

# THE EARLY COTTON INDUSTRY IN NEW MILLS, DERBYSHIRE

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With its gritstone hills and westward-flowing rivers, the pronounced north-west extension of Derbyshire has physically more affinity with the western Pennine fringe than the rest of the county. At the core of this 'pays', the area now known as New Mills was once part of a wide administrative division known as Bowden Middlecale.<sup>1</sup> It originally consisted of ten hamlets, within the ancient parish of Glossop, a wide and extensive parish partly reflecting its geography and geology — gritstone moorlands and lower shelves of sandstone and shale areas with intervening valleys. The low grade and marginal farming carved out of the lands of the royal forest of Peak from the mid-thirteenth century contributed to the establishment of the large parish. Study of local probate documents show that before the industrial revolution the area consisted of scattered hill farms, cottages and hamlets, all with names recognisable today.<sup>2</sup> While maps of the seventeenth century show a surprisingly complete pattern of fields and the line of today's roads.<sup>3</sup> The diffused rural population of family farms practised a pastoral economy with sheep, cattle and oats, supplemented by spinning and weaving wool and flax at home. Throughout the probate inventories

recurring items indicate the important place of domestic textiles — varying amounts of yarn, wool, flax and linen; raw wool and linen cloth, kersey pieces and blankets; spinning wheels, woollen wheels, looms, gears and cards; tenter bars and boards, shears and shearboards, presses and papers. Farmers were supported by the existence of local specialist weavers and clothiers, the nearness of market towns such as Chapel-en-le-Frith and Stockport, and by an efficient system of local credit and debt.

In its pre-industrial history, the New Mills area displayed a close affinity with the former royal forests of Rossendale and Bowland. These latter have been the subject of several historical studies. Notable among them is Tupling's 1927 study of Rossendale which set out a standard of methodology and approach which has hardly been surpassed. More recently the availability of other sources, such as probate records, and new approaches employed by modern economic historians, have added much to our understanding of these pre-industrial regions.<sup>4</sup> Nonetheless, relatively little is known about early industrial development in the New Mills area. This article makes a contribution towards filling that gap. Unlike some earlier studies which located the New

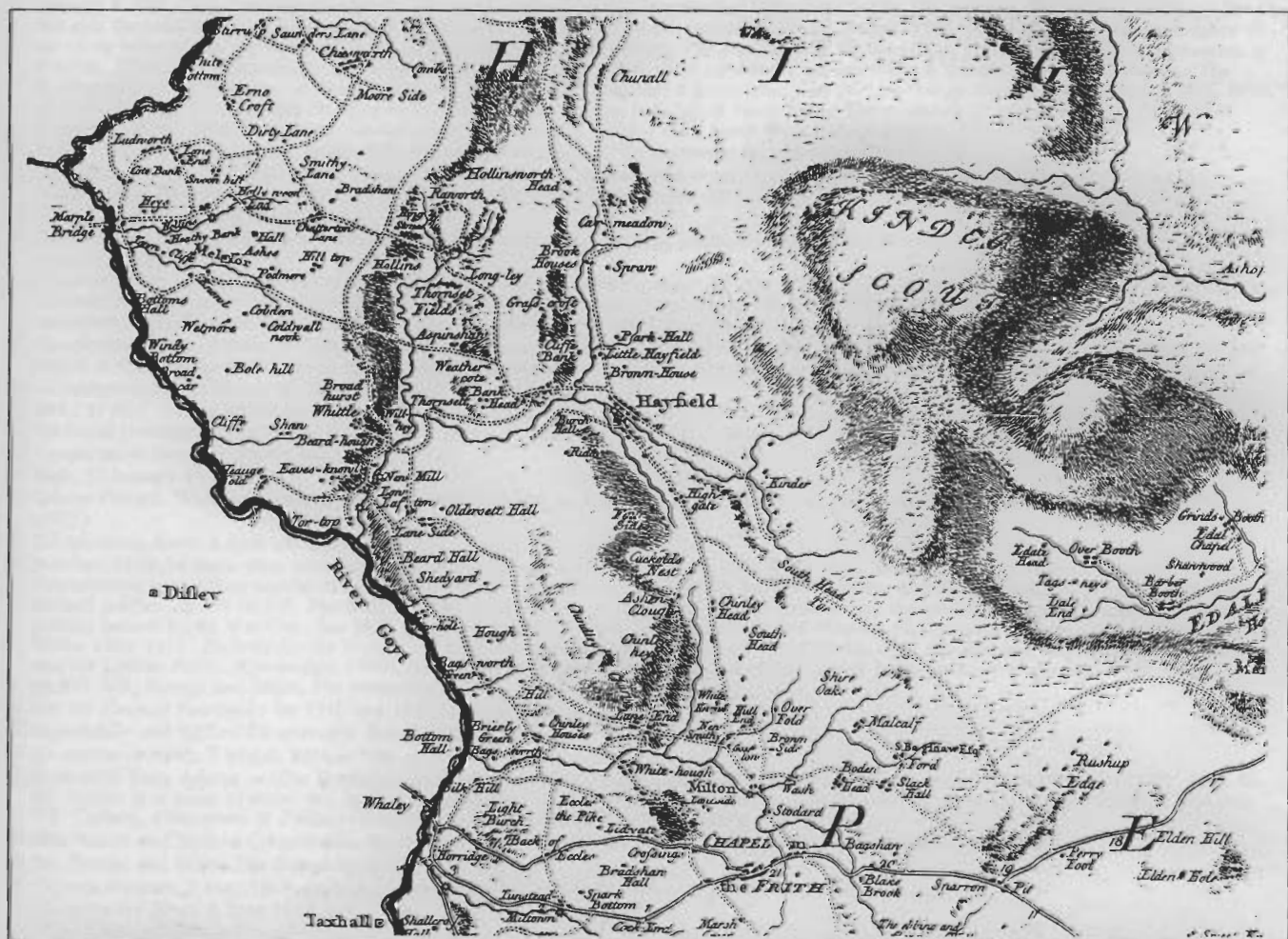


Fig. 1. Part of Burdett's map of Derbyshire, 1767, reprinted with minor amendments 1791. Published twenty to twenty-five years before the arrival of the cotton mills, it shows the hamlet of 'New Mill', with the corn mill on the river Sett marked by a star. Just below this, another star marks Beard Mill, a fulling mill.

