

The Lancashire Cotton Industry

A Study in Economic Development

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BY

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P R E F A C E .

THIS essay is intended chiefly as a description and explanation of the typical forms that have appeared from time to time in the production of commodities, the marketing of commodities and the distribution of income, in the Lancashire Cotton industry. It is, therefore, far from being complete as a history or even as an account of the Cotton industry. As a rule I have omitted events which do not bear closely on the industry's internal development, however interesting they might be from the point of view of economic history broadly conceived. Questions connected with the magnitude of the industry and its successes in competing with rivals lay outside the scope of my enquiry though they border upon it. As to foreign trade I have been concerned only with the manner in which it is conducted and the links by which the demand for Lancashire goods abroad is connected with the mill and the factory. My work in short might be taken fundamentally as some notes for an industrial morphology. On the whole I have taken for granted, neither describing nor analysing, the environment and the changes in environment of the Lancashire Cotton industry—for instance those determining its size—whereby some of the developments herein described have been conditioned. Had my study been made comparative it would have been improved, but its appearance would have been indefinitely delayed.

In certain chapters much is said of the opinions held by those who share in the earnings of the Cotton industry. Such opinions, as to the natures and grounds of wages, profits and control, have played some part in settling industrial forms, the actual sharing of wealth, and the quantity of wealth produced. They have varied with the character of the industry and the general lines of social advance. It has been a striking feature in the history of the Cotton industry that the classes of labour (employers and employed) which unite in producing have frequently acted under the influence of different guiding notions as to their relations to one another, and the grounds for their several shares, and have been brought on several occasions to a deadlock in consequence. I have tried to indicate the general outlines of these guiding notions—the fundamental claims of labour and capital as we might say—which are universally operative though seldom explicitly stated, and to explain their variations. A fundamental aim must be distinguished from the proximate ends which are adopted in consequence of its existence.

In the course of my investigations I have been impressed with the close dependence of the forms of distribution on the forms of production. Industrial conflicts have been caused by attempts to enforce old distributive arrangements after they have been rendered inappropriate by changes in productive forms. The problem of distribution ought to be studied not only as a whole in general, but also in connection with typical industries in particular, for the forms of production are not the same throughout the industrial world and they change at different times. The so-called 'labour problem' is complex, like the conditions of industrial life which give rise to it, and its variations are at least as numerous as the types of

organised industry. Its solution is complex, varied and progressive. General statements much the same in character might be made as to the most suitable form of production. The right form is multiform. Private management, joint-stock companies, large and small, labour co-partnership, cooperation, regulated monopolies, to mention only some general forms, have each their respective spheres of operation in an industrial world which was by no means simple in the days of our great-grandparents, and which with the rapid progress of the nineteenth century has become much more complicated. There is another interesting case of dependence of one form upon another to which the reader's attention might be specially directed, namely, the mutual determination exercised between the state of industrial organisation and the conditions of marketing.

My obligations are numerous. Many workers in the Cotton industry—employers, operatives, officials of trade unions and employers' associations, and others connected with the trades in cotton, yarn and cloth—have kindly provided me with information, and I have been privileged to visit numerous mills and weaving-sheds. More than once Professor Marshall has aided me with counsel and criticism. Portions of the work have been read by Dr. Cannan, Mr. Elijah Helm and Mr. H. Verney, and I have profited from their suggestions. Mr. W. G. S. Adams has been good enough to read for me almost the whole of the proofs. Miss M. Vernon gave me some help in preparing the manuscript for press, and my wife has worked with me in revising the manuscript, preparing tables, correcting proofs, and in all that is involved in bringing out a book. To all who have thus assisted me I hereby offer my hearty thanks, and I have

PREFACE

also to express my acknowledgements to the Editors of the *Economic Journal* and the Council of the Manchester Statistical Society for permission to re-print papers which have appeared in that journal and in the transactions of that society.

The researches of which this essay is the result were begun six years ago when I was elected to the Jevons Research Studentship at the Owens College, and two years later my work in an unfinished form was awarded the Adam Smith Prize in the University of Cambridge.

S. J. CHAPMAN.

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*The
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CHAPTER I.

EARLY FORMS.

It has generally been supposed that the cotton industry was established in Lancashire by the refugees who were driven to this country from the Spanish Netherlands during the troubles and persecutions of the second half of the sixteenth century, and certainly Flemish weavers did settle at that time in and about Manchester, but no decisive proof has been forthcoming that the cotton industry here was originated by them. Once the industry had started in Lancashire, however, there were special reasons for it to develop rapidly. In the first place, an organisation existed for providing material and disposing of the finished product in the arrangements by which the ancient trade of Lancashire in linens and woollens had been carried on. In the second place, the new art was no doubt free, to a great extent, from the restrictions which limited the long-established trades; and Manchester, being only a market town governed by constables, was not under the dominion of the regulations, common in corporations, by which freemen were favoured to the detriment of strangers. Moreover, the wardens and fellows of the Manchester College, according to Baines,¹ wisely encouraged the settlement of foreign clothiers in the town, by granting them permission to cut firing and timber for their looms from the woods of the college for the small annual payment of fourpence. In view of such facts, it is not astonishing that the cotton industry, even if it were not founded until the end of the sixteenth century, was by 1641 so firmly established as to be

1. *History of the Cotton Manufacture*, p. 99.

mentioned by Lewes Roberts in his *Treasure of Traffic* as that for which the people of Manchester should be "remembered, and worthily and for their industry commended," together with the manufacture, for the Irish, of linen out of Irish yarn.¹

About the year 1650 the trade of Manchester is said to have consisted chiefly in "woollen frizes, fustians, sack-cloths, mingled stuffs, caps, inkles, tapes, points, etc.,"² but early in the eighteenth century at latest the production of cotton goods began to usurp the first place. Daniel Defoe in 1727 observed that "the grand manufacture which has so much raised this town is that of cotton in all its varieties,"³ and by "cotton" he meant, in this case, cotton proper,⁴ and not those coarse woollens which, under the name of "cottons,"⁵ had won for themselves a reputation many years before. Yet the woollen industry continued to be of importance—about 1750 Postlethwaite ascribed the fatness of the eels in the Irk to the grease and oils from the woollen cloths milled in it⁶—and it was not until the period 1770—1788, according to Radcliffe, that "cotton, cotton, cotton, was become the almost universal material for employment."⁷ Radcliffe's statement is corroborated by Edwin Butterworth, who recorded that about 1780 many woollen weavers migrated from Oldham and its vicinity to Bradford, in Wiltshire, because the industry with which they were connected had been driven almost entirely away from the former district by

1. Original Edition, pp. 32, 33.

2. *A description of the towns of Manchester and Salford, 1650* (quoted from Aikin, p. 154). See also Fuller's *Worthies of England* (published in 1662), vol. i. pp. 537-8, Ed. 1811.

3. *Tour*, vol. iii. p. 219 (quoted from Baines, p. 107).

4. *Ibid.*, vol. iii. p. 221.

5. The term "cottons" was in all probability applied to these goods because they were made to imitate or rival foreign cotton fustians and heavy goods.

6. *Dictionary of Trade and Commerce*, vol. ii. p. 10.

