1793-1857: Hannah Astles – twister's wife

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Abstract:
Hannah Astles was a servant girl who did well for herself. She married an ambitious young man and together they set up a 'twisting shade' (for the production of silk thread) in Leek in North Staffordshire. This paper is based on an interview Hannah gave to the Children's Employment Commission in 1840-1, and it describes the trade and the process of 'twisting'. The Commission was set up to look into working conditions for children and young people and 'twisters' employed young boys as 'runners'. The Astles family prospered and their daughters married the sons of one of Leek's most prominent silk manufacturers.

Introduction

Ninety pounds was a lot of money in 1826. It would buy ten cows, four good horses or a flock of a hundred sheep. Hannah Holton was proud to have been able to save so much from her twenty years in service. She'd been little more than a child when she started work - though of course she hadn't earned much in the first few years. But as her wages had risen she'd begun to put money away for her marriage. Sadly, as time went on it seemed less and less likely that she would ever find a husband – so instead she saved for the time when she would be too old or too ill to work. There were no state pensions in the 1820s, and without children to support her, Hannah's chance of a comfortable old age depended on how much money she could put by while she was still in work.

Hannah lived in Leek, a little town in North Staffordshire (UK), which had a flourishing silk industry in the 19th century. Her parents were married at Annesley in Nottinghamshire in 1791 and Hannah was born eighteen months later, a few miles away at Sutton-in-Ashfield. She had two younger brothers, born at widely spaced intervals – William, born in Monyash, Derbyshire in 1807 and Joseph, born in 1816 after the family arrived in Leek.[2] Whether there were other children who did not survive we do not know, nor do we know what prompted the family to move around the country, but once in Leek they settled in Canal Street. Hannah's mother worked as a 'doubler', a relatively unskilled job in the silk industry, and her father seems to have tried his hand at various things. He rented fields, which suggests running a smallholding, and latterly he worked as a coal merchant.[3]

We know even less about Hannah's time in service than we do about her childhood. We do not know whether she had one employer or several, whether they lived in Leek itself, or in one of the neighbouring villages, or in lonely isolation up on the moors that surround the town (fig. 1). Nor do we know whether Hannah was a farm servant, a maid-of-all-work, a cook or a house-maid. But what we can deduce is that to save £90 out of the £8 to £12 per annum she would have earned as a servant she cannot have spent much on herself. She was obviously thrifty and disciplined, and had more of an eye on the future than most young women.

Fig. 1: Leek in Staffordshire. Wikimedia.

Wherever she worked, it is almost certain that she lived in and that her employers provided all her meals. It is also quite likely that they gave her caps and aprons and lengths of printed cotton every once in a while to make herself new work dresses. Her underclothes would have been made of strong calico, an almost indestructible fabric that she would have patched and darned to make them last as long as possible. Her best dress would have been worn for a few hours on Sunday and on high days and holidays, and no doubt she altered it slightly as the fashions changed, adding new sleeves, extra breadths in the skirt, new ribbons and trimmings. She would have been expected to put a penny or halfpenny a week in the collection at church or chapel, she probably treated herself to the occasional halfpennyworth of acid drops or mint humbugs when she shopped in Leek and she may well have spent several shillings when the fair was in town, but most of her money must have gone into her moneybag, tucked away in her trunk or under her mattress. That moneybag is the key to her story.

Fig. 2: St Edward's Church, Leek. Wikimedia.

Hannah first comes to our attention in 1826 when she was thirty-three. On March 23rd that year she married twenty-two year old Josiah Astles, 'twister', at St Edward's parish church in Leek (fig. 2). It seems that young Mr Astles was impressed by her nest egg, and that she recognised him as a young man who was going places. Like her, he had worked since he was a child, first as a twister's helper and then as a twister, plying long fine filaments of silk into sewing thread and twist. In Leek the trade was always called 'twisting' though in many other places it was known as 'throwing'. Like her, he came from a humble background. His father, George Astles, had been a labourer all his life, but young Josiah had other ideas. His ambition was to open his own twisting factory, or 'shade' as they were known in Leek, and he already had several years' worth of his own savings put away.

Leek was famous for silk.

'For silken fabrics rich and rare
What citie can with Leek compare?'

ran a local ballad[4]. The town specialised in making small goods – trimmings, ribbons, handkerchiefs, scarves, and, in particular, sewing silks and twists.