Mills region within administrative county boundaries, here, it will be studied as part of the fringe of the textile region of south-east Lancashire and north-east Cheshire. Thus, there will be an emphasis on the commercial links with Manchester and Stockport, rather than the more traditional focus on Derbyshire.<sup>5</sup>

When Toynbee lectured on the concept of the industrial revolution, he, and others following him, treated it indeed as a revolution, a complete break with the past, introduced "suddenly, almost like a thunderbolt from a clear sky."<sup>6</sup> In the inter-war years and after, this approach was replaced with a more gradualist view, which recognised a slow evolution over centuries that suddenly came to a head.<sup>7</sup> Such studies acknowledged that the growth of rural economies, particularly rural industries, laid the foundation for the great advances in technology and industrialisation towards the end of the eighteenth century. With economic historians paying more attention to the influence of markets, labour and society, this crystallised into the concept of proto-industrialisation as the first phase of industrialisation which preceded and prepared modern industrialisation proper.<sup>8</sup> The conclusion by some, for example Coleman, that the concept of proto-industrialisation had limitations as an explanatory model generated a lively and vigorous debate.<sup>9</sup> As a result, historical attention returned once more to pre-industrial economic history generating a number of important studies of regions with a substantial proto-industrial history.<sup>10</sup> For many of these historians the pre-industrial region made a significant contribution to national economic development. In a further recent development, discussion of the role of regions has been linked with a growing interest in the 'long' eighteenth century (1680–1820) and the burgeoning debate over the origin and character of the industrial revolution.<sup>11</sup>

The concept of proto-industrialisation as a phase between the pre-industrial and the industrial phases has refocused attention onto regions and the differences between them.<sup>12</sup> This article examines the industrial development of the New Mills region in an attempt to shed further light on debates over proto-industrialisation. In focusing on the movement from domestic woollens to factory cotton in the New Mills region, it will be considered how far these conditions served as a foundation for industrialisation and the growth of a new town.

### The Context for Pre-Industrial Development

The years after 1650 were a critical phase in laying down the pre-industrial foundation. Disafforestation and the division of the wastes and commons of the former royal forest of Peak — in sole ownership of the duchy of Lancaster and the crown — led to their passing into private ownership where they could be enclosed and improved and new farms created.<sup>13</sup> The somewhat slack manorial control under the duchy-rents in the early eighteenth century were still at the levels set in the thirteenth century — meant that there had been few restrictions on the process of inheriting and acquiring land inheritance.<sup>14</sup> The change from leaseholds and copyholds to freeholds encouraged the growth of an independent and moderately wealthy class of yeomen and husbandmen, evident today in the large number of halls and hall-farms dating back to at least the sixteenth century.<sup>15</sup> The character of the settlement of the region in the immediate pre-industrial period is well seen in Burdett's map (Fig. 1).

There was no clear distinction between farming and trade or industry until the arrival of the cotton mill in the late eighteenth century. Probate inventories confirm the close ties between crafts and industrial activities and agriculture.

Until the true industrial period got under way — with the introduction of industry and the emergence of the new town of New Mills out of the rural hamlet around the corn mill — the rural economy remained essentially mixed. In considering how far domestic activities were a preparatory stage towards industrialisation, it is unfortunate that just as we enter the period of transition in the last quarter of the eighteenth century, inventories cease to form part of probate documents.

### The Introduction of Cotton

From the mid-1780s, with the introduction of water power, mechanisation and the factory system for cotton, there came a rapid and fundamental change. New mills based on water power were built in the Torrs, the natural gorge running through the town, formed by the two rivers the Sett and Goyt.<sup>16</sup> The Torrs were particularly suitable for mill construction. Rocky waterfalls and cascades in the beds of the rivers allowed the construction of weirs and the provision of a steady supply of water, there were good sites on a rocky terrace a few feet above the water, and the sides of the gorge provided sandstone for building. The original nucleus of houses was built around the 'New Mill', a duchy of Lancaster corn mill dating back to at least the late fourteenth century. From here a new town quickly grew up. A population of 1,878 in 1801 had almost doubled by 1831. New Mills, as it became known from about 1775, became an important centre for cotton spinning, bleaching, dyeing and calico printing. By 1819 there were eight spinning mills, two printworks and two bleachworks.<sup>17</sup> From the 1840s and 1850s steam power was introduced into the established mills. About the same time a second phase of mill building, using steam power from the outset, took place on the banks of the Peak Forest Canal at Newtown.<sup>18</sup>

The association between rural industry and regions of pastoral and subsistence farming with infertile soils is well founded. New Mills fits into this model. The area contained significant numbers of farmer-manufacturers who as self-employed craftsmen grew or bought their raw materials and subsequently sold their products. However, the circumstances of rural industry were to change with the introduction of cotton in north-west Derbyshire and the neighbouring Peak District. By the 1780s jennies with 80–120 spindles were available. These were too large for domestic use and were installed in workshops.<sup>19</sup> Although no primary documentary evidence has been found for the introduction of cotton spinning in rural workshops in the 1770s and 1780s in the New Mills area, observations by contemporary writers, James Pilkington and William Radcliff, record the considerable amount of work going on in rural workshops in north-west Derbyshire using jennies for spinning cotton.<sup>20</sup> This would be only for weft yarn, that is yarn destined to be used for cross thread on looms, since the jenny was "unable to give to the yarn that degree of firmness and hardness which is required in the longitudinal threads or warp."<sup>21</sup>

Pilkington in 1789 observed that "A considerable quantity of cotton is . . . spun upon hand-machines or wheels in the north-west part of the county . . ." and mentions a large number of villages and hamlets in the Peak District where cotton-spinning, evidently by jennies, was being carried on.<sup>22</sup> "Hand-machine" may also mean carding engine, which played a decisive part in the early development of the cotton factory system. Where turned by hand it could be used in small workshops to give out cardings to be roved and spun by domestic workers. Improved jennies, which had been adapted for making rovings, were often added to give cotton out in that form.

**Table 1: Cotton mills of New Mills as listed in the Land Tax Assessments, 1778–1832**

Mill	1778	1796	1799	1803	1826
Paper Mill	0s 6½d	0s 6d		2s 0d	
Corn mill (Bower)	3s 3d	3s 0d	0s 11¾d	11s 10d	11s 7½d
Bower Mill		2s 0d	0s 11¾d	0s 11d	7s 9d
Spinning shop (Beard)		0s 6d	0s 5¾d		
Barnes Mill ('new factory')				14s 0d	
Goddard Mill		1s 0d	4s 10d	19s 8d	
Crowtherts Mill (Rock)			4s 10¾d	19s 8d	13s 9d
Torr Mill and house				19s 7½d	
Dyehouse		1s 0d	0s 5¾d	4s 0d	
Dyehouse			0s 5¾d		
Cloth mill (Beard)		0s 6d	0s 5¾d		
Mill (William Gaskell)		0s 9d	0s 8¾d		
Hyde Bank Mill (Beard)		5s 0d			30s 1d
Mill (John Collier)		0s 9d	0s 8¾d		
Mill (Sidal Beard)		0s 6d	0s 5¾d	2s 0d	
Mill (Benj Arnfield)		0s 3d	0s 2¾d	4s 0d	
Bate Mill		1s 0d	0s 11¾d	0s 11¾d	3s 11d
Mill (Randal Taylor)		5s 0d	2s 5½d		
Little Mill, Rowarth		1s 3d	1s 2½d		
Top Mill, Rowarth		1s 0d	0s 11¾d		
Froggatt's Mill, Rowarth		1s 0d	0s 11¾d		

Notes: From 1826, returns specify the nature of the property instead of, as previously, often lumping land and buildings together.<sup>28</sup>

Source: Derbyshire Record Office, QRI/E, Land Tax Assessments for the Hamlets of Beard, Ollersett, Thornsett, and Whittle, 1778–1832