7. *Origin of the new system of manufacturing*, by William Radcliffe, 1827, p. 61. The cotton wool annually imported up to 1767 was not more than 200,000 lbs. on an average. The annual average amounts afterwards were as follows: from 1771 to 1776, 4,414,000 lbs. from 1781 to 1787, 16,232,000 lbs.; and from 1788 to 1792, 28,832,000 lbs.

the spread of the cotton manufacture.¹ When Defoe made his tour (1727), the town of Bury lay just beyond the boundaries of the cotton country, and was devoted chiefly to the manufacture of coarse woollens.² By 1774 as many as 30,000 people about Manchester were engaged in the cotton manufacture.³

It would be a mistake to suppose that in the conduct of the cotton trade in early days any one simple method of dividing work and responsibility was pursued. The various arrangements that were adopted we shall consider now in some detail together with the first changes that took place and the causes that led to the changes. Divers systems we should naturally expect to find, for they existed side by side in the woollen and linen trades both about the time when the cotton industry was brought to Lancashire and afterwards. In the woollen and linen trades there were weavers who were engaged to make up in their own homes materials supplied by the undertakers; there were self-employed weavers using their own materials, which might have been bought on a system of long credit;⁴ and there were journeymen working for men

1. *History of Oldham*, p. 126.

2. *Tour*, vol. iii. Part I. p. 221.

3. Bryan Edwards' *History, Civil and Commercial, of the British Colonies in the West Indies*, 4th Ed., 1807, vol. i. Bk. II., ch. 5. In 1766 a law had been passed known as the "free port law" throwing open to foreign vessels the ports of Jamaica and Dominica. This law would have expired in 1774 but when evidence was given that cotton had been purchased in consequence through Jamaica at least 30 per cent cheaper than that obtained through France, and further that 30,000 people about Manchester were engaged in the manufacture of cotton, the Government decided to renew the Act, and it was afterwards made perpetual.

4. The statute 33 Henry VIII. c. 15, for removing from Manchester the privilege of sanctuary reads: "Whereas, the saide towne of Manchester is and hath of long tyme been a towne well inhabited, and the King's subjectes inhabitantes of the saide towne are well set a worke in makinge of clothes, as well of lynnne as of woollen, whereby the inhabitantes of the saide towne haue obteyned gotten and come unto riches and welthy lyuings and haue kepte and set manye artificers and poore folkes to worke within the said towne, and by reason of the great occupieng good order strayte and true dealing of the inhabitantes of the said towne, manye strangers, as wel of Ireland as of other places within this realme, haue resorted to the saide towne with lynnne yarne, woolles, and other necessary wares for makinge of clothes, to be solde there, and haue used to credit & truste the poore inhabitantes of the same towne, which were not able and had not redy money to paye in hande for the saide yarnes woolles and wares vnto such time the saide credites with their industry labour and peynes myght make clothes of the said wolles yarns and other necessary wares, and solde the same, to contente and paye their creditours, wherein hath consisted much of the common weith of the said towne, and many poore folkes had lyuynge, and children and seruants there vertuously brought up in honest and true labour out of all ydleness." (Quoted from Baines, p. 92.)

like Martin Brian (or Byrom) of Manchester, one of the three famous clothiers of the "North Country," who about the year 1520 kept "a greate number of servants at worke, Spinners, Carders, Weavers, Fullers, Dyers and Shearmen, etc., to the great admiration of all that came into their houses to beehould them."¹

In the cotton trade, on the commercial side, the most prominent functionary was the Manchester merchant. Local dealers in addition were to be found in the villages of Lancashire; but the bulk of the trade, we should conjecture, was conducted directly or indirectly through Manchester. It was customary for the merchants to obtain cloth from the weavers in the grey and then arrange on their own account for its dyeing and finishing to suit the needs of their customers. Customers were approached in a variety of ways. Much business was done with export houses or wholesale haberdashers in London, Bristol, Liverpool, Hull, Norwich and Newcastle; but sometimes these merchant houses bought direct from the local markets in Lancashire, for instance, that at Bolton, and so saved the cost of the Manchester middleman. Many merchants carried their goods to the fairs or hawked them about the country on pack-horses from shopkeeper to shopkeeper, and stored what was not immediately sold in the village inns. When trade expanded the Manchester merchants kept gangs of pack-horses. On their return journeys they carried sheep's wool which had been collected from the countryside for the use of the manufacturers of worsted yarn at Manchester or the clothiers of Rochdale, Saddleworth or the West Riding. After the much-needed improvement in roads, waggons took the place of pack-horses, and to push trade more vigorously "riders out" with patterns only were sent throughout the

1. *Mancuniensis*, p. 28 (Ed. of 1839). Hollingworth died in 1656.

country. In this way the Manchester trade was greatly extended in the period 1730—70.¹

Aiken quotes the following communication from "an accurate and well-informed inquirer" (probably James Ogden),² but no authorities are given for his statement. "The trade of Manchester may be divided into four periods. The first is that, when the manufacturers worked hard merely for a livelihood, without having accumulated any capital. The second is that, when they had begun to acquire little fortunes, but worked as hard, and lived in as plain a manner as before, increasing their fortunes as well by economy as by moderate gains. The third is that, when luxury began to appear, and trade was pushed by sending out riders for orders to every market town in the kingdom. The fourth is the period in which expense and luxury had made a great progress, and was supported by a trade extended by means of riders and factors through every part of Europe."³ The second period, "the accurate and well-informed inquirer" thought, began about 1690, the third about 1730 and the fourth about 1770. From about 1770, Aiken added, trade began to be pushed in foreign parts; Manchester manufacturers travelled abroad and many houses maintained agents or partners who resided continuously on the Continent.⁴

It was not the business men of Manchester, however, who founded the foreign trade in English cottons, although they began the trade direct from Manchester. In the first half of the seventeenth century "Fustians, Vermillions, Dymities and other such Stuffles" (all made of cotton) were sent from Manchester to London, "where the same" were "vented and sold, and not seldom sent

1. On all the above see Aikin, pp. 182-4. "Riders out" are referred to in *Letters on the dispute between the check-makers and their weavers, 1759*.
 2. See Bibliography.
 3. pp. 181-2.
 4. p. 184.

into forrain parts.”¹ Later there was a marked tendency for foreigners to settle in Manchester and thence direct the export trade to the countries from which they had come and to other markets with which they were acquainted. At first the settlement of these foreign merchants in Manchester was viewed by many with jealousy; but to the efficiency of the early shippers of Manchester the rapid extension of our cotton industry must be attributed. The causes of foreign distributors pushing their base as far back as Lancashire were as follows: the growth of the cotton trade which enabled merchants to specialise and sell cotton goods only; the pre-eminence of Lancashire manufacturing; the greater ease with which distribution abroad could be directed by people intimate with one foreign market at least and somewhat acquainted with others; the saving effected by cutting out a link from the chain of intermediaries that lay between the producer and the user of the goods; and the enterprise and adaptability of foreign merchants. The alien immigrant may add to the wealth of the country of his adoption not only by bringing with him a new trade but also through serving as a connection with a new market.

In early days, no doubt, many of the Manchester merchants manufactured for themselves with the assistance of journeymen. They also took apprentices; an indenture of 1659 mentions a premium of £60 and seven years' service. In the reign of George I. even country gentlemen began to bind their sons to the Manchester trade, sometimes after first sending them for two or three years to a weaver to receive technical instruction, and as the business had improved greatly premiums rose to £250

1. Lewes Roberts, *The Treasure of Traffic*, Original Edition (1641), pp. 32-3. See also Stukeley's *Itinerarium Curiosum* (1724), p. 55; and Ogden, p. 79.

and £300 and even higher. Country gentlemen were still placing their sons in the Manchester trade in 1800, when the common premium was £500, according to Radcliffe, and three or four apprentices would be taken by each firm of repute.¹ After the plan of the merchants giving out warps to the weavers had been generally adopted the merchants dwelt in houses “of four or five or six rooms of a floor, with warehouses under, and warping rooms over.”² Previously they had lived in a humbler fashion, but improvements began to be noticeable in their dwellings by the beginning of the eighteenth century.³ In 1795 a correspondent of Arthur Young wrote that about 1710 “the Manchester trade had long flourished so much that the master-manufacturers, instead of their old wooden dwellings, composed of raddlings and daub, had begun to build handsome brick houses, with palisadoes, pillars and other decorations.”⁴ Aikin has some further information of interest to give about the Manchester merchants or manufacturers of the period when a modest magnificence was becoming generally attainable. From a manufacturer's private expense book he quotes entries, under dates from 1700 to 1702, to show that the writer had a warehouse in London, that he paid £40 a year rent for his house (possibly with a warehouse attached), that he lived a life of some elegance and that he could afford journeys by private coach.⁵

The Manchester merchants, of credit and renown even in the seventeenth century, were not, as we have already noticed, the only middlemen in the trade, although unquestionably the largest and wealthiest dealers were to

1. On all the above see Aikin, pp. 181-4; Radcliffe, pp. 107-8 note.

2. *Letters on the dispute between the Manchester check-makers and their weavers*, 1759.