Sir Frank Warner tells us that it was William Ball, a local man, who, sometime in the early 1800s:

'… commenced operations in the twisting of sewings by hand in a shed or shade … and so laid the foundation of a trade in silk sewings and twist, which has made Leek a prosperous town, and won for it world-wide renown for these and other threads …'[5]

This was how Josiah planned to make his fortune.

Hannah was eleven years his senior, and though she probably did not fool herself into believing that he loved her, she could be pretty sure he respected her for her thriftiness and her ability to work hard. Respect is as good a foundation for marriage as any, and if Josiah was going places, Hannah decided she was happy to accompany him. So she allowed – or perhaps even encouraged – him to get her pregnant. Their daughter, Eliza, was christened in St Edward's church four months to the day after their wedding.

The interview

In 1840/41 Mrs Hannah Astles (née Holton) spoke to Samuel Scriven of the *Children's Employment Commission,* who recorded her surname as 'Hastel' – presumably because that was how she pronounced it herself. She told him she was thirty-eight (though she must really have been at least forty-seven) came from Leek and was married to Josiah. They had achieved their ambition and had a 'newly built' silk twisting and winding 'shade' which they had set up with their savings – her £90, Josiah's savings and the money put aside from their joint earnings over the first nine years of their time together. Josiah had continued to work as a twister after they were married, hiring himself out to whoever would pay him the most for his 'rolls' of silk thread. He was an exceptionally quick and able worker, as Hannah was keen to tell the commissioner:

'I know that my husband when he worked, could make 18 [rolls per day]; but then the silk was better and smoother. A man now-a-days thinks he has done a good day's work if he makes 12 or 14 rolls'

It is probable that the newly-married Hannah had also spent time working in one or other of the Leek silk mills to gain experience and add a little to their growing capital. Her mother and brothers had worked in the silk trade so it was familiar territory for her.

By the end of 1834 Hannah and Josiah had finally saved enough to set up in business for themselves, and they bought a plot of land from John Brough of Mount Pleasant, in Leek. The sale went through on January 1st, 1835, a wonderful start to their new year. Their plot was part of a piece of land known as The Furlongs, and 157 feet 3 inches of it fronted on to 'the newly laid out street' soon to be named London Street. Their neighbours – Samuel Milward to the south and William Rawlins to the north - had also bought parts of The Furlongs. The Astles whole plot was 1268 yards 2 feet 9 inches square and was subject to an annual charge of 3 s 4 d payable to the poor of Biggin, in Derbyshire, a charitable bequest attached to the land in perpetuity by some owner in the distant past.[6] By 1840 Josiah and Hannah had built themselves a two storey, four-roomed shade and a row of five houses (fig. 3). They lived in one of them and let the other four. Hannah's testimony makes it sound as though she was very much an equal partner in the business – she always says 'we employ' and 'we pay' rather than 'my husband employs' or 'my husband pays'.

Fig. 3: London Street, Leek. The Astles family lived in the house that is now painted white. Author's photograph.

It seems to have been relatively easy to set up a twisting business – all you really needed was space and a large building. The 'shade' had to be at least thirty to thirty-five yards long and have a minimum of two rooms. The winding and twisting machines and doubling wheels were hand operated and relatively simple – and there were always second-hand ones to be had in Leek.

Independent twisters often rented space within a shade. This gave the owner a guaranteed and trouble-free source of income, but it could be confusing for outsiders.

'These men work for whatever warehouseman or master they please, so that, although numbers may be congregated under the same roof, it is difficult to determine at one time who is responsible …'

noted Samuel Scriven in his report.

He also interviewed William Ball, an independent twister with forty years' experience (and possibly a descendant of the man who developed the twisting wheel). Mr Ball was then working at the shade owned by Ellis, Russell and Clowes – even big firms rented out space. He had begun work when he was still 'in petticoats' – so probably at the age of five or six – and had worked as a 'helper' for four years at 2s 6d a week. He now paid his own two helpers 1d a roll each, and he managed to make about seven rolls a day. Renting his space in the shade cost him 1s a week, plus ½d a day for heating, another ½d a day for candles and 1d a day for 'oil and paper' – presumably for oiling his wheel and labelling his rolls. This left him with 3s 1d a day or about 18s 6d a week. According to William Ball, Leek was a poor sort of place.

