commemorated by the mis-spelt 'Mulholland Close'. It was left to the initiative of the Parks Department to preserve a further link between old and new by rescuing carp and other coarse fish from the ponds on the derelict Pain's site, and transferring them to the medieval fishpond in the grounds of 'The Canons', Mitcham.



Fig. 8. Pain's Firework Factory from Firework Lane, Mitcham, photographed in April 1966, after production had ceased. The derelict land in the foreground is part of the former market gardens of F. & G. Mizen.



Fig. 9. Inside Pain's Firework Factory, Eastfields, Mitcham. The individual huts and the walkways are still intact, but are awaiting clearance, April 1966.

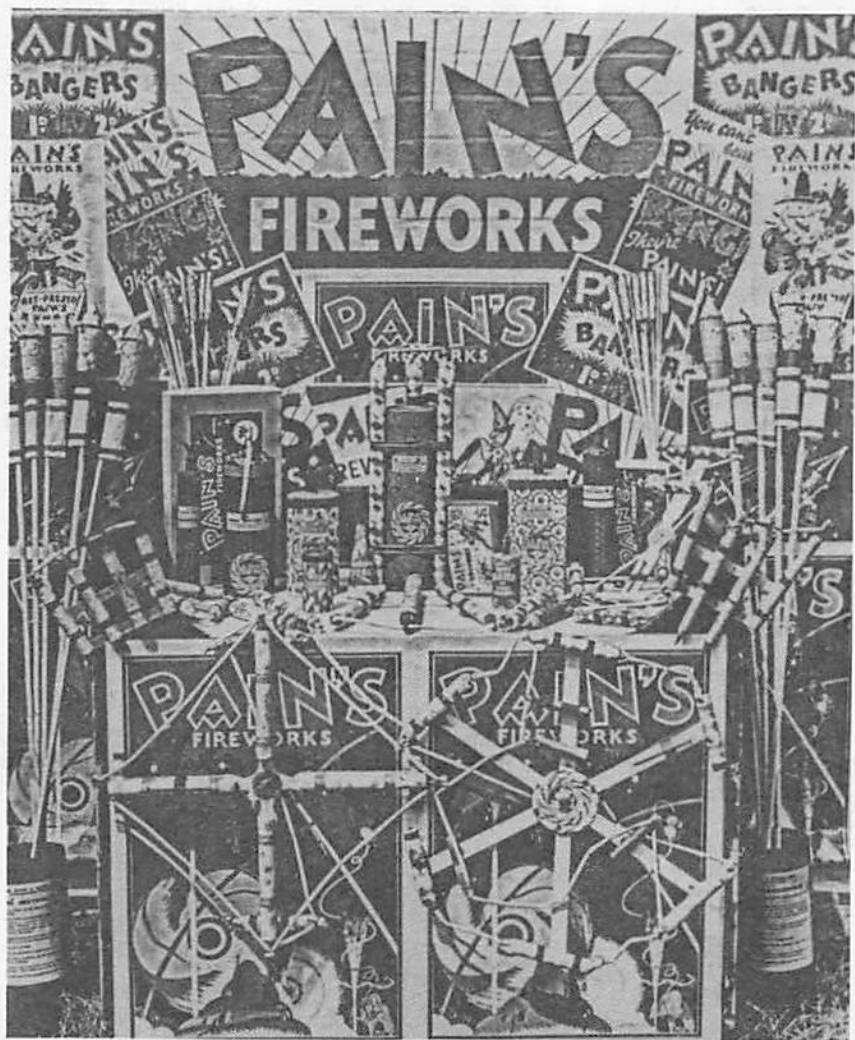


Fig. 10. An Advertising Display of the 1930s. (Courtesy of Mr. H. D. F. Hutchings).

NOTES AND REFERENCES

1. *Streatham News*, 19th. October 1923. Article on the death of Mr. James Pain, *A Firework Pioneer*.
2. E. A. Brayley Hodgetts (ed.), *The Rise and Progress of the British Explosives Industry* (1909), p. 406.
3. The first reference traced to the firm in Mitcham is in the Post Office Directory for 1874: James Pain, *Firework Maker*.
4. Mitcham Tithe Register 1846 and Tithe Map 1847.
5. Croydon Library: Harold Williams Collection of Sale Particulars, Part 3 - Outside Croydon, S243 - *Particulars, Conditions of Sale, and Plan of the Remaining Portion of the Valuable Estate of the late James Moore Esq.*, 29th. August 1853, Lot 68. Lot 67 was *Oak Stubbs*, with a crop of peppermint and barley. This was sold for £ 365, but the buyer's name was not recorded.
6. In the census of 1851 William Temple's age is given as 35. This means it was most likely to have been the son who was involved in the explosion of 1885.
7. I am greatly indebted to notes supplied by Mr. H. D. F. Hutchings, former Display Sales Manager of Pains-Wessex Ltd., for biographical information on the Pain and Milholland families, and for details of the early history of James Pain & Sons Ltd.
8. *Croydon Guardian*, 23rd. May 1885; *The Times*, 18th. May 1885.
9. *Streatham News*, 8th. August 1896, and 12th. September 1896.
10. *Streatham News*, 14th. June 1902, 12th. July 1902 and 13th. September 1902.
11. Brayley Hodgetts, *op. cit.*, p. 405.
12. *Streatham News*, 19th. October 1923 and 30th. April 1926.

Research correspondence, notes and photo-copies of newspaper articles etc., from which this account has been compiled have been deposited with the Surrey Record Office, County Hall, Kingston upon Thames.