3. Aikin, p. 182.

4. *Annals of Agriculture*, xxv., pp. 299-300.

5. Aikin, pp. 185-6.

be met with in their ranks. Early in the sixteenth century Bolton was a market town of repute,¹ and in the middle of the eighteenth century it was one of the principal marts of the cotton trade, where the weavers of the district offered their goods to the merchants. French's description of Bolton in 1753, for which, however, he gives no authority, is too interesting to be omitted. "The neighbourhood of the town," he says, "was thickly studded with groups of cottages, in hamlets or folds as they are there called, many of which have since been surrounded by new houses, and now form part of the town itself. There were no tall chimneys in Bolton in those days, but many considerable warehouses to contain the heavy fustians and other piece goods made in the neighbourhood. . . . A weekly market was then, as now, held on the Monday, at which a large amount of business was transacted with merchants from London and Manchester, who frequented it to purchase the heavy fabrics for which Bolton was then the principal mart."² To this market came also merchants from Ireland selling linen for warps,³ for at that time the bulk of our linen yarn was obtained from Ireland and Germany.⁴ At Oldham also, about the beginning of the eighteenth century, there resided many small dealers, who traded in the cotton and woollen goods manufactured in the district, and were known as "chapmen," a term which seems to have been used then of merchants whose business was not extensive.⁵ One would judge from Butterworth's account of the parish of Oldham that specialisation in the cotton-linen manufacture had become pronounced in the first half of the eighteenth

1. Quotation from Leland in Baines, p. 91.

2. *Life of Crompton*, p. 4.

3. *Ibid.*, p. 4.

4. *Letters on the Utility of Machines*, 1780, p. 15.

5. Butterworth, *History of Oldham*, p. 95.

century, for at that time numbers of "master manufacturers" described themselves as of the cotton-linen trade.¹

In the Lancashire cotton industry in its earliest form no rigid line of demarcation could be drawn between the various grades of workers. It may be inferred from the facts before us that there were large dealers who did not engage in manufacturing, while at the same time there were manufacturers who dealt in the goods of others as well as in their own. There were weavers on their own account, employing nobody and selling to the local dealers or the Manchester merchants; there were also journeymen working for master weavers. It was with one of the well-to-do weavers that John Bright's father began his business life. "About the time when the cotton trade was, as it were, in its infancy in this country, he was apprenticed to a most worthy man who had a few acres of ground, a very small farm, and three or four looms in his house. . . . About the year 1796 he was free of his apprenticeship. . . . He found employment at his business as a weaver, and he was able to earn 6s. a week."² The state of affairs in the country, described in the above passage, was much the same as that observed by Defoe in the woollen district between Blackstone Edge and Halifax some three-quarters of a century before.³

The association of small farming with manufacturing was common. Radcliffe, writing of the industrial conditions in 1770, says that the "land in our township (Mellor) was occupied by between 50 and 60 farmers . . . and out of these 50 or 60 farmers there were only 6 or 7 who raised their rents directly from the produce of their farms; all the rest got their rent partly in some branch of trade,

1. p. 101. Butterworth gives a list of the chief manufacturers.

2. From a speech of John Bright's reported in the *Beehive*, Feb. 2nd, 1867 (Quoted from Webb MSS., Textiles).

3. *Tour* (1727), vol. iii. Part I. pp. 97-101.

such as spinning and weaving woollen, linen or cotton. The cottagers were employed entirely in this matter, except for a few weeks in the harvest."¹ At the time when Radcliffe wrote, and before, there were many small farmer weavers, many weavers whose farms were more of the nature of allotments, and others who hired themselves out as journeymen or harvested as occasion arose,² while in addition there were numbers of men who did nothing but cast the shuttle. From Radcliffe's time onward the last-mentioned class was increasing at the expense of the former, for reasons which are not far to seek. Outdoor employment by roughening the hands of the weavers reduced their skill; considerable waste was involved in allowing an expensive machine to stand idle; and an awakening and diffused spirit of enterprise brought about the invention of more complex appliances and the need of specialism on the part of the workers. Further, an enlarged demand for weavers followed the introduction of the jenny and the expansion of trade under the indefatigable marketing of the Manchester merchants; while a depression in small farming, accompanied by a displacement of much casual farm labour, as a result of such improvements as steam threshing, appeared simultaneously. Lastly, when some kinds of looms became so complicated as to need for their construction or repair the labour of the smith or of trained mechanics, many weavers found themselves almost compelled to leave the countryside for the large villages and towns.³

The evidence for the early association of agricultural occupations and weaving is overwhelming, though no doubt it is the former and not the latter which should be

1. p. 59.

2. Rules of the small-ware weavers. Tramping weavers, mostly Irish, were common later.

3. John Kennedy, *Rise and Progress of the Cotton Trade*. Even to the last some weavers would make the whole of their looms except the reeds, healds and shuttle.

regarded as the by-employment in most cases. Such association we should naturally expect to find, for, according to Defoe, it was common among the clothiers engaged in the woollen industry. Edwin Butterworth, a most painstaking investigator and full of information as to eighteenth century customs in Lancashire, in speaking of the cotton-linen fustian manufacture, asserted that in the parish of Oldham were "a number of master manufacturers, as well as many weavers who worked for manufacturers, and at the same time were holders of land or farmers." "The number of fustian farmers," he said, "who were cottagers working for manufacturers, without holding land, were few; but there were a considerable number of weavers who worked on their own account, and held at the same time small pieces of land."¹ Even at the end of the first quarter of the nineteenth century the connection between the occupations of agriculture and weaving was still common. The Committee on Emigration of 1826-7 reported that in many districts, "and more especially in Lancashire, there appear to be among the hand-loom weavers two classes almost wholly distinct from each other; the one, who, though they take in work in their own houses or cellars, are congregated in the large manufacturing towns; and the other, scattered in small hamlets or single houses, in various directions throughout the manufacturing county. . . . It appears that persons of this description, for many years past, have been occupiers of small farms of a few acres, which they have held at high rents; and combining the business of a hand-loom weaver with that of a working farmer, have assisted to raise the rent of their land from the profits of their loom."² There is no reason to suppose that the

1. *History of Oldham*, p. 101. On this custom see also French's *Life of Crompton* pp. 4, 5, and 9.

2. Reports, etc., 1826-7, v. p. 5. Statements of the existence of this state of affairs can be found in Parliamentary papers, e.g., Gardner's evidence given before the Committee on Hand-Loom Weavers in 1835.

description in this passage of the source of the rents paid for small holdings is incorrect. A landowner would require a higher rent per acre for land divided up into small parcels than for that let in large farms, because of the greater trouble involved in managing the former; and probably no man who farmed only a few acres could have made enough for his subsistence and for this rent from his farm alone.