'Taking the inhabitants generally of this town they are very poor in circumstances; many have never a bed to lie on, there are not above half employed. In full work wages are very good, but not so good as formerly.'

Leek was also quite unhealthy. Even Samuel Scriven, who was enchanted by the town after a miserable sojourn in the pottery district of Stoke-on-Trent, a few miles away, was forced to report that fevers had been endemic in Leek, and especially in the London Street area, for several years, and he criticised the Astles' neighbour, William Newell, for his filthy shade and the state of the drains in his yard which contributed to the problem.

William Ball was Josiah's contemporary, and, like him, Josiah had worked as an independent twister until just a few years before the commissioner's visit. At the Astles' new shade, one room was rented out to four twisters and their helpers, bringing in a clear profit of 4s a week (assuming they charged the same rates as Ellis, Russell and Clowes). The other twisting room was manned by twisters employed directly by Hannah and Josiah. In the rooms upstairs, women and children worked as 'winders', 'piecers', and 'doublers' preparing the silk filaments and winding them on to bobbins ready for the twisters.

Silk

When silk arrived in the UK from the producers in China, Bengal, Italy or Persia, it had already been reeled from the silkworms' cocoons, twisted into hanks and compressed into bales weighing 150 lbs or more. It cost between ten and twenty shillings a pound (according to an article in *The Penny Magazine* supplement in April 1843) depending on the quality and where it came from. Different uses required the silk to be processed in different ways, but the first process was always the same and took place in the winding room. There the hanks were extracted from the bales, cleaned and placed on 'swifts', lightweight, hexagonal frames, of various sizes to fit the various sizes of skein, and elastic enough to cope with slight variations in skein size. The swifts were placed, several dozen at a time, on a winding 'engine' (so-called even though it was hand-powered) and above them was a row of horizontal bobbins, one for each swift. As the machine turned, a single filament of thread spooled from each swift on to its bobbin. At this stage the silk was known as 'dumb singles' and could be used in that state for weaving gauzes.[7]

Silk twisting in Leek

But Leek specialised in the production of heavier threads that could be used as sewing threads, tailor's twist or as the warp thread (the one that runs from end to end) in small woven goods. At the Astles' shade, bobbins of silk were passed from the winding room to the room next door, where threads were 'doubled' (or trebled or quadrupled, though the process was always called doubling). This was done by women with a simple machine,

rather like a spinning wheel but turned with a handle, and involved winding several threads together on to the same bobbin. Doubling did not require much skill and was one of the most poorly paid jobs in the silk industry. The 'piecers' – often young children with nimble fingers – worked alongside the doublers and winders, joining the fragile threads when they broke and picking off slubs and bits of dirt. Hannah worked as a piecer herself, and she and Josiah employed ten more piecers and three doublers. Mr Scriven was impressed with the operation: 'The work is light and easy, free from dust and in all respects compatible with health and longevity', he wrote in his notes.

Once the silk filaments were prepared, doubled, and wound on to bobbins, they were sent down to the twisters who plied the threads together.

'At one end of the room is a large wheel turned by a handle. On one face of the wheel, near the circumference, are about a dozen hooks, ranged in a circle [effectively another little wheel of protruding hooks attached to the rim of a wheel about four feet in diameter]. Several threads of silk, twelve or a lesser number, are attached to these hooks and the other ends of the whole twelve are carried to the distant end of the room by the boys. At the other end they are attached to a machine (or 'cross') capable of travelling slowly along the floor. Matters being prepared, the handle of the wheel is set in motion, by which the hooks are made to rotate with great rapidity, and the threads fastened on them become thereby twisted one around another with great closeness.' (*The Penny Magazine*, supplement, April 1843)

'He (the boy) takes, first, a rod containing four bobbins of silk from the twister who stands at his 'gate' or wheel, and … runs to the 'cross' at the extreme end of the room, round which he passes the threads of each bobbin, and returns to the 'gate'; he is then despatched on a second expedition of the same kind, and returns as before; he then runs up to the cross and detaches the threads, and crosses to the roller …' (Samuel Scriven's report, c.1840)