When Samuel Crompton made his census of spindles and spinning machines in 1811, he found that there were still four manufacturers around Stockport who had no other kind of spinning machinery than jennies.<sup>23</sup> Workshops started before the first warp-spinning mills were built and proved complementary to the mills well into the nineteenth century.<sup>24</sup> This complementarity illustrates how the factory system grew out of rural or rural-type industry, a condition which has led to it being labelled proto-industry.<sup>25</sup> Evidence for such complementary workshops in New Mills is found in the land tax assessments. In 1796, when water-powered spinning mills had been established locally for over ten years, the land tax assessments listed fifteen mills in the New Mills area. 'Mill' may also mean a machine, suggesting that it is jennies and weaving shops which are being referred to.<sup>26</sup> Most were certainly small — too small for factory mills — ten of the fifteen being assessed at 1s or less compared with the corn mill at 3s 3d. One was assessed at only 3d and another, specifically termed a spinning shop, was assessed at 5¾d (see Table 1).<sup>27</sup>

Such workshops received the raw cotton from merchants and returned it to them as weft yarn. Whether set up with jennies, carding engines or mules, these workshops did not require a great deal of capital. If loans were required, then probably they could be found locally, making use of the system of credit built up in the rural community over the centuries, so well recorded in the probate documents.<sup>28</sup> They were the means whereby a trader could start in the business and grade up to a factory mill later.<sup>29</sup> The New Mills area at this time was on the edge of a wider area encompassing Stockport, Ashton and Oldham which specialised in spinning. No doubt, like Oldham and its neighbourhood several years earlier, these small mills would have had employees numbered only in tens.<sup>30</sup> In addition,

they would have been moved by horse power which was easily installed.<sup>31</sup>

In 1788, three cotton and weft manufacturers of 'New Mill' are listed in a Manchester Directory as "country tradesmen attending Manchester market."<sup>32</sup> The use of the term weft suggests yarn for cross threads, perhaps worked by horse capstan and jenny mills, with domestic machines improved for workshops.<sup>33</sup> Spinning for the finer warp yarn (for the lengthways threads), however, required factory organisation using water frames or mules. This was located in the mills in the Torrs, which were concurrently making use of the water power there. These factory mills are easily recognisable in the land tax assessments, two being assessed at five shillings. This suggests that the domestic system, with its workshops, was not suddenly expunged. For several decades the old and new ran side by side in great contrast — weft was spun on jennies and, after 1780, on mules in workshops, while warp was spun on the water frame or mules in the factory. Well into the factory age workshops were still contributing to the local cotton industry, and it is in these examples that we see the transition taking place between rural industry and the beginnings of industrialisation.

The increased production of yarn required more weavers. Radcliffe, writing in 1819–22, describes how from 1797 onwards "we put out work in Macclesfield, Congleton, Mottram-in-Longdendale, in Cheshire, and all parts of the hill countries of Derbyshire within the distance of a day's journey from Mellor".<sup>34</sup> Since Radcliffe said he was producing 600–700 pieces per week, this would represent the work of about the same number of weavers (he says 'upwards of 1000'), for one piece was considered to be a week's full-time work.<sup>35</sup>

Thus, at the time that the new factories were being set up, from around 1785, a transformation was taking place in rural domestic industry in north-west Derbyshire with the introduction of cotton mule yarns for the warp as well as the weft. Fabrics made from wool or linen largely vanished.<sup>36</sup>

Subsequently, there developed an imbalance between the production of yarn and the availability of weavers. As a result, weavers could command very high wages. In 1796, a weaver reputedly received 33s 3d for one piece and some families might have more than one loom.<sup>37</sup> A previously unknown standard of living permeated all classes of society in such areas for "this money in its peregrinations left something in the pockets of every stone-mason, carpenter, slater, plasterer, glazier, joiner, etc. as well as the corn dealer, cheese-monger, butcher, and shop-keepers of every description."<sup>38</sup> Weavers assumed the mantle of an exclusive working class.<sup>39</sup> But Cartwright's power loom gradually came into use undermining the weavers' position. The growth of power loom weaving after the early 1800s led to the famous Royal Commission Report of 1839 on the deteriorating condition of hand loom weavers.

So a new age of rural manufacturing predating and then running parallel with water-powered mills began, lasting until about 1803. Chapman, draws attention to this rural industrialisation in cotton taking place in north-west Derbyshire, which, like the rest of the Pennine fringe east of Manchester, was peripheral to the Lancashire cotton industry both economically and geographically.<sup>40</sup> Writing a few years before Mendels' seminal article, Chapman did not employ the concept of proto-industrialisation but clearly that is what it was, or very nearly so. Being imported, the raw material was controlled by the merchants and the

putting-out system turned domestic textile workers of wool and linen into wage earners for the cotton industry.<sup>41</sup> Some studies have claimed a direct path from proto-industry to the factory.<sup>42</sup> This progression, however, was blurred locally by the overlap between workshop and factory industry during the last years of the eighteenth century and the early years of the nineteenth century.

### Early Cotton Factories

The rise of the cotton industry can be divided into three stages. They are broadly chronological but overlapped in time and place. First, water powered factories gradually replaced domestic spinning. Second, steam power was introduced often in tandem with water power on rural sites but also brought the relocation of new mills onto coalfields and canalsides. And a third stage from about the 1820s saw the introduction of the power loom and factory weaving. The rest of this study is devoted only to the first two stages since in the New Mills area weaving did not assume any importance until towards the end of the nineteenth century.

At this point a major question arises: did factory-based industry come in predominantly from outside or was it generated by local activities and local entrepreneurs who had accumulated capital? There were no well developed

capital markets in the area and local capital for building and equipping factories would only be available from previous profits.

Chapman has noted the paucity of records of early firms in the cotton industry and this is certainly true locally.<sup>43</sup> Nonetheless, it is apparent that the first factory masters in New Mills were local men, switching to cotton with the introduction of the new carding and spinning machines, a development paralleled in parts of east Lancashire, especially Rossendale.<sup>44</sup> Thomas Beard, described as a woollen manufacturer with a warehouse in Manchester, started the first cotton mill in New Mills in 1785, on the same site as his woollen mill, leasing the premises to two cotton spinners Crowder and Goddard. Beard was from a family with a long history as woollen drapers.<sup>45</sup> The mill was insured for £1,200, a sum which included utensils, stock, goods, two warehouses and the cotton mill itself. In the same year there is another policy for his two cotton spinner tenants for £1,600.<sup>46</sup> There is an evolution here from the woollen trade to the cotton trade. In 1799, the redundant woollen machinery at Goddard's Mill was up for sale: "five scribbling machines, three carding engines, three billies, one willow, one broad double and single patent perpetual dressing frames, six dressing frames from list to list, two patent dressing raising frames".<sup>47</sup>

In 1789 a three-storey stone building, adjacent to the former duchy corn mill alongside the river Sett, was advertised for let, being described as "lately employed for the purpose of carding and spinning cotton."<sup>48</sup> The corn mill, a separate building, was also for let, suggesting that the cotton mill was a new building or a converted one, and would appear not to represent a switch of capital from corn, but new capital.<sup>49</sup> At this time, the water-powered corn mill was a common focus for the new cotton mills, and, in the case of New Mills corn and cotton mill, made use of the same artificial water course.<sup>50</sup> In 1790-91 Edward and Ralph Bower, who had owned the corn mill for twenty years and were from the local family of clothiers and tanners, were described as the proprietors and occupiers of both the cotton mill and the corn mill.<sup>51</sup>