Many hand-loom weavers in the eighteenth century were independent men of business. They worked for local dealers, or dealt with private families,¹ or sold their cloth on market days in the markets of the district. Many journeyed to Manchester with their cloth, and such of them as worked on their own account bought there cotton and linen for warps.² Spinning and the preliminary processes of cleaning, carding and roving, were conducted in early times by the women and children in most families of the hand-working classes in Lancashire; and as the spinners in country parts assisted to gather in the harvest it was not easy at all times to procure a sufficiency of yarn, whether of wool, linen or cotton. For this reason the Society of Arts offered prizes in 1761 for the best machines capable of spinning six threads at once.³

Let us now examine briefly the actual process of manufacture in its simplest form. The linen yarn for the longitudinal threads of the cloth was warped by the weaver himself on pegs fixed in a wall.⁴ The cotton wool was cleaned, carded and spun, at home by women and children; although roughly "ginned" before being

1. Known as "Customer Weavers" in Scotland. They were for the most part agricultural labourers. (Reports, etc., 1839, xlii. p. 519.)

2. On the above see Butterworth, *History of Oldham*, p. 101; and French, *Life of Crompton*, pp. 4, 5.

3. Printed minutes of Society of Arts, 1762-3, p. 112 (quoted from French's *Life of Crompton*, pp. 92-3, 3rd Ed.). A prize was awarded to George Buckley. French conjectures that Lewis Paul did not claim the reward because his machine did not spin many threads at one time (pp. 146-7 note, 1st Edition).

4. Guest, p. 7. An illustration of peg-warping is given (Plate 2).

sent to this country, it had to undergo here an additional cleaning. For ordinary purposes the complete cleaning process consisted merely in the beating of the cotton with willow switches after it had been laid out on a tight hammock of cords—hence the term "willowing." For fine spinning the cotton was in addition carefully washed; and, if not washed in other cases, it appears to have been drenched and partially dried to make the fibres cling.¹ French quotes a vivid description of the operation of washing the wool by George, the eldest son of Samuel Crompton, who was born on January 8th, 1781. "I recollect," he wrote, "that soon after I was able to walk I was employed in the cotton manufacture. My mother used to bat the cotton wool in a wire riddle. It was then put into a deep brown mug with a strong ley of soap and suds. My mother then tucked up my petticoats about my waist, and put me into the tub to tread upon the cotton at the bottom. When a second riddleful was batted I was lifted out, it was placed in the mug, and I again trod it down. This process was continued till the mug became so full that I could no longer safely stand in it, when a chair was placed beside it, and I held on by the back. When the mug was quite full the soapsuds were poured off, and each separate dollop (*i.e.*, lump) of wool well squeezed to free it from moisture. They were then placed on the bread-rack under the beams of the kitchen loft to dry. My mother and my grandmother carded the cotton wool by hand, taking one of the dollops at a time, on the simple hand cards. When carded they were put aside in separate parcels ready for spinning."² The drying of the cotton sometimes gave rise to accidents.

1. Mr. Andrew's notes to Rowbottom's diary.

2. *Life of Crompton*, pp. 58-9, 3rd Edition. This careful washing and hand-carding after the invention of cylinder carding was no doubt necessary because Crompton's speciality was very fine yarn.

Rowbottom on March 6th, 1788, entered in his diary an account of a fire which had been caused in a neighbour's cottage by his wife imprudently holding a candle under the cotton to hasten its drying. Again on January 14th, 1791, he noticed another accident of the same character. The carding at first consisted in raking the fibres parallel with hand-cards, which were brushes with wire handles;¹ and in weaving the shuttle was originally cast from hand to hand. The early looms were frequently constructed in whole or in large part by the weavers themselves.

Such was the Lancashire cotton industry in its infancy. Its lines of development are roughly of two kinds, industrial and commercial. Businesses, labour and machinery have all specialised, and in most cases specialisation has been conditioned by commercial developments. The parts into which the industry has divided have localised separately, under the influence of their several climatic and other requirements, and formed groups with the parts of other industries and other parts of the same industry. The first change was the increasing dependence of the weavers upon the merchants. The system under which some of the former had bought warps and cotton in the open market gave place generally to an arrangement by which they received materials instead from the merchant and were paid no longer for their own goods, which they had made themselves out of their own materials, but for the operations of making them, that is for carding, roving, spinning and weaving. Guest says that the change took place about 1740,² but as Aikin³ refers to the use of warping mills in the seventeenth century it would be a mistake to attach

1. An account of development in the process of carding will be found at the end of chapter iv.

2. p. 8.

3. pp 1s2-3.

much importance to the date mentioned by Guest. And it will not be supposed, of course, after what has been already said, that any one uniform system preceded this change; at most it was such a change as could be observed only in the general character of the industry. All that we can assert with confidence is that somewhere about the beginning of the eighteenth century a strong centralising tendency revealed itself and that it was assisted by the economies associated with centralised warping after the invention of the warping-mill. It did not pay the individual weaver to keep a warping-mill for occasional use only, and frequently the contracted space of his workroom precluded even the possibility of his doing so. The invention of the warping-mill necessitated specialism in warping, and it was essential that warping should be done to order, since at that time, the state of the industrial world being what it was, no person could ordinarily have been found to adventure capital in producing warps ready-made in anticipation of demand for the great variety of fabrics which was even then produced. Moreover, had the weaver himself placed the orders for his warps, any occasional delay in the execution of his commissions might have stopped his work entirely until the warps were ready; for warps cannot be delivered partially, like weft. In quantities sufficient for each day's work. To ensure continuous working in the industry, therefore, it was almost inevitable that the merchant should himself prepare the warps for such fabrics as he required, or possibly have them prepared. To the system of the merchant delegating the preparation of warps there was less objection than to the system of the weaver doing so, since the merchant dealing in large quantities was more likely to get pressing orders completed to time. Further the merchant knew

first what kind of warps would be needed. The first solution, however, that of the merchant undertaking the warping himself, was the surer, and there was no doubt as to its being the one destined for selection in a period when a tendency to centralise organisation, responsibility and all that could be easily centralised, was steadily gaining in strength.

When the new organisation had become comparatively usual the merchants began to employ persons on commission in the various villages to put out material.¹ Shortly after (about the middle of the eighteenth century) this step in the direction of the capitalistic organisation of industry is said by Aikin to have given rise to the appearance of a new class of men, the fustian masters, or, more generally, piece-masters, who resided on the spot among the weavers whom they employed. Local dealers, however, existed before 1750; and after 1750, although it was usual for the country weaver to do business directly with a local master, who filled the office of middleman between the craftsman and the large Manchester merchants, many of the latter conducted their transactions with the weavers through agents. According to Aikin,² before it became the rule for the dealer to give out warps, he had begun to provide the weaver with weft in cops; but, as our authority says, "the custom grew into disuse, as there was no detecting the knavery of spinners till a piece came in woven." Bad work might have been attributable to defects in weaving, cleaning, carding or spinning; and as the yarn could not be completely unwound and tested, the best results were obtained by saddling the weaver with responsibility for all the operations. However, inasmuch as machine-carding

1. Aikin, p. 158.

2. p. 167.

and machine-spinning introduced greater uniformity among yarns purporting to be the same, in course of time the provision of weft by the master was again resorted to, and it soon became the universal custom since the undertaker thereby acquired a more perfect control over the quality of his goods.

CHAPTER II.

THE COMING OF THE FACTORY SYSTEM IN WEAVING.