The descriptions are difficult to follow, but in fact silk twisting was very similar to rope making on a rope walk (fig. 4). The man operating the wheel could control the amount of twist – tight twisting gave a hard, strong, matt thread, loose twisting gave a soft, flossy, bright one – and a skilled worker could twist three thousand yards of silk an hour.[8] It was tiring work for the boys who had to run to and fro thirty six times for each roll their master twisted, and who were expected to run as fast as they could because time was money. It was a process that could be, and in many places was, done by machine, but hand twisting was said to produce a better and smoother thread. As late as 1920, when Sir Frank Warner wrote his massive *History of the Silk Industry in the United Kingdom*, silk was still being twisted by hand in Leek, though by then the practice was gradually disappearing.

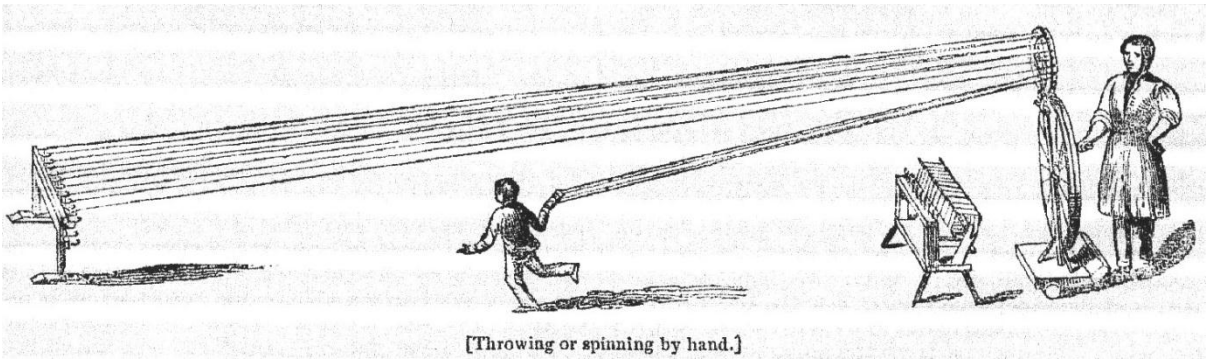

Fig. 4: A twister and his boy from *The Penny Magazine Supplement,* April 1843.

Samuel Scriven was delighted with Leek. 'I believe the children [here] to be better clothed, fed, educated and protected, than any others in the same sphere of life that I have ever met with', he recorded happily. In fact, Leek children were no better educated than their

counterparts in the Potteries, and life for the boy helpers in particular was exhausting. In a working day a boy would probably run between sixteen and twenty miles, usually barefoot – but Samuel Scriven claimed to have checked the children's feet and ankles and could find nothing wrong. He simply recorded that they were 'notorious for being long winded and good runners'! One wonders which twisting shade proprietor was entertaining the commissioner during his short stay in Leek …

Josiah and Hannah paid their twisters just 7s 6d for forty-two 'rolls' per week with an additional 3d for each extra roll they produced. This was considerably less than the going rate (which according to commissioner Scriven was 7d a roll) but the fact that the men were in regular employment probably counteracted the relatively low payment-per-roll. A roll was divided into twelve 'hardings' and each harding contained seventy-two skeins of prepared silk. According to Hannah: 'An active man makes 15 rolls per day'- though, in fact, Samuel Scriven found that most men could only produce half that number. However, even that meant that they could fulfil their forty-two roll quota in just five days.

This partially explains Hannah's complaint on the day of the interview that: 'The twisters are not regular in their work. Today they are all gone a-drinking; but then they must work the faster and harder tomorrow to make up for it'. This happened in the Potteries too. Monday was 'Saint Monday' a day of drinking and idleness that often spilled over into Tuesday and sometimes even Wednesday. Men who were paid a weekly rate for a certain amount of output, like the silk twisters and potters, were not governed by factory bells and hooters as were their counterparts in the mills. Provided they filled their weekly quota, it was up to them which days, and how many of them, they chose to work. Of course, this must have made life even more tiring for the boys they employed, though Hannah was dismissive of the idea that the helpers were at all hard done by. She claimed that the firm made sure the boys always got their full 7d a day (for working from 6 am to 7 pm with breaks for meals) and that when they worked extra they sometimes got an extra penny! 'I think the men are pretty good to them; if they were not the boys would not stay, as they are not obliged to do so', she said. She seemed to have forgotten how important children's wages were in poor households – and though Leek appeared relatively prosperous there were still plenty of families living at subsistence level.