In addition, new mills were built on virgin sites in the Torrs gorge, a less common occurrence at this time showing the attraction of the water power potential there.<sup>52</sup> They also represent the investment of new capital. In 1788, Daniel Stafford, who occupied the corn mill in New Mills, took out a ninety-nine-year lease on a plot of land containing thirty perches within a bend of the river Goyt on the Cheshire side of the river for the purpose of building a cotton mill.<sup>53</sup> Rock Mill, in a bend of the river on the New Mills side, also commenced in 1788 and a member of the Crowder family previously engaged at Beard Mill, was a cotton spinner and manufacturer in 1794.<sup>54</sup> Torr Mill was built for the Schofield family about the same time.<sup>55</sup>

The size of these mills at this time is apparent from different sources. Wyatt's Mill was advertised for sale in 1800 being described as "twenty-five yards in length, ten yards in breadth or thereabouts and contains four stories in height and four rooms of equal size".<sup>56</sup> Six years later, the same mill was said to contain twenty mules of 228 spindles each, which agrees with McConnel and Kennedy's recommendation of a maximum of 240 spindles for a room of ten yards inside.<sup>57</sup>

When Crowder (Crowther) Mill, later known as Rock Mill, was advertised for sale by auction in 1822, it was described as being stone-built and twenty-four yards long by eleven

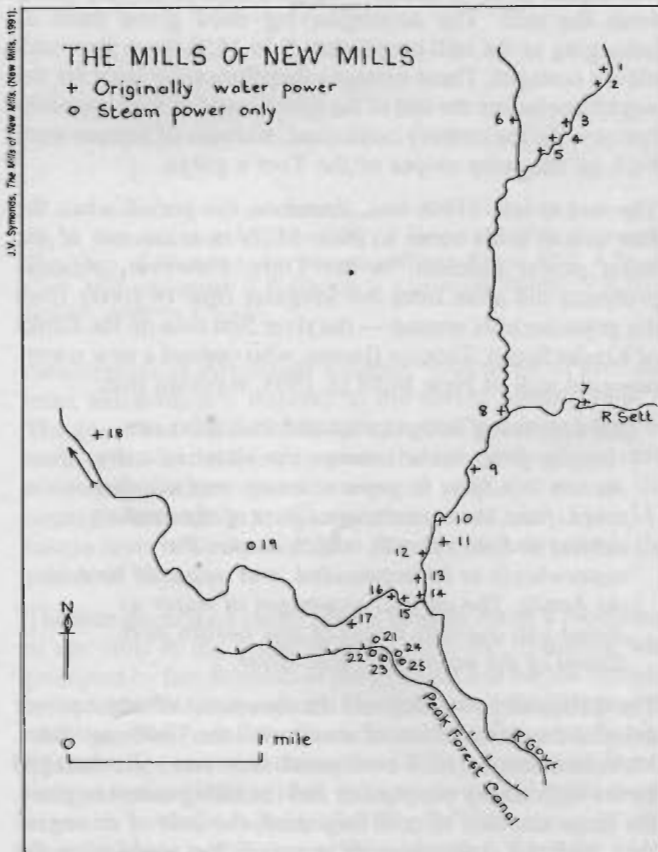


Fig. 2. The cotton mills and the printworks of New Mills (earliest known dates in brackets). ROWARTH: 1 Top Mill (1796); 2 Grove Mill (1822); 3 Froggatt's Mill (1795); 4 Lower Mill (1804); 5 Little Mill (1796); 6 Ringstones or Alma Mount (1800). NEW MILLS: 7 Garrison Printworks and Bleachworks (1800); 8 Bate Mill (1796); 9 London Place or Watford Bridge printworks (1804); 10 Bower or Salem Mill (1789); 11 St George's Engraving Works (1824); 12 Beard or Hyde Bank Mill (1789); 13 Barnes Top Shop (1806); 14 Torr Mill (1794); 15 Crowder (crowther or Rock Mill) (1788); 16 Torr vale Mill or Lowe's Mill (1788); 17 Wyatt's, barnes or Grove Mill (1793); 18 Strines Printworks (1792); 19 Hague Bar (1828); NEWTOWN: 20 Brunswick Mill (1872); 21 Albion Mill (1859); 22 Warksmoor Mill (1850); 23 Victoria Mill (1860); 24 Woodside Mill (1872).

yards wide, virtually the same dimensions as Wyatt's Mill.

*ALL that MILL or FACTORY, situate on the Banks of the River Goyt, in the Torr, near New Mills aforesaid; with the Iron Water wheel, and gearing, detached Warehouses, Arched Stove, Mechanic's Shop, Cottage for a manager. . . The detached Buildings consist of two groups; the one eleven yards long by six wide, the other twelve yards long by six wide. The machinery is worked by the powerful stream of the said river.*<sup>58</sup>

A later advertisement describes the cotton spinning machinery of this mill as "Two sets of Preparation consisting of one Picker, one Willow, one Blower, ten Carding Engines, one Grinding-machine, seven heads of drawing, three Bobbin-frames, two Stretchers, two Throstles, fourteen mules, two Making-up presses for five- and ten-pound bundles".<sup>59</sup>

The size of these mills is confirmed by a plan of Schofield's mill (later known as Torr Mill) in 1828 (Fig.3).<sup>60</sup> There are two mill buildings, one containing the water wheel and the other fifteen yards by eight yards. There is no indication of the number of storeys, but the plan fits the basic pattern for water-powered mills at this time. The width of the larger mill (fifteen yards) would accommodate mules and this is confirmed by Crompton in his 1811 survey, in which he gives 2,808 spindles in Schofield's mill — twelve mules of 216 spindles and two mules of 108 spindles.<sup>61</sup> Chapman suggests about 1,000 spindles for a three storey mill, but this seems an underestimate.<sup>62</sup> In Wyatt's Mill twenty-five yards by ten yards of four storeys there were twenty mules of 228 spindles each — a total of 4,560 — in 1800.<sup>63</sup> In 1810, Beard Mill of five storeys was advertised to be let together with 6,500 mule spindles, suggesting about twenty-eight to thirty mules.<sup>64</sup>

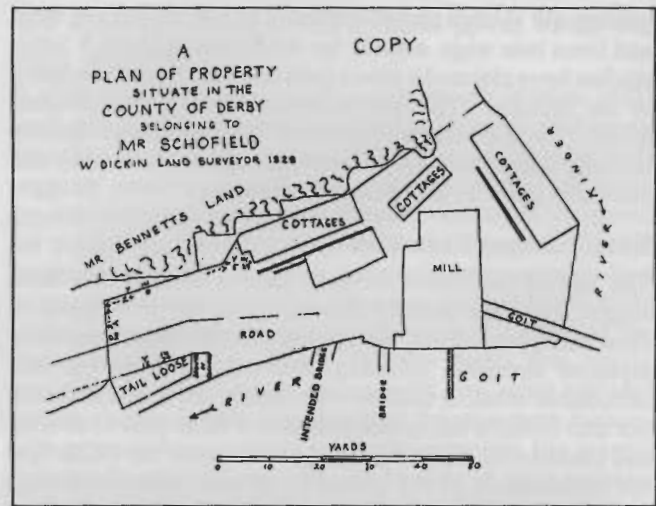
In all these cases the capital and the necessary mechanical expertise were locally derived during the changeover to cotton and the accompanying industrialisation. Even if the workforce did not carry its skills into the factories the new cotton masters did so. These latter came from local families who had made their living and built up capital in businesses such as paper, woollen cloth and corn milling.