THE PAPER MILLS OF SURREY*

Alan Crocker
Surrey Industrial History Group

Introduction

The 500th. anniversary of the establishment of the first English paper mill, which was located at Hertford, was commemorated in 1988.¹ To mark the occasion the International Association of Paper Historians held its 19th. Congress in this Country and I presented a paper on 'The Paper Mills of Surrey'.² The present article is a shortened and revised version of that paper.

The proximity of London had a considerable influence on the growth of industries in historic Surrey and particularly on papermaking, as it provided a source of rags, the principal raw material, and a ready market for the paper produced.³⁻⁵ Surrey also had a large number of water-mill sites, some of which were becoming available in the seventeenth century with the decline of the local woollen industry and the consequent closure of fulling mills.³ Many of these mills also had a good supply of clear water for making the stuff or pulp from which paper is made. The earliest known account of papermaking in Surrey is contained in John Aubrey's *History and Antiquities of the County of Surrey*, published in 1719 but written mainly in the 1670s.⁶ Aubrey states that in the reign of King James I (1603-25) coarse paper, commonly called whited-brown paper, was made in Godalming. However there is no supporting evidence that paper mills were established in the Godalming area until about 1660 when parts of the Eashing and Catteshall mill sites were converted to papermaking.^{7,8} In the meantime a paper mill had been built at Stoke, which is now part of Guildford, and the first lease probably dates from 1636.⁹ Stoke is therefore the first Surrey paper mill for which documentary information is available. These early paper mills must have been successful as other mills were soon established downstream on the River Wey at Byfleet and Ham Haw, and on the River Mole at Downside in Cobham.^{3, 10} Others followed on the Tillingbourne, Hogsmill and Wandle and a windmill was used for papermaking in Southwark.¹¹ Some of these mills were short-lived but by the first half of the eighteenth century paper was being made at about 16 sites, including some in Bermondsey and Southwark which were powered by steam. Then after 1850 the number decreased rapidly. By the turn of the century there were only four mills, including one at Carshalton where paper was still being made by hand,¹² using the method shown in Figure 1.¹ The last mill in this area, Catteshall, closed in 1928.⁸ The main influences causing these changes were the increasing demand for paper throughout the period, the

* The author would welcome information on any aspect of Surrey paper mills and invites readers to contact him at the Department of Physics, University of Surrey, Guildford GU2 5XH

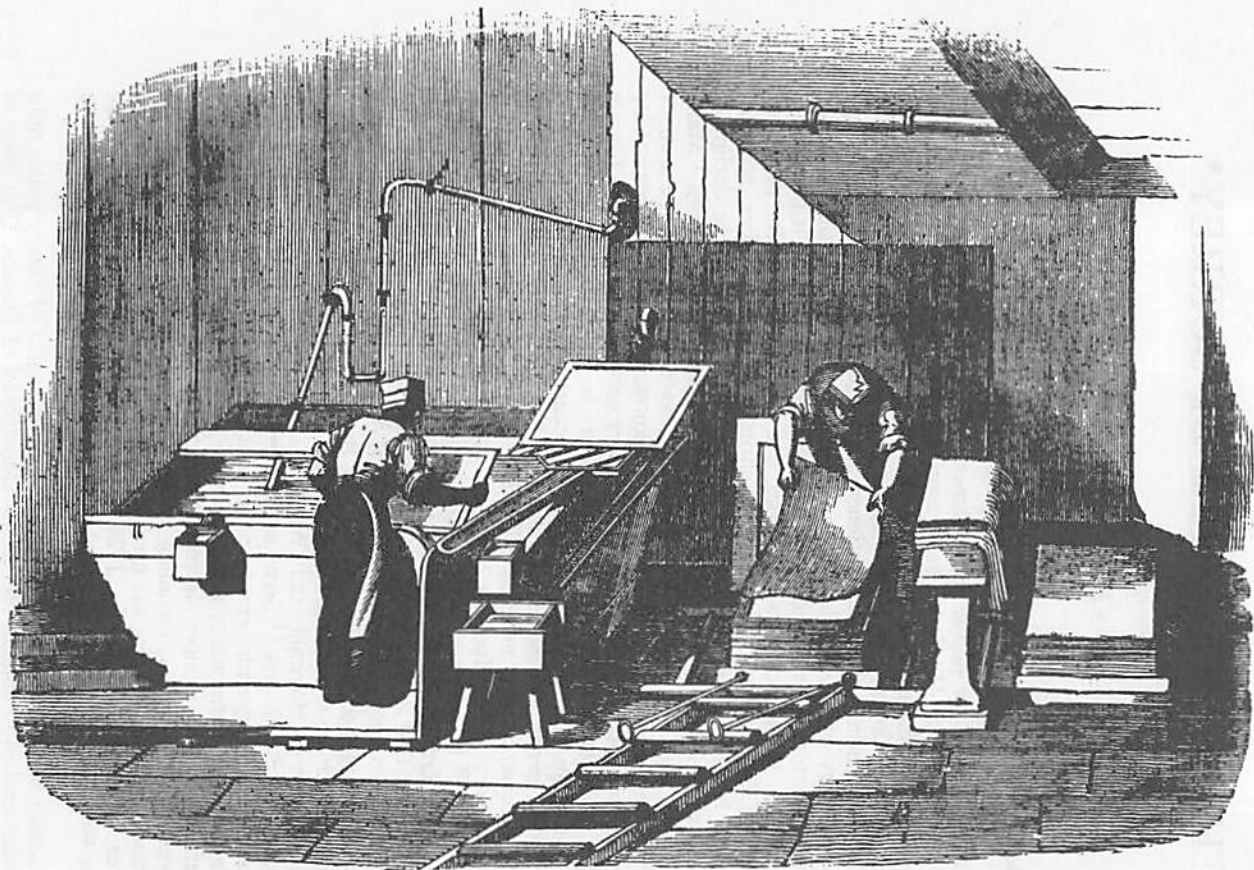


Fig. 1. Making hand-made paper in the early nineteenth century. The vatman on the right is dipping his frame or mould into a vat of pulp or stuff to make a single sheet of paper. The coucher on the left is placing a piece of felt on a sheet of paper at the top of a pile of interleaved paper and felt. Note the characteristic paper hats worn by the workmen.