Young Allen Phillips, who was a helper for John Darcey, one of the two Darcey brothers whom the Astles employed, was less sanguine about his working life. He got 4s a week for working six thirteen hour days, all of which he had to hand over to his widowed shoemaker father. Allen had grown up in Bradnop, out in the country, he was illiterate and did not even attend Sunday-school. John Darcey, his master, was one of the men off on a drinking spree at the time of the commissioner's visit, but Mr Scriven met the younger Darcey brother, sixteen year old Joseph, for whom Allen was working that day. Joseph was himself a helper, earning 5s a week, but he also did a bit of twisting when his brother was absent. He could read and write a little but had never been to day school.

Samuel Scriven also interviewed a little girl who worked upstairs, Lucy 'Hastel', who had worked as a piecer since she was just five. She went to the Methodist Sunday-school where 'they teach me catechism and the spelling book' – though as she could neither read nor write it is difficult to see what use spelling was to her. She was adamant that the children were never punished: 'Master just says "Mind your work" ' – though she did admit that any child regularly caught misbehaving was likely to be sacked. She also claimed that: 'We are all very comfortable and very happy; we like the work and would not like anything else better' – but as she seems to have been a poor relation of Josiah's, the daughter of James Astles who was probably his cousin, and as her formidable Aunt Hannah was in the room with her, it was more than poor Lucy's job was worth to say any different.

Climbing the social ladder

Josiah and Hannah's marriage may well have been one of mutual convenience, and she may have been a fairly elderly bride by the standards of the time, but by 1841 they had had three children, Eliza, then fifteen, George, ten, and Mary, seven. George died in 1845 at the age of fourteen, of consumption. Hearing their son's racking cough and watching him waste away before their eyes must have been terrible for the Astles, and they must also have been bitterly disappointed that there would be no-one to inherit the business for which they had struggled so hard. So their daughters became their focus. If they could not build a dynasty then at least the couple wanted to put their humble origins behind them and be accepted into Leek society. The 1851 census recorded that their then seventeen year old daughter, Mary, was still 'a scholar', so she was probably having private lessons in subjects like drawing, French, music and dancing, ladylike accomplishments that would fit her for a life of leisure. Her parents were determined that she should have all the advantages that they had missed – Hannah and Josiah had both been at work for at least four years by the time they reached her age.

Eliza, the eldest daughter, had probably had a similar sort of education - and it had paid off. She got married in 1846, the year after her brother's death, to James Bermingham, a silk manufacturer. The Bermingham brothers were well known in Leek and their mill on Compton (where the Antiques Emporium now stands) employed upwards of a hundred-and-fifty people (fig. 5). Eliza had done her parents proud. And it was not long before grandchildren started to arrive – Mary in 1848, George Henry in 1850, Elizabeth in 1852, James in 1853 and, as an afterthought, young Michael Patrick in 1860.