Adjacent to Schofield's Mill were three rows of millworkers' cottage houses, a characteristic of such relatively out-of-the-way mills. Wyatt's Mill in 1800 had sixteen adjacent

**Table 2: Dimensions of New Mills cotton mills in the late eighteenth and early nineteenth centuries.**

Location	Advertisement (date)	Dimensions (yards)	Storeys
Beard	MM 27.8. 1799	21 x 8	5
Wyatts	MM 29.4.1800	25 x 10	4
Crowther	SA 22.11.1822	24 x 11	
Ringstones, (Rowarth)	SA 26.11.1823	12½ x 9	3
Rowarth	SA 18.1.1828	16 x 11	3
Schofield's	(Plan) 1799	28 x 15	
	(Plan)	15 x 8	
Rock Mill	SA 27.2.1830	24 x 11	
Little Mill (Rowarth)	SA 3.10.1835	10½ x 5½	3 rooms
Non loc	SA 17.4.1840	12 x 8	
Beard	SA 3.12.1858	24 x 14	4

Source: *Manchester Mercury* (MM) and *Stockport Advertiser* (SA)



*Fig.3. A plan of Torr Mill in 1828, redrawn from a late-nineteenth-century copy. the plan gives an indication of the size of the early water-powered cotton mill, together with the adjacent workers' cottages.*

cottages. When the leasehold interest in Goddard's Mill was advertised in 1810 it included fifteen cottages and land adjoining. A similar notice in May quotes eleven cottages and a plan of 1821 shows them to be on the road leading from the mill. The accompanying deed gives them as belonging to the mill proprietors.<sup>65</sup> In 1858 there were still eleven cottages. These cottages therefore were built for the workforce before the end of the first decade of the nineteenth century. As the century continued, warrens of houses were built on the steep slopes of the Torr's gorge.

The mid to late-1780s was, therefore, the period when the first cotton mills came to New Mills to make use of the water power potential in the Torrs. However, periodic problems did arise from the irregular flow of rivers from the gritstone hills around — the river Sett rose on the flanks of Kinder Scout. Thomas Barnes, who opened a new water-powered mill in New Mills in 1805, reported that:

*the degrees of irregularity, the liabilities are various; first, in the summer the water in a dry season is subject to great scarcity, and at other times, from the mountainous part of the country subject to heavy floods, which causes the waterwheels to be impounded, and a loss of time to the hands. The various stoppages of water as stated will average a loss of one twelfth part. Extent of the power fifty-five horse.*<sup>66</sup>

The difficulties of access and the cheapness of water power delayed the introduction of steam until the 1840s and later. Manufacturers in such semi-rural sites were discouraged by the high cost of purchasing and installing steam engines, the large amounts of coal they used, the cost of an engine man, and the difficulties of access.<sup>67</sup> Yet even after the steam engines were installed, the water wheels were not taken out of use, proving more economical when production levels were low. When the water level was low, water wheel and steam engine were often coupled.<sup>68</sup>

The timing of the start of the cotton factory industry must be seen in the light of two key developments. First, the introduction of the mule about 1782 and, second, the courts' decisions against Arkwright's patents in 1781 and 1785.<sup>69</sup> These occurrences precipitated a rush of new mills for warp spinning.<sup>70</sup> Before then, Arkwright's system was adopted by others only on payment of a substantial licence fee or royalty. Both the introduction of the mule and the