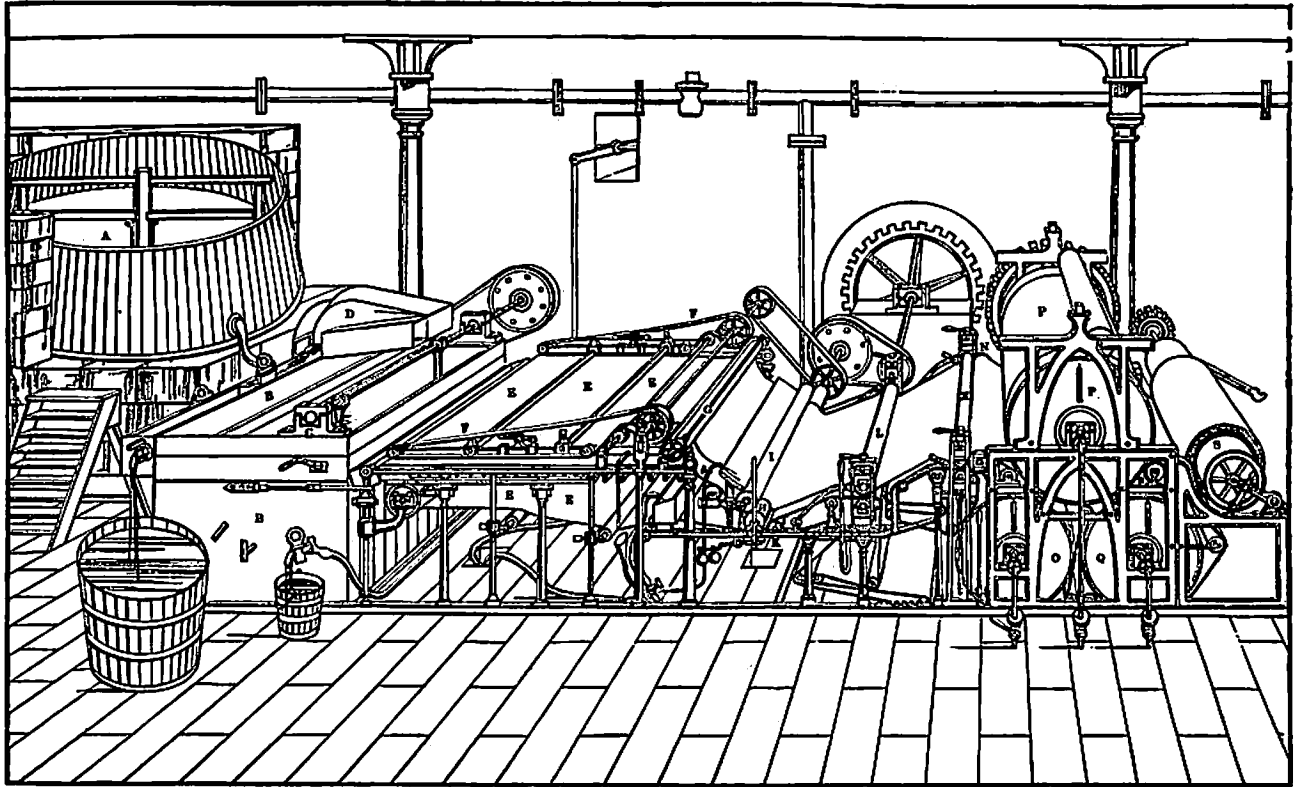


Fig. 2. Papermaking machine at Postford Mill, Albury, in about 1830. The pulp flows from the circular stuff chest at the left into a rectangular vat and hence on to an endless web of wire which carries the wet continuous sheet of paper to the felts, drying cylinders and reel at the right.

invention of the papermaking machine shown in Figure 2 in about 1800, the gradual change to the use of steam power from 1800 and the consequent increase in the output of these mills, and the introduction of imported esparto grass and timber as raw materials from about 1860.⁴

Although the maximum number of mills operating at any one time was 17, the total number of known sites is 38, including 18 now in Greater London and three on the County boundaries with Hampshire and Sussex.^{2, 3, 10, 13} The sites are identified on the maps of north and north-east Surrey and of central and south-west Surrey presented as Figures 3 and 4 respectively. In this article brief accounts are given of six of these mills, highlighting significant episodes in their history.