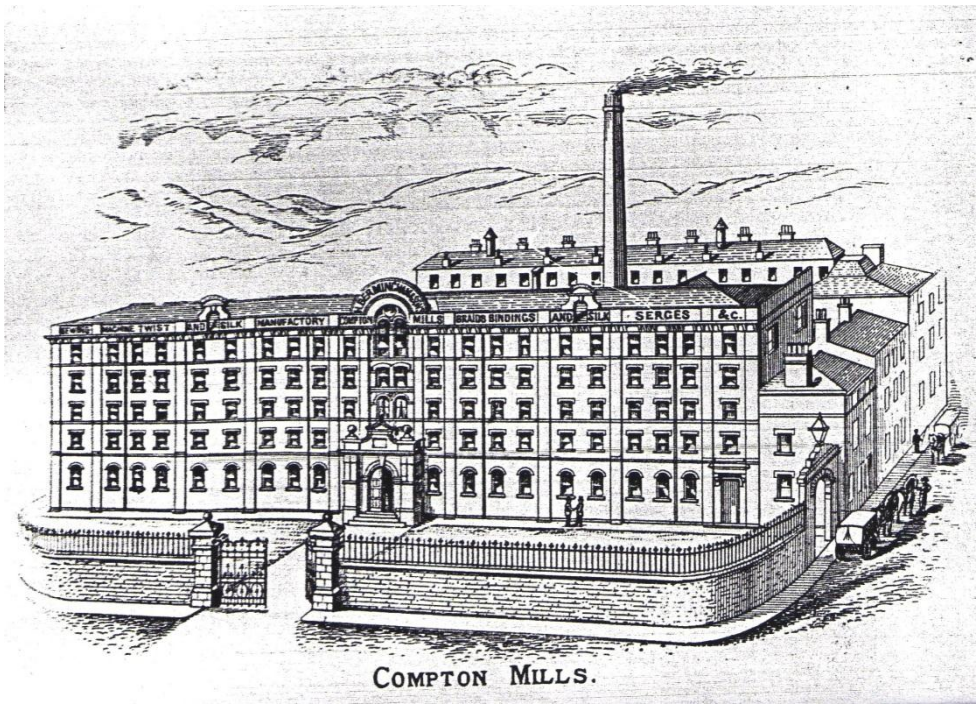

Fig. 5 Compton Mill from *Leek and District Illustrated.* Undated.

Hannah and Josiah must have been delighted, but also rather overawed by the company in which they now found themselves. James and Henry Bermingham were the sons of an Irish Catholic family who had somehow come to settle in Leek, and their father, another Henry, had started the business from scratch. His sons had no reason to look down on the Astles. But the same could not be said of other local families. It was probably much harder for Hannah than it was for Josiah – the silk merchants of Leek were less snobbish than their wives and seem to have accepted him as the astute, hardworking businessman he

undoubtedly was. But Hannah had been a servant for twenty years, and then a factory hand. Admittedly, the factory was their own, but she had still had no time in her life to acquire fashionable skills or ladylike manners and she was very probably illiterate. She must have stuck out like a sore thumb among the ladies of the families with whom her husband was beginning to associate.

In or about 1850 Hannah and Josiah let their shade and part of their London Street site to Miles Simpson.[9] By then they may have acquired some of their neighbours' land as well as their original plot, for the property now comprised two shades, one 'formerly a silk mill'. They also seem to have built two more rows of cottages fronting on to London Street – one row of four identical to the one in which they had lived, and a row of four three-storey weavers' or twisters' cottages with big windows to the top floor; together these occupied considerably more than the hundred and fifty-seven foot frontage of their original plot. They seem to have employed the same builder; the properties are architecturally obviously part of a single development. The total rental value of the thirteen properties would have been at least 25s a week – a tidy sum in 1850.

At some point in the 1840s Josiah and Hannah moved out of their terraced cottage and into a fine, large, semi-detached house on Compton – number thirty-five (fig. 6). A few years later, James and Eliza and the grandchildren moved in next door. Josiah owned their house too. He was now a silk broker with a warehouse next-door-but-one to his new home, and throughout the 1850s he bought and sold land on Compton and in other parts of Leek.[10] He had become a respected entrepreneur, hobnobbing with some of the best families in town and invited to have his say in matters relating to the district. In 1844, for example, he was one of the signatories to the petition against the establishment of a police force in Leek.[11] Hannah helped and supported him every step of the way, but as time went on he probably began to feel she was holding him back. He needed a wife who dressed fashionably, who could manage servants, who could entertain and hold her own in polite society.

Epilogue

So when Hannah Astles died in the spring of 1857 he did not mourn for long. She was sixty-four, and no doubt well satisfied with what she had achieved. But it *had* been a marriage of convenience, Josiah was still only fifty-three, and he remarried with what even today looks like indecent haste. Victorian society laid great stress on mourning as a mark of respect. Men with young families often married again quickly after they were widowed – society could accept that young children needed a mother – but even then, a year and a day was the accepted minimum period for which a man was expected to remain single. Josiah waited just four months. His new bride was Mary Ann Mellor, probably a relation of one of his silk manufacturer friends, William Mellor. Hannah had secured Josiah's financial position, now, he hoped, Mary Ann would secure his place in Leek society. It was an unseemly piece of calculation.