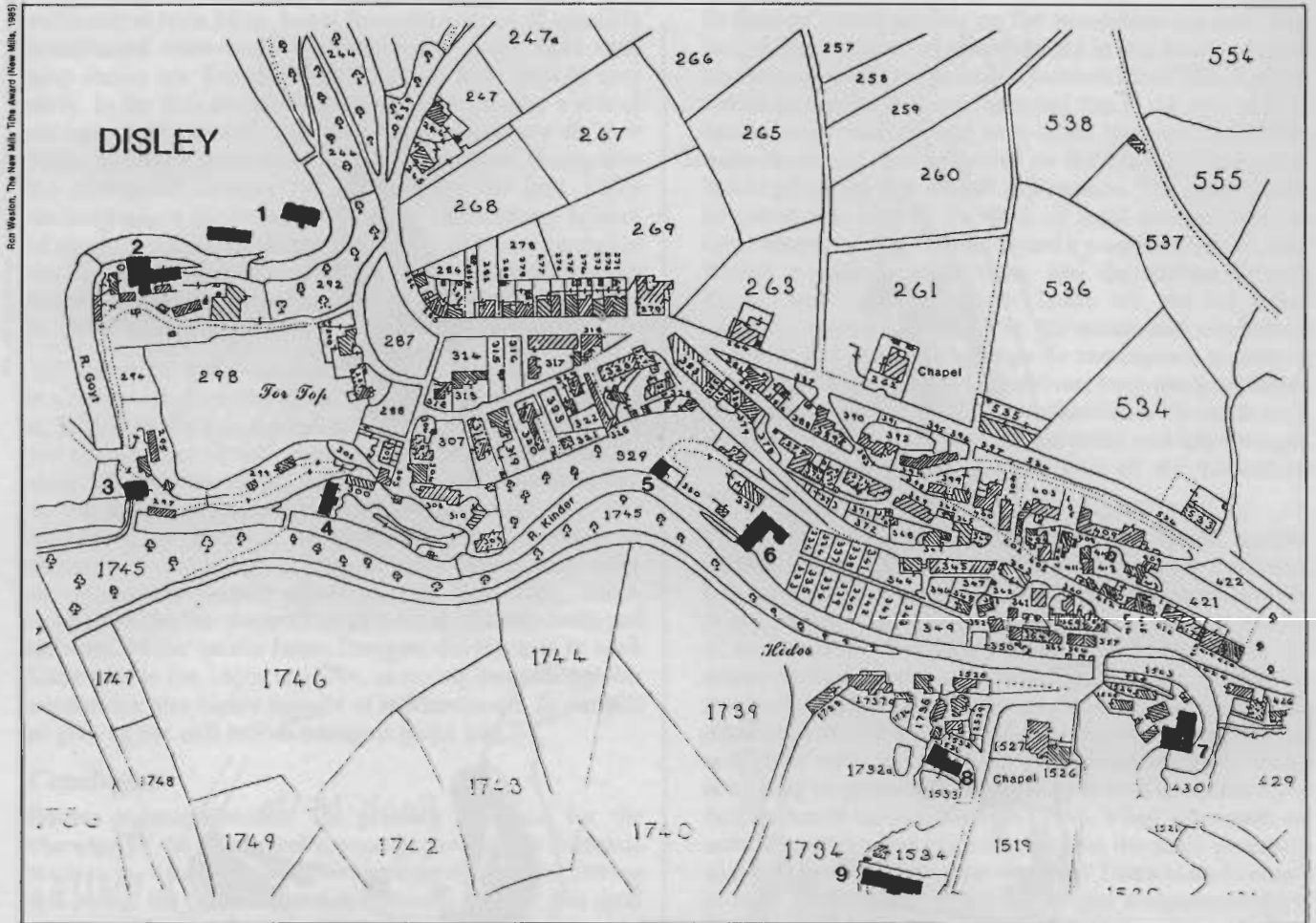


Fig.4. Central New Mills in 1841: 1 Torr Vale Mill; 2 Crowder or Crowther Mill (also known as Rock Mill); 3 Torr Mill; 4 Barnes Top Shop; 5 No name, but associated with Beard Mill; 6 Beard Mill (also known as Hyde Bank Mill); 7 Bower Mill (with Duchy Corn Mill adjacent); 8 St George's Engraving Works; 9 St George's print and Pot Works. The last two are situated on a tributary stream, Andrew Clough.

cancellation of Arkwright's patent "concurred to give the most extraordinary impetus to the cotton manufacture."<sup>71</sup> The growth of the cotton industry in this gritstone fringe of north-west Derbyshire emphasises its geographical and economic distinctiveness compared with the rest of the county. According to Glover there were, in 1831, 112 cotton mills in Derbyshire, and fifty-six of them were in the parish of Glossop.<sup>72</sup>

The introduction of steam power brought about a rebuilding of the mills in the Torrs; in some cases the rebuilding was prompted by fire. Records of the firms are lost but the changes are recorded in other sources. Comparison of the tithe map of 1841 (pre-steam) and the first edition of the Ordnance Survey 25 inch map, surveyed during the 1870s (post-steam), shows that sometime during this thirty-year period mills were extensively rebuilt and extended (Fig.5).<sup>73</sup> Date stones on mill chimneys help to fix some of these changes. Torr Mill 1846, and Beard Mill 1868, although, according to a sale notice, steam power had been installed by 1858.

Beard Mill was the first cotton factory in New Mills and various sources enable us to trace the change from a water-powered mill of the late eighteenth century to a larger steam-powered mill of the mid-nineteenth century. The mill was destroyed by a fire in 1832.<sup>74</sup> The tithe map and award of 1841 shows it sited on the west bank of the river Sett with warehouses and cottages. It is small compared with the complex in 1879 when there was a substantial weir and a much larger mill straddling the river and weir (Fig.5). According to the 1858 sale notice, the mill had been

extensively rebuilt: "Two cotton factories previously used and occupied as one. Water wheel, steam engine of twenty HP and eleven freehold cottages near the mill suitable for residence of workpeople. Old mill 19 x 13 yards and new mill 24 x 14 yards inside measure. Each mill four stories high besides attics. Ample room for building a weaving shed."<sup>75</sup> The development of Beard Mill, exemplifies the importance of the period from 1840 to 1870 in mill development, when there was rebuilding, enlargement and the introduction of steam power in all the local mills and printworks.

**Rowarth — A Case of De-industrialisation?**

It is probable that no other village in north-west Derbyshire gives a clearer impression both of the impact of water power and the subsequent decline of the cotton industry which it gave rise to. Rowarth offers an example of early de-industrialisation. Until the end of the eighteenth century, this was an isolated community of a dozen or so farms connected by only rough tracks. Within a few decades, it was transformed into an industrial village, important enough for a mention in Pigot's 1828 Directory: "The inhabitants are nearly all employed in the cotton mills, there being five of these establishments in this place."<sup>76</sup>

Factory developments in the village (three miles north of New Mills) paralleled those at New Mills. In both cases it was the water power potential which was the attraction. But Rowarth's stream was but a trickle compared with the rivers Goyt and Sett. Weirs thrown across the rivers were

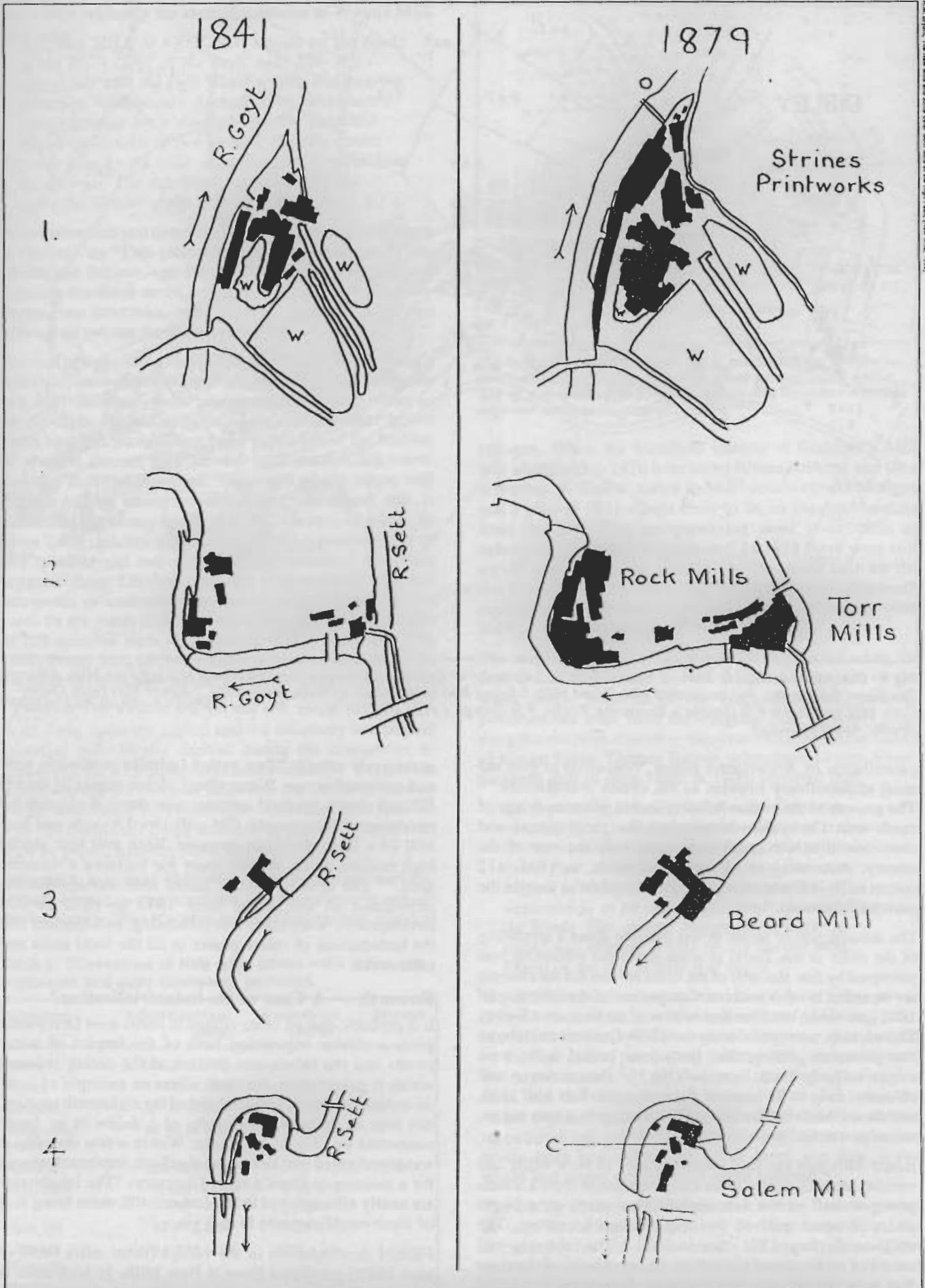


Fig.5. The growth of mills between 1841 and 1879. Tracings made from the tithe map (1841) and the Ordnance Survey map (1879) to show the changes in three mills and printworks. The building 'C' at Solem Mill is the original duchy of Lancaster corn mill, rebuilt in 1391. Known as the 'new mill' from the early 1400s, it gave its name to the town.