Stoke Mill - Sir Richard Weston and the Wey Navigation

Stoke Mill, on the River Wey just downstream from Guildford, is the Surrey paper mill for which the earliest documentary information is available.⁹ It was built shortly before 1635 by Sir Richard Weston, of nearby Sutton Place, who in 1618 had taken a 1,000-year lease of the corn mills, fulling mills and land at this site from Sir George Stoughton. He proceeded to cut a channel or 'New River' to carry water from near the mills through the grounds of Sutton Place so as to irrigate his fields and improve their yield of grass and hay. The level of the water in this channel was controlled by an experimental lock at Stoke. The project was a success and this led Sir Richard to promote the Wey Navigation, which was opened from Weybridge to Guildford in 1653.¹⁴ It is said that his knowledge of locks and canals was gained in Holland and Flanders where he travelled as a young man¹⁵ and it may be significant that most of the paper used in England in the early seventeenth century was imported from Holland.⁴ It was probably in 1636 that Sir Richard, who died in 1652, leased the paper mill to Abraham Barnard for £30 a year.⁹

In 1657 the paper mill was leased again for a period of 21 years for £24. 6s. 8d., the fulling mill for £7 and the corn mill for £61 10s.⁹ The relative values of these rents is typical of the period, the surviving fulling mills in particular being small. In 1671 claims for compensation against the Wey Navigation were made by 87 people. These included Sir Nicholas Stoughton, who owned three corn mills, one fulling mill and two paper mills at Stoke, and Abraham Barnard. They claimed £500 and £50 respectively for water taken from the mills.¹⁶

Simon Ayres was the papermaker in 1721¹⁷ and Richard Rose in 1741.³ Then in 1786 John Grove leased the paper mills for 21 years¹⁸ but until 1791 the land tax was paid first by Joseph Callow and then by Charles Ball.¹⁹ Callow had been at Chilworth paper mill since 1781 but was declared bankrupt 10 years later.^{3, 19} Ball was at Albury Park Mill in 1790 and at Chilworth in 1793.¹⁹ However Grove himself was described as the papermaker at Stoke from 1793 to 1821²⁰ and he insured the mill in 1794 and 1801.³ The view of the paper mill shown in Figure 5 is based on a drawing of this period.²¹ It shows the extensive shuttered lofts where damp newly made sheets of paper were hung to dry. Moulds, which are the frames covered with a wire mesh which were used for making hand-made paper, were manufactured at Stoke during this period. Thus in 1770 Thomas Weston

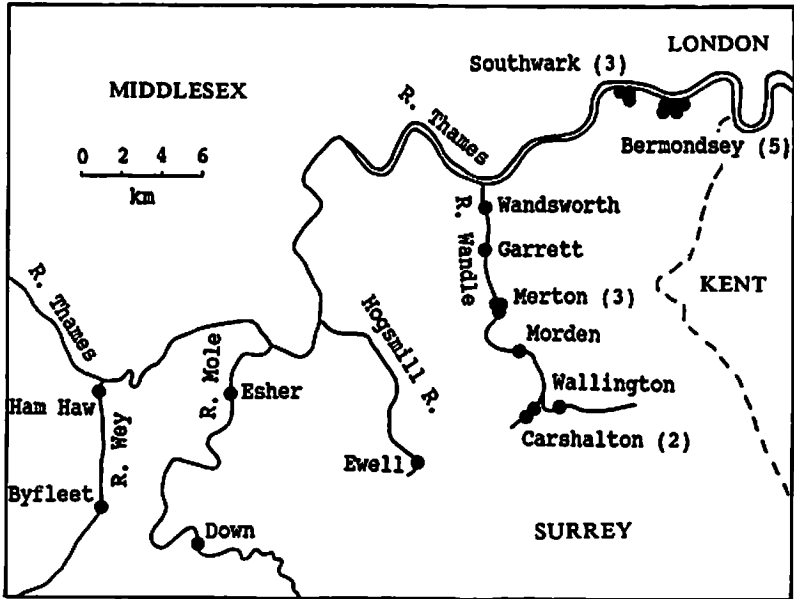


Fig. 3. Location Map of Paper Mills in North-east Surrey.

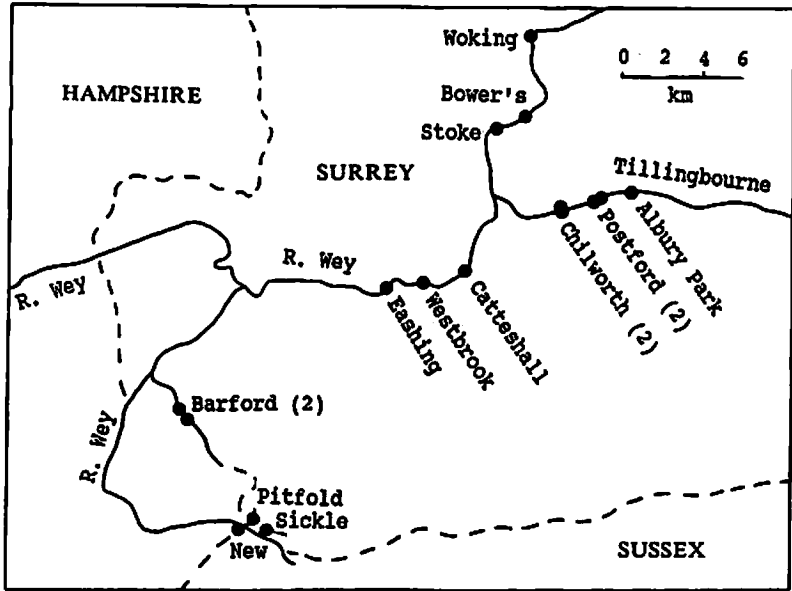


Fig. 4. Location Map of Paper Mills in Central and South-west Surrey.

paper frame maker of Stoke had died³ and in 1807 William Smith paper mould maker of Stoke insured his property.²² The only other known manufactory of moulds in Surrey was at Albury.¹⁹