IN weaving two factory systems are to be distinguished. The one was caused by the need of water or steam for driving heavy machinery. The other was caused by the increasing complexity of machinery, which magnified its cost and threw the operative into a state of dependence on some wealthier person for its provision; and by the increasing complexity of business (the outcome on the one side of constant additions being made to the variety of cotton goods and the rapid changes that took place in patterns), which augmented greatly the economies to be derived from a thorough-going organisation. With the latter of these factory systems we shall deal first, as, in its initial stages, it preceded the former and to some extent prepared the way for it.

John Kay's invention of the fly-shuttle in 1738 began the modern development of looms.¹ According to the old-fashioned method of weaving the operative threw the shuttle between the warps from hand to hand

1. More than half a century before the invention of the fly-shuttle weaving machine, adapted for working by power, had been contrived by Monsieur de Gennes. A description of it, extracted from the *Journal de Scavans*, appeared in the *Philosophical Transactions* for July and August, 1678 (vols. 10, 11, and 12, pp. 1007-9). A shorter account based upon this, together with the illustrations accompanying it, appeared in the *Gentleman's Magazine* nearly three-quarters of a century later, namely, in 1751 (vol. 21, pp. 391-2). The idea involved was very primitive. It consisted in two metal arms alternately shooting through the warp, one from each side, and on each occasion exchanging the shuttle which fitted into the end of the arm. The arrangement for exchanging the shuttle was roughly as follows. There was a hole at the end of the arm and within the hole the shuttle was held by a catch or clasp; but when the arm was at full stretch (*i.e.*, when it was stretched enough to meet the other arm) the clasp was unfastened by a mechanical contrivance. The arm then drew back, leaving the shuttle clasped in the end of the other arm in the same way. The second arm then moved through the warp. I have found no further reference to this weaving-machine, and I can scarcely believe that it was ever used. Also in the seventeenth century a John Barkstead was granted a patent for a method of manufacturing cotton goods, but the method is not described (1691, specification 276). *

along the grooved plane known as the lathe. In Kay's contrivance the shuttle was propelled by hammers placed at the ends of the lathe, which was lengthened for the purpose, and motion was given to the hammers by the weaver jerking a handle, known as the "picking-peg,"¹ to which they were attached by threads. As the result of this invention the operative was enabled not only to weave more rapidly but to make by himself without assistance the broader cloths, which had previously required two men for their production inasmuch as their width was greater than the stretch of a man's arms. The fly-shuttle, however, was not applied much in the cotton industry before 1760,² the year in which John Kay's son Robert invented the drop-box, by which the weaver could at will use shuttles containing different coloured threads without making the substitution of one shuttle for another directly by hand. The drop-box was, in fact, a partitioned lift, working at the end of the lathe, and so constructed that any partition could be raised or lowered to the same level as the lathe and thus made to form a part of it. When the fly-shuttle and the drop-box were attached, the loom became a somewhat complicated machine, and it was rendered the more complicated by the occasional use of a contrivance for raising and lowering different coloured warps.³

Long before 1760, a highly intricate machine known as the swivel-loom had been introduced for the weaving of many narrow pieces at once. In 1724 Stukeley in his *Itinerarium Curiosum* wrote of the people of Manchester that "they have looms that work 24 laces at a time, which

1. *i.e.*, throwing-peg.
2. Guest, p. 9. The statement is based on a manuscript lent to Guest by Samuel, the son of Robert Kay (Guest, p. 30).
3. The "Diaw-boy," see p. 22.

was stolen from the Dutch."¹ These were the swivel-loom. Ogden agrees that the invention came to us from the Dutch, even if it did not originate in Holland. "It was found," he says, "that the Dutch enjoyed the manufacture of fine Holland tapes unrivalled; plans were therefore procured, and ingenious mechanics invited over to construct swivel engines at a great expense, but adapted to the light work for which they were first intended, on so true a principle that they have been employed in most branches of small-wares with success."² Ogden in this case was referring to events which presumably happened at least sixty years before he wrote, and he gave no authorities, but documentary evidence of an earlier date than Ogden's book can be found to support the conjectures that the idea of swivel-loom came to us from Holland and that they were largely employed even in the first half of the eighteenth century. As we have noticed above, Stukeley refers to looms of Dutch design being worked in Manchester for weaving 24 laces at once, and in their rules dated 1756 the Manchester small-ware weavers spoke of the masters having acquired by the use of "engine or Dutch looms" (unquestionably swivel-loom) "such large and opulent fortunes as hath enabled them to vie with some of the best gentlemen of the county," and declared that these machines, which wove twelve or fourteen pieces at once, had been in operation in Manchester "thirty years ago." Nothing but a simple circular motion was required to keep the swivel-loom at work; hence they became the first power-loom. In 1765,

1 In the Parliamentary Reports, 1840, xxiv. p. 611 we read that about the middle of the eighteenth century the swivel-loom was invented by Van Anson—by "Van Anson" is possibly meant Vaucanson, who appears to have improved the swivel-loom. Vaucanson, however, could not have been the original inventor, since in 1724 (that is, when Vaucanson was at most fifteen years of age) they were being used in Manchester.

2. Ogden, p. 82. From this account it is obvious that the swivel-loom belonged to the masters, at any rate at first. They must have hired them out to the weavers, or engaged weavers to work them in sheds under the control of their employers.

we are told, a Mr. Gartside, of Manchester, filled a factory with them and used water as the motive power; but he failed to make the enterprise succeed, since each loom, on account of its intricacies and imperfections, required the unremitting supervision of one skilled workman.¹

An explanation of the mechanism of the swivel-loom, with numerous diagrams, will be found in the *Encyclopédie Méthodique*.² Its most significant feature was the dragging, or pushing, of the shuttles through the warp by the action of cog-wheels. Each shuttle had necessarily to be greater in length than the width of the ribbon which was being woven. A cog-wheel working on the teathed top of the shuttle set it moving through the warp, and when the nose of the shuttle appeared at the other side of the warp it was caught by a second stationary cog-wheel the revolution of which dragged it completely clear of the warp. Reversing the motion of the cog-wheels returned the shuttle after the several threads of the warp had been transposed, up and down, in the usual way. This cog-wheel arrangement was altogether unsuitable for the production of wider fabrics, since throwing a small shuttle occupied far less time than would have been required to grind a four-foot shuttle through a three-foot width of warp. The swivel-loom was economical for tapes and narrow tissues because a great number of pieces could be woven by it at once. Ultimately the principle of the fly-shuttle displaced that of cog-wheels on the ribbon-machines; hence the author of a *History of the Cotton Trade* (1823) in describing the ribbon-machine says "the shuttles are, of course, fly-shuttles." Indeed it was as easy to set in motion with the picking-peg twenty or more hammers as two. The hammers formed the vertical cross-

1. Aikin, p. 175-6; Guest, p. 44.

2. *Manufactures, Arts et Métiers*, Pt. I., vol. ii. pp. ccciv-cviii., and *Recueil de Planches*, vol. vi. (1786), pp. 72-8.

bars of a frame like a ladder, and known as "the ladder," which slid horizontally between two grooves.

We have referred above to an arrangement for raising warps in groups in such a way that figured goods could be produced. This was the "draw-boy" or "draught-boy," so called because a boy was usually engaged to work it. As early as 1687 an attempt was made to escape the expense of the assistant by the contrivance patented by one Joseph Mason,¹ but whether it worked satisfactorily, or was much used, cannot be said. In later years looms with draw-boys affixed, which in some cases could be controlled by the weavers themselves, became common. They were known as "harness looms," and Paisley alone contained 5,000 of them by the early "forties."² Almost all of those at Paisley were worked by assistants of ages varying from 6 to 18. The figured goods produced on harness-looms (which are now supplanted by Jacquard looms) were also known as "draw-boys," and they became so popular "that the utmost encouragement was given to ingenious weavers, and looms mounted for them at a great expense, which the employers advanced."³ Many weavers, naturally, could neither set up their own draw-boy arrangements, nor afford to pay others to do so. Nor could they afford to provide all the needful appliances when it became necessary for each weaver to undertake many varieties of work and repeatedly re-adapt his loom by changing certain parts of it. Hence many masters undertook to provide reeds (which had to vary in fineness with the fineness of the warp), healds and other changeable parts of looms,⁴ and sometimes to employ gaiters to put new work in the looms.