sufficient at New Mills, but at Rowarth a series of specially constructed reservoirs were necessary — the 1841 tithe map shows ten. Development seems to have peaked very early. In the first decade of the nineteenth century a row of cottages was erected. But whereas the industry at New Mills, although somewhat marginal, continued throughout the nineteenth century, at Rowarth by the mid 1820s decline had set in. Between 1822 and 1835, eleven notices of auctions and six bankruptcies at Rowarth were carried in the *Stockport Advertiser*. In 1841, two mills and fourteen houses were unoccupied, and by 1871, the population (281 in 1841) had dropped over 43% to only 159.<sup>77</sup>

The reason for this dramatic decline is still evident. Rowarth is a cul-de-sac; turnpike roads, railways and canals bypassed it. Within the village the roads are still unpaved and up to a few decades ago all the roads leading to the village were the same. Moving raw cotton, finished yarn and other products, as well as coal and materials must have become prohibitively expensive. In the face of such isolation, the industrial community could not compete with larger and more advantageously located places such as New Mills, which benefited from the construction of a canal, turnpike roads and railways. Miller quotes James Froggatt, the last man to work Little Mill in the 1860s to 1870s, as saying that although his candlewick was highly thought of in Manchester, he decided to give up the mill before transport broke him.<sup>78</sup>

### Conclusion

Before industrialisation, the primary evidence for the character of the local rural economy, particularly domestic textiles, is chiefly derived from probate documents. During this period the crucial question concerns how far this rural economy was a preparatory stage to industrialisation and the introduction of cotton. The threshold to factorisation in New Mills was crossed in the 1780s. But did this involve any rural domestic element or did it develop independently? As already indicated, the answer is obscured by the lack of inventories during the period of transition. However, the land tax assessments indicate that there was a transitional period. Small workshops employing jennies or mules were worked at the same time that factory mills were being established. Even if this was not a direct path from domestic to factory industry — the picture is blurred — it at least showed the essential connection. There is a comparison to be made with the adjacent parts of the Pennine fringe in Lancashire of which this region was part economically and geographically.

In light of recent studies on the immediate pre-industrial period, the character of rural industry in this locality should be compared with the principal features identified in proto-industrial theory. It should be noted that in the case of New Mills distant markets and large-scale merchant capitalists were absent, so casting doubts on the usefulness of proto-industrialisation as a tool of explanation. The introduction of cotton was largely the work of local men involved in other enterprises — Thomas Beard a woollen clothier, John Barnes a paper manufacturer, and the millers Edward Bower and Daniel Stafford. These are not the urban entrepreneurs of Mendels. Yet, the nature and mechanism of social and economic change do correspond, at least in broad outline, to the model. Moreover, there was a symbiosis of domestic textiles and other industries with small scale agriculture which went back at least to the mid-late sixteenth century, typical of the wider region of the Lancashire western Pennine fringe.

That said, a cloth industry of the strength found in other similar hill country of the north-west, such as south-east Lancashire, Rossendale or the West Riding, was not present. A key change in south-east Lancashire was the introduction of cotton in the first half of the seventeenth century for cotton-using fustians in domestic workshops, a cloth for the market rather than the home. Consequently what was missing in the New Mills region was a putting-out system, and trade with international or national markets, which according to proto-industrial theory would lead directly to factory-based industrialisation. Thus, when the cotton era arrived, carding and spinning became the main processes and yarn was sent away for weaving. There is no evidence in New Mills of any weavers cottages complementary to the early spinning mills. Putting-out does not seem to have taken place in New Mills. The occupations listed in the census returns from 1841 show a dearth of weavers. Moreover, the architecture of the mills shows weaving workshops only from the late nineteenth and twentieth centuries. The conclusion must be that weaving skills were not transferred from domestic wool to factory cotton. However, if not true proto-industrialisation as defined by Mendels and refined by others, the local rural industry — spinners and weavers, clothiers, tanners, iron workers, coal masters — had a particular character during the 'long' eighteenth century, which contributed to establishing a pre-industrial base and made the area appropriately prepared for the introduction of the new factory system based on the virgin power sites.