Stoke Mill was said to have two vats when an 11-year lease was advertised in 1821 and Charles Roffe and Charles Ball junior became the paper-makers.¹⁰ At this time they were also at Postford Lower Mill at Albury.¹⁹ However Roffe became the sole papermaker in 1824 before being bankrupted a year later. William Franklin then took over but was himself bankrupted in 1836.¹⁰ Between 1838 and 1847 the Magnay family, papermakers of Postford and Westbrook Mills held Stoke, and probably used it to make pulp.¹⁰ Then from 1852 the Pewtress family, papermakers of Eashing, Bermondsey and Iping in Sussex, occupied the mill but when, described as a three-storey timber building, it was destroyed by fire in 1863, Wilkins & Elkins were the tenants.¹⁰ It took the Guildford fire brigade an hour and a half to come one mile to the mill, largely because they were unable to yoke the horses to their newly acquired fire engine.^{10, 23} A new single storey brick building was soon erected and used as a half-stuff mill but the site of the main paper mill was used for the prominent five-storey corn mill which still stands. However paper-making had ceased by 1869 and the nearly new plant and machinery including a 25-h.p., high-pressure steam engine, a Cornish boiler, four cast-iron beating engines by Filmer & Mason of Guildford Foundry, a cylindrical esparto boiler, four wrought-iron tanks, etc., were for sale.¹⁰ The building survives as offices.

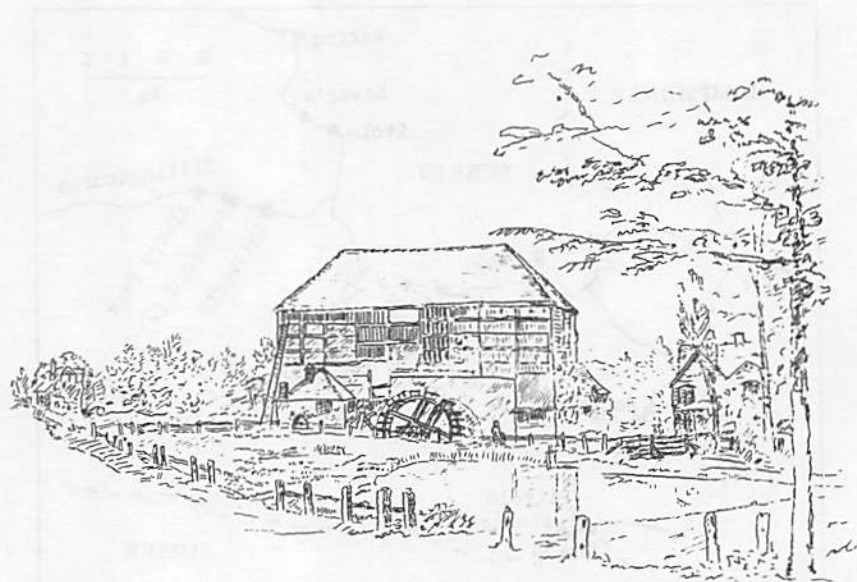


Fig. 5. Stoke Mill based on an original drawing of about 1800, held at the Minet Library, Lambeth.

Byfleet - John Evelyn and the Company of White Paper Makers

The mill at Byfleet was on the River Wey just north-east of the manor house. It is mentioned in the Domesday Book of 1086 and seems to have been a corn mill until the seventeenth century. Then in 1673 the paper mills at Byfleet, known as the King's Mills, were settled on Catherine of Braganza, consort of Charles II.³ When two years later they were granted to the Earl of St. Albans for 21 years, it appears that William Sutton was the tenant and that the mills had been in existence for a considerable time.²⁴ John Evelyn visited them in 1678 and described the methods used for making paper as follows:⁷

'They cull the rags which are linen for white paper, woollen for brown; they then stamp them in troughs to a pap with pestles or hammers like the powder- mills, then put it into a vessel of water, in which they dip a frame closely wired with wire as small as a hair and as close as a weaver's reed; on this they take up the pap, the superfluous water draining through the wire; this they dexterously turn, shake out like a pancake on a smooth board between two pieces of flannel, then press it between a great press, the flannel sucking out the moisture; then taking it out, they ply and dry it on strings, as they dry linen in the laundry; then dip it in alum water, lastly polish, and make it up in quires. They put some gum in the water in which they macerate the rags. The mark we find on the sheets is formed in the wire.'

It is interesting that this account refers to incorporating the size into the pulp from which the paper was made. This was the basis of a 14-year patent secured in 1682 by George Hager who had paper mills at Eynsham near Oxford and elsewhere. The warrant describes the process as follows: 'by sizing all sort of white, blue, purple and other coloured paper and pasteboards in the mortar, whereby the sizing is totally intermixed and incorporated in the mass, whereas in the way now practiced the sizing is received but artificially'. However Hager soon became bankrupt and in 1687 William Sutton had the patent assigned to him.²⁵

Meanwhile in 1686 the Company of White Paper Makers in England had obtained a patent which gave it the sole right to make writing and printing paper for a term of 14 years.⁴ Sutton then petitioned Parliament against the Bill incorporating the Company but in 1690 came to an arrangement with the promoters. He agreed to assign his patent to the Company and to lease Byfleet paper mill to papermakers of the Company, for 21 years.³ In return the Company agreed to admit Sutton as a member and to assign him four of its 400 shares. However when the Act was passed the Company refused to honour the agreement on the grounds that the patent was worthless and the mill unsuitable. Sutton took the Company to court, won his case, and in 1692 leased them his paper mill for 21 years.²⁵ At that time the rent of the mill was £150 which is the highest recorded nationally.⁵

In 1694 Sutton assigned the leases of his messuage, paper mills and corn mills at Byfleet to Edmund Brydges.²⁶ However the mills were mortgaged to Sir Cornwall Bradshaw of Ashted and when he died three years later his natural son and heir Caesar Bradshaw included them in an inventory.²⁷ It states that the paper mill was leased to the Company of White Paper Makers

at £100 per annum, that £200 rent was due and that the Company had ceased to trade. The Earl of St Albans had in 1696 been granted the Manor for a further 35 years and by 1703 the mills were being used for brass and iron making.⁷ Later they were owned by the Bristol Company of Wire drawers.²⁵ In the early nineteenth century they reverted to corn and worked until about 1930 when they were closed in connection with a flood prevention scheme. The surviving mill buildings and the adjacent mill house, which occupy a romantically situated island, are said to date from the eighteenth century.²⁸