1. Specification 257.

2. Reports, etc., 1843, xiii. p. 347.

3. Ogden, p. 77. In 1839, of the 51,000 hand-loom weavers in Scotland south of the Forth and Clyde 11,500 were harness weavers (Reports, etc., 1839, xiii. p. 518). Figured goods were not for a long time taken over by power looms.

4. Reports, etc., 1802-3, viii., 991; 1808, ii. p. 109.

Ordinarily weavers gaited themselves and sometimes they employed gaiters.¹ Ultimately jacquard-looms took the place of harness-looms. The fundamental idea of the jacquard-loom is the same as that of some automatic musical instruments; by a system of perforated cards the power is directed to the warps that require raising from time to time. Recently a new idea of electrical indicators has been put forward.

Thus the development of mechanical appliances was by slow degrees creating conditions favourable to the capitalistic organisation of industry—conditions such as the existence of expensive machinery, the segregation of labour, and that specialisation which renders labour helpless unless organised in a system by which it is effectively combined with other productive factors.²

Some master weavers had of course employed journeymen from the earliest times; and therein lay the germs of a factory system. A hundred years ago the weaver owning from four to six looms, which he worked with the assistance of one or two apprentices and one, two or three journeymen, was common, and much larger establishments were not unusual. "In the latter part of the last and the beginning of the present century," says Butterworth, describing the state of affairs in Oldham and the neighbourhood, "a large number of weavers . . . possessed spacious loom shops, where they not only employed many

1. *e.g.*, Reports, etc., 1802-3, viii. pp. 949 and 952.

2. The following is a good example, taken from the Scottish Linen Trade, of the centralisation of industrial responsibility under the conditions of the domestic system. *The Gentleman's Magazine* in 1765, describing the formation of a colony of linen weavers at Farres in Scotland, said—"The undertaker Captain Urquhart, has marked out upon the banks of a pleasant river, ground plots for building houses, and making gardens for all linen weavers who shall offer, and gives three-pence a mile for travelling charges, to bring the settlers to his new colony, builds each family a house at his own expense, and furnishes a loom to be paid for in easy proportions" (vol. xxv. p. 533). From 1746 the linen trade in Scotland had been largely financed by the British Linen Company (Cunningham's *English Industry and Commerce*, p. 350). In the linen trade of Scotland a factory system had showed itself in the earliest times. In 1638 a Robert Pleyning and his partners, with the support of the Town Council of Glasgow, turned a great lodging in Drygate, which had once belonged to a prebendary of the cathedral, into a weaving-factory. (James Cleland, *Description of Glasgow*, 2nd Ed., 1840, pp. 37-8.)

journeymen weavers, but a considerable proportion of apprentice children." Many masters both put out warps and arranged for some weaving to be done on their own premises. William Radcliffe, whose work, *The New System of Manufacturing*, will be frequently quoted in these pages, carried on a business of this kind at Stockport. The different classes of weavers noticed above were known by distinct names. A man working on another weaver's loom was a "journeyman," and his master was a "master weaver;" the former received about two-thirds of the price paid to the latter by the manufacturer. A man working in a manufacturer's shed was known as a "factory-weaver" or "shop-weaver." While it would be a mistake to overlook this growing tendency for labour to be engaged on appliances possessed by the employer, it must nevertheless be remembered that to the very last the hand-loom weavers who were self-employed probably formed the majority. Most, the Commissioners reported in 1841, were neither journeymen nor factory weavers; but by that date, no doubt, many who had worked in hand-weaving sheds had drifted into the power-loom factories when the latter displaced the former. The figures given by the Assistant Commissioner for Scotland show that of the hand-loom weavers south of the Forth of Clyde only some 3,500 out of more than 51,000 did their work in factories.

At a time when old social attachments were rapidly dissolving under the influence of the new spirit of enterprise, and before much capital was needed by an employer, it is not astonishing that labour moved with no great difficulty from one grade to another. Operatives easily became masters, especially at a time, to be dealt with more in detail hereafter, when the craftsman's skill was highly remunerated. John Kingan told the Committee on Hand-loom Weavers of 1834 that he could name

forty or fifty people, then living, who from hand-loom weavers had become men of capital and position; that two of those whom he could call to mind had been Provosts of Glasgow.¹ William Radcliffe rose from the ranks and disclaimed any special merit for having done so, on the ground that "any young man who was industrious and careful might then from his earnings as a weaver lay by sufficient to set him up as a manufacturer." In fact so general was it for persons to pass from the one position to the other that the evils which befel the hand-loom weavers were partially attributed by some to the numbers who struggled into the position of small masters and then competed desperately with one another to maintain themselves with insufficient capital. "If a man," said Philip Halliwell to the Committee above referred to, "can purchase a winding machine and a warping mill and get credit for a skip of yarn, he can get into motion as a master. . . . When he has made his cloth he must sell it every week, the same as the weaver must do, or he cannot keep in motion. There is such an immense quantity of work done by men of this description, that I look upon them as hanging as a dead weight upon the whole trade." Many of these small masters would visit the Manchester Exchange three times a week offering goods and soliciting orders and prepared to accept any price rather than be left with a stock or without full work.² Another fact may be mentioned here which is equally illustrative of the dissolution of old customs. There was a time when the independent weaver naturally owned his loom; but at the beginning of the nineteenth century the hiring of looms from those who let lodgings, or others, became so usual as to excite no comment. An article in the rules of the

1. Monteith and Dalgleish.

2. Evidence of Geo. Smith to the Committee on Trade of 1833. See also Reports, etc., 1808, ii pp. 102-3.

Associated Weavers of Scotland (1824) declares that when a journeyman leaves a district he must carry a certificate to his new district stating that he has paid all the demands of his old district and also charges for weft-winding and his loom-rent.

From the foregoing we may conclude that, apart from the conditions which the application of the powers of inanimate nature to machinery created, productive arrangements in the cotton-weaving industry were undergoing striking changes in the form of a further separation of "undertaking" from the actual operation of weaving, and a further centralisation of industrial control and the ownership of appliances. As to the causes in general we have already spoken, and of these one of the chief was an awakening, among certain classes, of economic activity and initiative. The new order in its most developed form meant the factory; and, as we have seen, the "shop-weaver" or "factory-weaver" on the hand-loom was by no means rare at the close of the eighteenth and the beginning of the nineteenth century. But the force of public opinion among the hand-loom weavers as a class was strongly in favour of the domestic system. They objected to fixed hours and anything of the nature of discipline, and the journeyman who worked with a master-weaver in his home enjoyed more freedom than those who joined the factories. The "factory weaver," if not exactly despised, was no doubt regarded as beneath the station of an independent weaver. So, probably, what a factory-master gained over a piece-master through the regularity of his men, and their moderately unbroken application during working hours, he sometimes lost again through not securing the best men, and through a feeling of inferiority and dependence in his workmen preventing them from rendering the best of which they

were capable. Such was the state of affairs, the advantages of factory and cottage as the seat of weaving being fairly balanced, the one proving superior for one class of labour in one range of goods, the other offering greater economies in the case of different qualities of labour or different goods, when the invention appeared, which, in combination with the supplementary contrivances naturally following it, ultimately drew the operatives entirely under the control of the factory-master.