Even worse, in some ways, was his daughter, Mary's, marriage. The outward show of mourning fell heavily on the womenfolk in a family, and, while her father was only obliged to wear a black armband for three months, Mary should have seen out a full year of mourning for her mother wearing heavy black before moving into the 'half mourning' colours (grey, white or lilac with black trimmings) that were just about acceptable for a wedding dress. Many Victorian brides had to postpone their weddings because of a death in the family, and numerous 'half-mourning' wedding dresses survive. But Mary did not wait. She too cut short her mourning after a few months and married Henry Bermingham, her brother-in-law's younger brother, in August, 1857. It was another excellent match and no doubt Josiah had advised his daughter not to delay. But it was an insult to Hannah's memory that did Mary little credit. Maybe she was thinking of this when, in December 1860, she gave birth to her

second child, a little girl, and named her Hannah. In all, Mary and Henry Bermingham had four children, two boys and two girls.

Having lost his son, Josiah Astles turned to his sons-in-law to promote his businesses. In September 1867, a decade after Hannah's death, James and Henry Bermingham, two of the most prominent silk manufacturers in Leek, took him into co-partnership as 'tenant in common' of a silk warehouse near his home on Compton.[12] Josiah owned the warehouse and the Bermingham brothers paid him an annual rental of £15 and had probably already been using the warehouse for a number of years. But the formalisation of the relationship was important. Josiah Astles was now joined, both by marriage and business partnership, to one of the chief silk manufacturing firms in Leek, a firm which his grandsons would inherit. Hannah Holton's £90 had bought him everything he had ever wished for. The Bermingham firm continued to manufacture silk in Leek until the mid-20th century when the trade was destroyed by foreign competition.

Josiah and his new wife, Mary Ann, lived on in their house on Compton until he died in 1884, a grand old man of eighty. In his will he left almost everything he owned to be divided between his two daughters. Though he described her as 'my dear wife', and had been married to her for twenty-seven years, Mary Ann was only to have a small annuity of £26 – or 10s a week – and the use of 35, Compton and its contents for her lifetime or until she remarried. George Josiah, Mary's youngest son and presumably Josiah's favourite grandson, was to have his gold watch and chain with all its fobs. Elizabeth, already a widow, was to inherit the house she and her children lived in, 33, Compton (fig. 6), the house and warehouse next door at number 31, four houses on Duke Street and the four cottages Josiah still owned on London Street – numbers 15 to 21. Mary was to have her father's house on Compton when Mary Ann died, and ten terraced houses on Duke Street. The rest of his money and possessions were to be divided equally between the two girls. In fact the properties were not worth a great deal and Josiah's entire estate was valued at just £2,769 11s 1d.

Fig. 6: Numbers 33 and 35, Compton. Author's photograph.

In death Josiah was reunited with Hannah – they share a grave in St Edward's lower churchyard with their son, George. Their daughters and grandchildren thrived. Despite their Roman Catholicism, the Berminghams were well-respected in Leek and Hannah's grandsons were on friendly terms with most of the well-to-do families in the area – something she could surely never have imagined possible during her years in service.[13]

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[1] The prices in this article are given in Britain's pre-decimal currency. £1 in 1840 was worth approximately £45 in contemporary (2015) money. There were 20s (shillings) to the £ (pound) and 12d (pence) to the shilling.
Measurements are given in the Imperial system. A yard is slightly shorter that a metre; there are 3 feet in a yard and 12 inches in a foot.
Weights are given in pounds (lbs) and 1lb = 0.453592 of a kilo.
The main source for this article is the *Report on the Employment of Children and Young Persons in Trades and Manufactures,* Vol 10, 1843 particularly the section on 'The Town of Leek' c 96-8. (CEC)
Other sources are listed below.
[2] Information from Cathryn Walton of Leek History Society.
[3] Census returns and the death certificate of Job Holton (Hannah's father).
[4] Warner, Sir Frank, 'Leek' in *The History of the Silk Industry in the United Kingdom,* c.1920.
[5] ibid.
[6] Bednall archive BC1/1530.
[7] Bush, Sarah, *The Silk Industry,* 1987.
[8] Information from Alan Bednall.
[9] Bednall archive, BC1/1223.
[10] SRO D1227/A/6/17-53.
[11] Information from Alan Bednall.
[12] Bednall archive, BC1/302, BC1/468 and BC1/580.
[13] See Inder, Pam and Aldis, Marion, *Finding Susanna,* 2002.