Carshalton Mill - Christopher Patch and Bleaching

The Carshalton source of the River Wandle is a group of springs and streams flowing from the chalk of the North Downs and feeding the picturesque Carshalton Ponds. From these the river flows north-eastwards until it meets the Croydon branch 2 km. downstream. Along this stretch there were several mills used for corn, fulling, copper beating, calico printing, paper and flock making, snuff and madder milling, gunpowder manufacture and a variety of twentieth-century industries.²⁹ Two of the mills 'The Paper Mill' and the Lower Mill were used for paper manufacture, being leased for this purpose in 1744 and 1770 respectively.³⁰ From 1776 to 1809 the Paper Mill was operated by the Curteis family and from 1770 to 1805 the Lower Mill by the Patch family, although the Ansell were the owners of both sites.^{3, 10, 29-31}

In 1786 George Ansell, calico printer, insured amongst other property, his paper mill and cloth mill under one roof, separate, brick timber and tiled, for £1000, his snuff mill on the opposite side of the river in his own tenure, timber and tiled, for £600, and a house in occupation of Christopher Patch papermaker for £300.¹⁰ Four years later the paper mill with its utensils, vats and machinery, occupied by Patch was valued at £900 and the cloth mill in the tenure of Collinson & Co., bleachers, for £400.¹⁰ The juxtaposition of the Patch paper mill and the Collinson cloth mill led to an important development in the manufacture of white paper.⁵ It seems that in 1789 Collinson, whose business was bleaching calico, took some of Patch's half-stuff made from second or even third quality rags, and bleached it by some chemical process, presumably using chlorine or 'dephlogisticated marine acid', which had been discovered in 1774. Then Patch used the bleached pulp to make good quality thin post paper. He did not continue with this method as much of the stuff was wasted and Collinson charged 12 shillings per cwt. which Patch thought outweighed the advantages. However Patch's son Christopher was apprenticed to William Curteis at the Paper Mill nearby and Curteis was soon making use of the invention. Then in 1792 Clement and George Taylor papermakers of Kent took out a patent for bleaching rags using the same method. An investigation took place and it was claimed that Patch's discovery completely demolished this patent.⁵

In the meantime Patch was involved in a court case arising from an excise inspection. A parcel of Large Thick Post paper at Patch's mill had been stamped 'Thick Post'. Patch claimed that the word 'Large' was to be added by hand later and eventually he secured 'an honourable verdict against the

Crown'. Nevertheless the case had dwelt upon his mind and was thought to have contributed to his death aged 64 in 1792.²⁹

Following the departure of Patch and Curteis, the Ansell family ran the two paper mills themselves for a few years but the Lower Mill soon closed and the Paper Mill was taken over by Nathaniel Muggeridge.^{10,31} His family owned it until 1894 and by 1906 it had closed.^{10,12} Throughout this period it had continued to produce hand-made paper with the watermark 'C ANSELL'.^{7,10,13}

Bermondsey - Koops and Donkin, New Raw Materials and Papermaking Machines.

In the early years of the nineteenth century two crucial developments in papermaking technology were taking place in Bermondsey.^{1,4} The first involved the use of raw materials other than rags and occurred at the Neckinger Mill. This was named after the former watercourse which entered the Thames at St. Saviour's Dock.³² The mill originally belonged to Bermondsey Abbey but after the dissolution of the monasteries was converted into a water-pumping machine. It is said to have been rebuilt as a paper mill in 1780 by Matthais Koops. He was soon in conflict with local leather manufacturers about control of tidal water from the river and lost the suit brought against him.³² This probably explains why in 1800 'by the side of the Neckinger Road a steam engine was erected for a mill which was to regenerate old paper'.³³ This is one of the earliest known installations of a steam engine at a paper mill.^{1,4} In April 1800 Koops took out a patent for a method of extracting ink from used paper which was then converted into pulp⁷ and he was soon advertising in newspapers for waste paper.³ Within a year he had two further patents for his new method of manufacturing paper from straw, hay, thistles, waste and refuse of flax and different kinds of wood and bark.⁷ The most important of these was wood which he cut into shavings about 2 in. long and boiled in water for $\frac{3}{4}$ hr. They were then soaked in milk of lime for between 6 and 8 days and the resulting material was washed and boiled in clean water from the Thames, when it was ready for conversion into paper. He sometimes added crystal of soda to the solution and allowed the pulp to ferment after the second boiling, which he thought improved the colour. Koops concluded that although he used Thames water any other water would probably do.³⁴ His methods worked and he was able to produce over 700 reams of perfectly clean white paper each week.³⁵ In 1801 one half of the second edition of his book 'Historical Account... of Paper' was printed on wood paper and the other half on straw paper.³⁵ The quality of the former is still fair in both colour and strength but the latter is much inferior. However Koops was unfortunately ahead of his time and within a few years his undertakings, which were all very expensive, had failed.⁴ The Neckinger Mill 'abundantly supplied with water and let on a lease of £1000 per annum' was for sale in 1805.¹⁰ A year later the machinery, implements, utensils and effects of the entire premises known as the Neckinger paper mill, containing a steam engine with two boilers of 24 h.p., washing and beating engines, cistern, stuff chests, screw presses, paper moulds, etc., were auctioned at the site.¹⁰ Nevertheless Koops was the first and most successful of many English paper-

makers who experimented with the production of pulp from wood and other materials during the first half of the nineteenth century.⁴