In 1787 the Rev. Edmund Cartwright, brother of the well-known reformer Major Cartwright, solved the problem of so adding to the rapidity of weaving as to exhaust the increasing output of yarn—a problem the converse of that of earlier years, when improved spinning had been needful to relieve the pressure exerted by weavers on those who slowly drew weft from the one-spindle wheel. Ultimately Cartwright's power-loom became an irresistible competitor (although for many years certain fabrics could not be woven by it so well as by hand) for it not only worked faster than the hand-loom, the speed of which was limited by the rate of human movements and human endurance, but also produced a cloth of a more even texture, because of the uniform strength of the blows administered mechanically to the shuttle, a uniformity which no human agent could hope to rival. Indeed power-loom cloth became, in consequence of its evenness, so popular that fabrics made by hand were stamped "power-loom" by dishonest manufacturers.¹ Yet this great invention did not immediately create a revolution. Although the trial of the power-loom commercially began in England almost directly after Cartwright had taken out his last weaving patent in 1787, and although the first small attempts with the new

1. Radcliffe, *Origin of the New System in Manufacturing*, p. 54.

machine were being made in Glasgow in the last few years of the eighteenth century, only 2,400 were at work in the United Kingdom in 1813. By 1820 their numbers were about 14,000; and at that time there were supposed to be some 240,000 hand-looms, a number which increased rather than diminished between 1820 and 1830.¹ It appears to be beyond question that the competition of the power-loom was not very serious prior to 1812 at earliest and in many places not until considerably later. From much evidence given to the Committee and Commissioners on Hand-loom Weavers it would seem that power-looms and hand-looms had each their respective spheres of operation. For the Bolton goods of 1834 the former were not of much value; and in the whole of Bolton, while 7,000 to 8,000 hand-loom weavers carried on their trade, only 733 hands worked on 1,466 power-looms.² In Oldham the effect of the power-looms began to be felt in 1818 or 1820,³ and in 1824 Rowbottom wrote in his diary:—"Factory work is best for a poor family at this time; weaving is very poor. . . . A deal (of tabbies) is wove two in a breadth, and when wove the two pieces are cut up the middle and then the weaver has two pieces to carry home. There are some who weave three in a breadth." The expedient of weaving "splits" more extensively served its purpose only partially and for the shortest space of time: the next year Rowbottom wrote:—"Anything that

1. Reports, etc., 1830, x. pp. 223-4. The following figures shew the increase in the number of power-looms (see Reports, etc., 1840, xxiv. p. 611):—

	England.	Scotland.	Ireland.	Total.
1813	—	—	—	2,400 (Estimated)
1820	12,150	2,000	—	14,150
1829	45,500	10,000	—	55,500
1833	85,009	15,000	—	100,000
1835	97,564	17,721	1,516	116,801

In 1870 the total in the cotton industry was 440,676, and by 1890 it had grown to 615,714. See also the account of the growth in detail given by Baines, pp. 235-7.

2. Reports, etc., 1834, x., Q. 5627, 5058, 5728—30.

3. Annals of Oldham.

can be wove on power-looms is wove at factories, and to the manifest injury of the poor weaver." Yet hand-loom weaving was carried on to an appreciable extent, in some places and in the case of some goods, well into the second half of the nineteenth century. None the less the ultimate triumph of the power-loom was certain long before the "thirties," although at that time it was only just beginning to secure the finest and most delicate work, that is muslins, commonly known at the time as "the white work." After 1835 power-loom weaving increased rapidly; in 1845, on the 26th of November, Leonard Horner reported that in the previous ten years the number of power-looms in his district had more than doubled; in that year there were running in his district 142,950 power-looms, of which 138,720 were used in the cotton industry. Inasmuch as manufacturers had been fully convinced, before power-looms became at all common, that it was to their interest to adopt Watt's steam-engine wherever possible, almost all the first power-looms were driven by steam; hence "steam-looms," the name usually applied to them, and the class of "steam-weavers" who are to be distinguished from "factory-weavers" since the latter might be engaged on hand-looms.

From the foregoing it is evident that the Commissioners on Hand-loom Weavers were not committing themselves without good reasons when they made the statement that "mechanical improvements . . . such as the mule and the power-loom are of slow introduction."

At first sight it must excite surprise that the power-loom, invented in 1787, should still be fighting its way, even on such simple cloths as "tabbies," in the "twenties." The reasons were probably somewhat as follows. Operatives on new machines may be for a time worth less

than their wages, especially if the most capable hands cannot be secured for the new work and those who are obtained go about their business in a spirit of sullen discontent. Moreover new machinery is generally inefficient machinery, and the first power-looms were no exception to the rule. Cartwright sank a fortune in trying to make them pay; and probably the burning of the first power-loom shed at Manchester, that of Messrs. Grimshaw, was no great loss to its owners, since they were experimenting with the new machinery, at great cost and with little success, in the hopes of hitting upon improvements the need for which was only too apparent. The fundamental invention by Cartwright was followed by those of Bell and Miller in 1794 and 1798 respectively; yet a factory fitted up at Pollokshaws, Glasgow, with the latest improvements was financially a failure for many years.¹ Universal experience shows that inventions tend to be kept back by the trouble and risk involved in introducing them—and sometimes by establishing interests in existing patents²—and not unusually one invention depends for its success upon other inventions related to associated processes. The power-loom, for instance, at the beginning of the nineteenth century was not much more economical than the hand-loom for reasons of which the time lost in dressing the warp on the loom was by no means the least important; for this process, which had to be performed frequently, entailed a stoppage of the machinery. In 1803 and 1804, however, Radcliffe and his partner took out four patents for inventions, at which the former had arrived with the assistance of an ingenious mechanic named Thomas Johnson, and two of these pro-

1. Baines, p. 231.

2. See e.g. paper by Mr. G. O. Draper, of the Company which brought out the Northrop loom, in which it is stated that one ingenious device was kept back until certain patents expired (*Textile Recorder*, May 15th, 1900).

vided for the dressing of the warp before it was placed in the loom.¹ The other two patents related to a useful improvement in the loom whereby the cloth was taken up mechanically instead of being drawn forward at frequent intervals by hand. Machines fitted with the appliance for taking up the cloth came to be known as “dandy-looms,”² and they were extensively used. Yet Kennedy could write in 1819 in his paper on *The Rise and Progress of the Cotton Trade*,³ “It is found . . . that one person cannot attend upon more than two power-looms, and it is still problematical whether this saving of labour counterbalances the expense of power and machinery, and the disadvantage of being obliged to keep an establishment of power-looms constantly at work.” The common arrangement in some cases was still one girl to two looms in 1834,⁴ but in other cases one adult and one child from 9 to 11 years of age were “tending” three or four.

Even when supplemented by the inventions of Radcliffe the power-loom was far from perfect. It did not cease working when the warp broke, or when the weft broke, and whenever a cop was used up a stoppage became necessary for fresh weft to be inserted in the shuttle. In course of time inventions appeared by which all these defects were largely remedied. Early in the history of the power-loom a contrivance was adopted by which the loom was thrown out of action on the snapping of the weft, and now in addition machinery may be automatically checked on the breakage of a warp thread.⁵ The warp-stop motion usually employed, it is true, imposes some strain on the warp threads, since they have to bear the

1. Radcliffe, p. 24 *et passim*.

2. Reports, etc., 1834, x. Q. 5038.

3. *Proceedings of the Manchester Literary and Philosophical Society*, 1819.