### NOTES

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- 3 Sheffield City Archives (hereafter S.C.A.), Bag 274, Survey and map of the Beard estate in 1676 and 1690.
- 4 G.H. Tupling, *The Economic History of Rossendale*, Chetham Society, New Series, Vol.86 (Manchester, 1927). N. Lowe, *The Lancashire Textile Industry in the Sixteenth Century*, Chetham Society, 3rd Series, Vol.20 (Manchester, 1972). J. Langton, *Geographical Change and Industrial Revolution: Coal Mining in South West Lancashire 1590-1799* (Cambridge, 1979). J.D. Marshall, 'Agrarian Wealth and Social Structure in Pre-Industrial Cumbria', *Economic History Review*, (hereafter *Ec. Hist. Rev.*) Series 2, XXXIII (1980), pp.503-21. S. Pearson, *Rural Houses of the Lancashire Pennines, 1560-1760* (1985). J.D. Marshall, 'Stages of Industrialisation in Cumbria', in P. Hudson (ed.) *Regions and Industries* (Cambridge, 1989). J.T. Swain, *Industry Before the Industrial Revolution: North-East Lancashire c.1500-1640* (Manchester, 1986). J.K. Walton, 'Proto-Industrialisation and the First Industrial Revolution: the Case of Lancashire', in Hudson, *Regions*.
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- 11 See, for example, M. Berg and P. Hudson, 'Rehabilitating the Industrial Revolution', *Ec. Hist. Rev.*, 2nd Ser. XLV (1992), pp.24-50. Hudson, *Industrial Revolution* (1992). M. Berg, *The Age of Manufactures 1700-1820*, 2nd Ed. (1994).
- 12 Berg, *Age of Manufactures*, p.69.
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- 14 Public Record Office (hereafter P.R.O.), SC6/1094/11, account for 1257-8, unpublished transcription by Roger Bryant; and P.R.O. DL 43/20/9A, rental for 1707.
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- 16 The glacial origin of the Torrs gorge is discussed in D.D. Brumhead, 'Geology and Transport History in North West Derbyshire', *North West Geologist*, No.2 (1992), pp.21-32.
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- 25 Clarkson, *Proto-Industrialisation*, p.10.
- 26 Chapman, *Factory Masters*, p.55.
- 27 The evidence of Thomas Menzies aged forty-four, a spinner, before the factory commission in 1833 described such a workshop as follows: "began to work in a cotton-mill [in Hyde] at eight years of age [1797], piecing for a hand-jenny in a mill where there were about sixteen jennies . . .", *Factories Inquiries Commission. Fourth Volume. First Report from the Commissioners: Lancashire District* (P.P. 1833, XX), p.98.
- 28 Land tax was a fixed tax on real and personal property. The sharp increases in 1803 were probably related to a coincidental increase in the poor rate collected during the height of the Napoleonic Wars. The new assessments remained in force until the end of the lists in 1832. See D.E. Ginter, 'The Incidence of Revaluation', in M. Turner and D. Mills (eds), *Land and Property: The English Land Tax 1692-1832* (Gloucester, 1986), pp.180-88.
- 29 Walton, *Lancashire*, pp.65-66, points out that such men needed only moderate capital, appropriate contacts and ability. Machines could be bought cheaply or second hand.
- 30 "Several of the smallest of the original mills in Oldham and the neighbourhood commenced business with not more than eight or ten hands each, upon an average." E. Butterworth, *Historical Sketches of Oldham* (Oldham, 1856), p.118.
- 31 *Ibid.*, p.116.
- 32 Lewis' *Directory of Manchester*, 1788.
- 33 A.P. Wadsworth and J. de L. Mann, *The Cotton Trade and Industrial Lancashire, 1600-1780* (Manchester, 1931), p.492. S.D. Chapman, 'Fixed Capital Formation in the British Cotton Industry, 1770-1815', *Ec. Hist. Rev.*, 2nd ser. XXIII (1970), p.238.
- 34 Radcliffe, *Power Loom Weaving*, p.41.
- 35 G.W. Daniels, *The Early Cotton Industry* (Manchester, 1920), p.134.
- 36 Radcliffe, *Power Loom Weaving*, p.66. G.J. French, *The Life and Times of Samuel Crompton* (1859), p.76, gives a description: "All these machines were as yet worked by hand; they were erected in garrets or lofts, and many a dilapidated barn or cowshed was patched up in the walls, repaired in the roof, and provided with windows, to serve as lodging room for the new muslin wheels."
- 37 Daniels, *Cotton Industry*, p.134.
- 38 Radcliffe, *Power Loom Weaving*, p.66.
- 39 P. Mantoux, *The Industrial Revolution in the Eighteenth Century* (1928), p.244.
- 40 Chapman, *Factory Masters*, pp.58-9.
- 41 W. Mager, 'Proto-Industrialisation and Proto-Industry; the Uses and Drawbacks of Two Concepts', *Continuity and Change* (1993), p.193.
- 42 P. Kriedte, H. Medick and J. Schlumbohm, *Industrialisation Before Industrialisation* (Cambridge, 1981). See Mager, 'Proto-industrialisation', p.185.
- 43 Chapman, 'Fixed Capital', pp.235-66.
- 44 Ashmore, 'Textile Industry', pp.129-36.
- 45 E. Raffald, *The Manchester and Salford Directory* (Manchester, 1781); Symonds, *Mills*, p.29.
- 46 Guildhall Library and Art Gallery, Sun Fire Insurance Company records, Ms/11936/326, Policy number 500129, 1784-5, and Ms/11936/334, Policy number 513319, 1785-6.
- 47 *Manchester Mercury* (henceforth *M.M.*), 12 November 1799.
- 48 *Ibid.*, 17 February 1789.
- 49 Chapman, 'Fixed Capital', p.236.
- 50 Tann, *Factory*, p.5. Advertisements of the time were couched in such terms as to appeal to spinners, bleachers and calico printers. See M.M. Edwards, *The Growth of the British Cotton Trade, 1780-1815* (Manchester, 1967), p.186.
- 51 D.R.O., Land Tax Assessments.
- 52 Chapman, 'Fixed Capital', p.236.
- 53 Deed held by New Mills Local History Society, summarised in R.M. Bryant and E. Miller, *Deeds of New Mills and District* (New Mills, 1985), pp.38-41.
- 54 Symonds, *Mills*, p.37. Scholes *Manchester and Salford Directory* (Manchester, 1794).
- 55 Symonds, *Mills*, p.35.
- 56 *M.M.*, 29 April 1800.
- 57 *M.M.*, 17 June 1806. Edwards, *Cotton Trade*, pp.200-1, quoting a letter from McConnel and Kennedy to a prospective customer in 1795.
- 58 *Stockport Advertiser* (hereafter *S.A.*), 22 November 1822, quoted by R.M. Bryant, *New Mills in the 1820s* (New Mills, 1983), p.11.
- 59 *S.A.*, 27 January 1826, quoted by Bryant, *New Mills*, pp.11-12.
- 60 "A plan of property situate in the county of Derby belonging to Mr Schofield", 1828. Copy held by New Mills Local History Society.
- 61 Chapman, 'Fixed Capital', p.250. Crompton, *Census, 1811*.
- 62 Chapman, 'Fixed Capital', pp.238 and 250.
- 63 *M.M.*, 17 June 1800.

- 64 *M.M.*, 2 January 1810.
- 65 Deed in the possession of New Mills Local History Society.
- 66 Answers given by Thomas Barnes and Company of Disley and New Mills. *Factories Inquiry Commission. Supplementary Report, Part II: Lancashire District* (P.P. 1834, XX), p.37.
- 67 The building and equipping of a steam engine cost £20-24 for every horse power. Report by James Stuart. *Reports of Inspectors of Factories* (P.P. 1835-41, XX), p.99.
- 68 "At the old part of the works [1789] two ten horse water wheels, but the water being irregular, I have a twelve horse engine to assist when the water fails, so that there is no time lost from its irregularity." Ralph Sidebottom of Tintwistle and Hollingworth, *Factories Inquiry Commission, Supplementary Report, Part II Lancashire District* (P.P. 1834, XX), p.87. A recent survey of Torr Vale Mill in New Mills found physical evidence that the water wheel and steam engine (both of which have been removed) were coupled. (M. Williams, pers. comm.).
- 69 *M.M.*, 13 and 20 February 1781. Mantoux, *Industrial Revolution*, p.252. Glover, *History*, p.214.
- 70 Chapman, *Factory Masters*, p.77.
- 71 Butterworth, *Oldham*, p.128.
- 72 Glover, *History*, pp.215-6.
- 73 Copies are in the D.R.O. and New Mills Town Hall. See also R. Weston, *The New Mills Tithe Award 1841* (New Mills, 1985), a transcription of the award and a redrawn copy of the map for the central part of New Mills. Ordnance Survey 25 inch map, first edition, 1880, (surveyed 1872-79).
- 74 *S.A.*, 23 September 1832.
- 75 *S.A.*, 3 December 1858.
- 76 Pigot, *Directory of Derbyshire* (1828) p.89.
- 77 E. Miller, *The Lost Mills of Rowarth* (New Mills, 1984), p.2.
- 78 *Ibid.* p.3.