The second important development at Bermondsey was the manufacture of the first successful papermaking machine by Bryan Donkin.^{1,4} The method of making a continuous sheet of paper on an endless web of wire had been devised near Paris in the late 1790s. The idea was not taken up in France but Henry and Sealy Fourdrinier, members of a Huguenot family of London stationers, were persuaded to finance the practical development of the machine. They built an engineering works at Bermondsey and in 1803 Bryan Donkin was appointed manager.^{4,36} Machines were soon installed in several paper mills and by 1806 it was clear that they were a technological success.⁴ Financially however the Fourdrinier brothers were soon in trouble and in 1810, described as manufacturers of patent machines for making paper at Blue Anchor Lane Bermondsey, they were declared bankrupt.¹⁰ Nevertheless modern papermaking machines are still based on these early models and are known as Fourdriniers. Bryan Donkin flourished at Bermondsey and became one of the most successful nineteenth-century engineers. He died in 1855 but his engineering firm continued at Bermondsey until 1902 when it moved to Chesterfield.³⁶

Haslemere - James Simmons and his Diaries

For well over a century four generations of the Simmons family were papermakers at Sickle Mill at Haslemere, and for much of that time they were also active at the neighbouring Pitfold and New Mills. The founder of the business was James Simmons I who seems to have taken over Sickle Mill in 1735 when he married Catherine Penfold.³⁷ The mill which was previously an iron forge is near the source of the southern branch of the River Wey. Simmons remained at Sickle Mill, which also included a corn mill, until his death in 1777.³⁸ He was succeeded by his sons James II and William who died in 1790 and in 1801 respectively.^{3,10} William's son James III, who was 17 years old, then insured Sickle, Pitfold and New Mill.¹⁰ Until 1811 the mills were in fact leased to John Howard¹⁰ who used the watermark 'JOHN HOWARD, SURRY', the only known use of the County name in a watermark.¹³ Then from 1812 to 1847 James III, whose photograph is shown in Figure 6, was himself the papermaker.^{10,37}



Recently, 38 volumes of a diary kept by James Simmons III between 1831 and his death in 1868 have been discovered.³⁹ These record his business, social and family life, as a papermaker, farmer, church-worker and well-respected figure in the local community, and also the extensive interactions he had with his relatives. The booklets are made almost entirely from Simmons paper. The many entries concerning papermaking provide a fascinating

Fig 6. James Simmons. Studio photograph of the diarist, taken in the 1860s.

account of the problems which troubled the industry during this period. There were for example worries about finding an ample supply of rags, trying to obtain an adequate power supply by modifying watercourses to give a greater head of water at the mills, deciding whether or not to buy a papermaking machine, and if so a new or a second-hand one, frozen waterwheels and stuff chests in cold winters and lack of water in dry summers, trying to dry paper which was becoming mouldy in damp winters, deciding whether to get a steam engine to power the beaters, repairing broken equipment such as the shaft of a waterwheel, the screw of a mechanical press, scratched glazing rolls and the straps and felts of the papermaking machine, dealing with accidents to employees, dismissing unsatisfactory or redundant workmen, investigating thefts of rags and equipment and also fires at the mills, whether the proposed railway through Haslemere, which would take some of his land, would be advantageous to his trade, obtaining cheap fuel for the boilers, wondering if and when to lease or sell the mills, considering whether tenant papermakers were reliable, handing over the business to his son James IV, and always attempting to gain orders for his paper in increasingly difficult circumstances. All this detailed information is interspersed between lengthy weekly accounts of sermons, with much moral soul-searching, descriptions of frequent visits to relatives throughout the south-east of England, records of illnesses, accidents and deaths, notes about local events such as elections, land valuations and particularly the building of a new church, and occasionally mention of national events, such as the coronation of Queen Victoria, the potato famine in Ireland and outbreaks of cholera.³⁹

In practice James Simmons III sold some of his property in 1836, bought a second-hand papermaking machine from Fountains Mill in Bermondsey in 1840, and retired in 1847.³⁷ His son James IV then ran the paper mill until 1850, when it was leased unsuccessfully to tenants including Joseph Fourdrinier, son of the stationer who financed the development of the papermaking machine. He made tissue paper at Sickle Mill⁴⁰ but soon failed and the mill was sold in 1854 to Henry and Thomas Appleton.^{37,39} They continued to make tissue and other paper at the mill but by 1870 it had been converted into a braid and trimmings factory.¹² The buildings still survive but those at Pitfold and New Mill have been swept away.

Catteshall Mill - Spicers and the Founeyron Turbine

Paper was made at Catteshall Mill on the River Wey at Godalming for about 270 years. This is longer than at any other Surrey mill and a full account of its history has already been published.⁸ In 1656 when it was purchased by the Onslow family it contained a corn mill and a fulling mill but five years later the fulling mill had closed and Robert Ingham, a papermaker, was active at the site. He was followed by a series of papermakers until Lord Onslow sold the mill to Joseph Chandler and his future son-in-law John Sweetapple, both of whom were corn millers. However the younger generation of Chandlers and Sweetapples took up papermaking and remained at Catteshall until 1865. In particular Thomas Sweetapple introduced a papermaking machine in about 1835 and three years later patented a successful improvement which led to a fruitful collaboration with Bryan Donkin and his sons. However in 1865 he

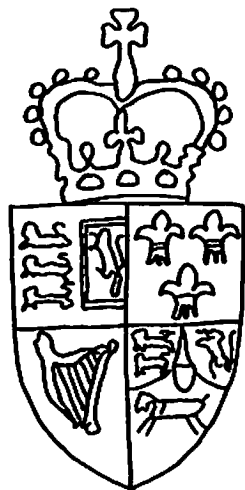


Fig. 7. Catteshall Mill. Photograph taken from the West in about 1910.

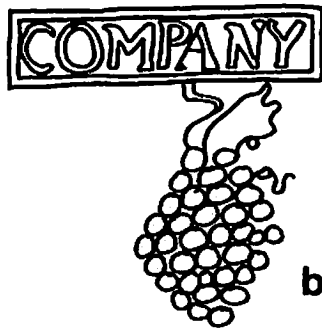
became bankrupt and the mill was taken over by the Spicer family, who had been producing hand-made paper at Alton Mill since 1796.⁸

The Spicers had ambitious plans for Catteshall Mill. In July 1869 the water at the mill was drawn off for a month probably because the old water wheels were being replaced by a turbine.⁴¹ Certainly a turbine had been installed by 1873 as in March of that year Spicers complained that the corn miller downstream at Unstead had fixed flashes to the top of his waste gates hence reducing the head of water at Catteshall. They stated that 'the loss of a foot fall on our turbine wheel is equivalent to a loss of 12 h.p., by no means a small matter with the present price of fuel'. The turbine was built by MacAdam Brothers, Engineers of Belfast, and is of the outward-flow type developed by Benoit Fourneyron in France in the 1820s. This was the first successful water turbine and as far as is known the one installed at Catteshall is the largest ever built, the rotor being 3.5 m. in diameter, and the oldest of the very few which survive. Consequently it was scheduled as an Ancient Monument in 1980. However a year later when part of the mill was demolished it had to be removed from the river. Since then it has been conserved and there are plans to rebuild it at a site in Godalming^{8,41}. The turbine could only provide a small fraction of the power requirements of the mill and within a few years Spicers had installed a 400 h.p. McNaughted compound beam engine. They also introduced esparto grass as a raw material and experimented with an early form of chemical wood pulp. In 1887 they employed some 450 people and made 62 tons of paper a week.⁸

In the 1890s, following the failure of 'The Ottoman Paper Manufacturing Co.' which they had launched in Turkey, the Catteshall Spicers became bankrupt. The mill was taken over for a few years by The Farncombe Paper Co. Ltd. and then in 1907 Albert Reed, founder of Reed International, acquired the site. A photograph of the mill taken at this time is shown in Figure 7. It is effectively a factory and makes a striking contrast with Figure 5 which shows Stoke Mill a century earlier. Reeds continued to make paper at Catteshall until 1928 but then moved the work to their new mill at Aylesford in Kent which, when it opened in 1922, was the largest paper mill in Europe. During the Second World War the mill became a foundry and engineering works and the section which still stands is now used for storage and works units.⁸

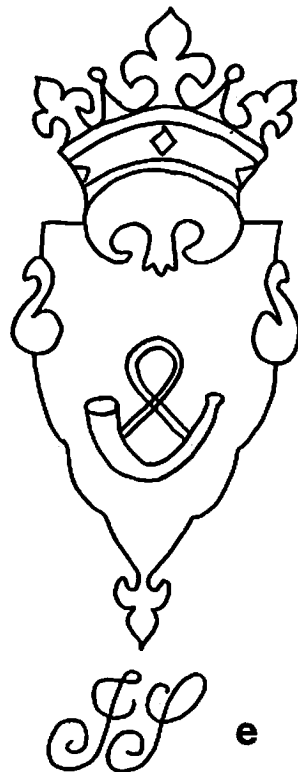


C PATCH
1794 a



GR. c

B & R
1821 d



T SWEETAPPLE 1821 f

Fig. 8. Watermarks traced from paper made at (a) Carshalton, (b) Byfleet, (c) Bermondsey, (d) Stoke, (e) Haslemere and (f) Catteshall. All are reproduced at the same scale, the word 'COMPANY' being 55 mm. long.

Conclusions

This article has attempted to summarise the history of papermaking in Surrey by providing notes on a few of the paper mills, which highlight particular individuals, incidents and technical achievements. These examples have been chosen to cover a period of nearly three centuries of papermaking and a wide geographical distribution within the historic County. Many other examples could have been selected, including conflicts between masters and men at Guildford and Haslemere, arson by an apprentice at Down Mill, Cobham, and other disastrous fires at Esher, Carshalton and Wandsworth, three generations of the Hall family at Eashing, stolen gold being used to finance the establishment of Barford Mills, quarrels with neighbouring gunpowder manufacturers at Chilworth, forging French assignats at Albury Park and banknotes at Postford, rag thefts at Catteshall and Haslemere, Gustav Bernardt Fischer of Woking protesting that he was an Englishman, paper made by William Jubb of Ewell being used in a letter to Parliament complaining about Portal's Bank of England contract and the early eighteenth-century windmill used as a paper mill in Southwark. Some of this information has been published elsewhere and a more detailed account of all 38 paper mills in Surrey, together with those on the headwaters of the River Wey in Hampshire, is being prepared for publication. Much research still of course needs to be done. In particular, the detailed study of Catteshall Mill,⁸ which generated a wealth of information, could be repeated for many of the other mills in the County. However it must be emphasised that Surrey was not the most important papermaking county of south-east England. The industry commenced earlier in neighbouring counties, particularly Buckinghamshire and Kent. In addition more mills were established in the other Home Counties and many of these continued longer than those in Surrey. Nevertheless the fact that the whole life-span of the industry can be studied in Surrey and that many important developments occurred in the County has made this study very worthwhile.

ACKNOWLEDGEMENTS

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