4. Reports, etc., 1834, x. Q. 1951.

5. Cartwright shewed a warp-stop motion in his patent of 1786.

weight of the appendages by which the warps are connected with the check action; hence it has been needful in some cases to introduce stouter twist when this system is resorted to. However another idea has been put into practice lately by which the strain is appreciably reduced. The connection of the warp thread with the electrical arrangement for throwing the loom out of action is effected, not by a "faller" hanging on each thread, but by a wire which leans in the angle formed by the junction of two warps; if either of the warps break the wire drops and falling upon a receiver completes an electric circuit which achieves the rest. Nevertheless the first plan described above is the customary one at present. Again, the last few years have seen workable contrivances adopted for saving the time spent in feeding looms with new weft and threading the shuttle. Sometimes a new shuttle is made to take the place of the old one; sometimes the exhausted cop is ejected from the shuttle and a fresh one is introduced, the system in general being on the lines of that exemplified in the magazine rifle, and in this case the self-threading of the shuttle is essential; and sometimes the loom is fed without a stoppage being imposed upon the machinery, though in other cases a pause of a few moments takes place. Another invention of recent date prevents the cloth woven on automatic looms from being defaced by half picks; the new supply of weft is brought into operation before the old cop has been completely used up.

Certainly no problem in the cotton industry has been attacked more sagaciously of late years than that relating to mechanisms for weaving. But many of the recent inventions of automatic arrangements are still under trial, and successes have been achieved only in limited fields. In the United States, it is true, the automatic loom is already applied extensively, but in England it is making

its way far more slowly, and it is said to be more serviceable for the kind of cloth produced most largely in America than for the qualities upon which the English trade chiefly depends. It is too early yet to speak of the place which any of these new automatic schemes will occupy in the cotton industry, and it is not my purpose in this book to attempt an explanation of the divergent characters of the English and American cotton industries to-day.¹

Before we dismiss entirely the subject of weaving mechanisms it will be desirable to define the defects that remain and are of a general character, and, taking our stand upon the uncertain ground which is as much of imagination as fact, indicate the lines along which possible improvements may lie. The results of the ingenuity which has recently been exercised upon the problem of weaving do not stop with automatic looms. A plan is now being tried for keeping the shuttle in continuous motion and increasing the proportion of time in which it is actually contributing to the production of the fabric. On ordinary looms it has been calculated that for something like three-quarters of the time during which the loom is active, the shuttle is moving away from the web, or towards the web, or is resting stationary in the shuttle box. Moreover almost immediately after motion has been imparted to the shuttle it is suddenly checked and the reverse motion is given to it. These obvious defects in the ordinary loom it is proposed to repair by a most ingenious device. A number of warps are placed vertically in a circle with slight gaps between the warps to mark the divisions between the separate pieces of cloth. Round the circle the shuttle flies

1. Upon this question see T. M. Young's book on the American Cotton Industry, and the chapter on the Cotton Industry in Brassey and Chapman's *Foreign Competition*. It is obvious that inventions for increasing the output from each factory will be more attractive in places where the industry is growing rapidly than in places where it is stationary or growing slowly.

continuously, the warps crossing behind it as it passes and opening to receive it as it shoots round again to the same spot. Between each piece of cloth the weft is automatically cut after the shuttle has passed on, and the jagged edges are mechanically worked into the selvage. It yet remains to be seen what future there is for this invention or others on similar lines. Certainly it would be no small matter to save some of the wasted power and wasted time associated with the movement of shuttles to and fro, and banish for ever the horrid clatter and din that deafen one to-day in weaving sheds.

Another novel modern idea of a path-breaking character is to remove the shuttle altogether and replace it with a weft carrier. Weft carriers, however, while they are said to be not intrinsically unsuitable for the production of heavy sorts of woollens, have so far been pronounced inapplicable to the cotton industry; but improvements and simplifications may be expected, and at any rate it may be well for the future of the cotton industry that those engaged in it should realise that disadvantages appertain to the use of a shuttle loaded with weft and that another method of weaving is not unthinkable.¹ It should be noticed that the system of weft carriers would unavoidably perpetuate, in some degree, the defects mentioned in the previous paragraph.

The fundamental conception which has been worked out in the system of the weft carrier is to fetch the weft from each end of the loom alternately, dragging it from immense spools which may not be exhausted for two or three days. Amounts of weft sufficient for a double journey through the warp are automatically sheared off; the carrier seizes one end of the weft and drags it

1. An illustrated article on weft carriers will be found in the *Textile Manufacturer* for March 15th, 1899

through the warp, and afterwards drags in the other end of the length of weft which has been cut off. A continuous weft is therefore not to be found in the fabrics constructed by weft carriers. It is obvious that, if the system of drawing the weft from supplies which are not conveyed backwards and forwards in the shuttles is employed, an unbroken weft becomes an impossibility. Hence the root idea for avoiding the carriage of a cop of weft in the shuttle was that of inserting weft in lengths sufficient to go twice through the warp. It may aid the imagination to think of the weft as in the form of hair-pins which are inserted alternately from each side of the warp. One side of the loop of weft is laid with one traverse of the shuttle and the other side is laid when the carrier enters the warp the next time from the same side. On its return journey the carrier performs the same process with weft fed in from the other side. It might be thought that even plain cloth so woven would have jagged edges, but this is not the case since only half the picks on each side have cut ends and the loop which comes over each severed end holds it in place so that a continuous and smooth selvage is formed. Weaving without a shuttle is a novel idea, but there appear to be economies associated with it. For example, pairs of warps need not be so widely divided if the passage of a carriage containing considerable supplies of weft can be avoided, and the wider the warps are divided the greater is the strain to which they are subjected. Again continuous weaving is secured without self-feeding arrangements since the spools from which sections of weft are drawn may be of a size to last several days; and again the waste of unexhausted cop bottoms is saved.

CHAPTER III.

THE HAND-LOOM WEAVERS.

So far we have traced the general lines of development in the productive forms of the British cotton manufacturing industry by which it passed from the cottage to the steam-weaving shed; it now remains to examine the changes which took place in the material circumstances of those who had made cottons for the country before the steam-loom was thought of. To consider this question here involves leaving for a time the story of the coming of the factory half told—for hitherto nothing has been said of the progress of the factory system in spinning—and assuming something of what has yet to be recounted.

The lot of the hand-loom weaver was not an unpleasant one throughout most of the eighteenth century. Certainly his food was simple, and included little meat—in fact it was a diet which would be regarded as miserably inadequate by any artisan of to-day—his clothing was coarse and he worked hard; but his life was not without variety, and it could be spent in the country and fresh air. Guest says of the weavers that they were a fine body of men, full of the spirit of self-reliance. This he attributed to the fact that they sold their cloth and not their labour, that they were not servants but independent business men; and, further, to the facility with which they changed their employers, to “the constant effort to find out and obtain the largest remuneration for their labour, the incitement to ingenuity which the higher wages for fine manufactures and skilful workmanship produced, and a conviction that they depended mainly on their own exertions.”

Undoubtedly at certain periods in the second half of the eighteenth century many weavers were in more flourishing circumstances than they had ever been before. The inventions of the jenny, mule and water-frame, together with the cylinder-carder and the warping-mill, greatly lowered the cost of warps and weft. The mule yarns, which were finer than any cotton yarns previously produced in this country, were made up into delicate fabrics, muslins and light goods. These became extremely popular and entered into competition with such Eastern textiles as were still imported for consumption in spite of the heavy duties by which they were discouraged. And calico printing began to be more extensively practiced in the second half of the eighteenth century, especially towards its close. Hence it came about¹ that the amount of cotton wool imported increased in the period 1781–91 nearly 320 per cent.,² and that there was not a village within 30 miles of Manchester, on the Cheshire and Derbyshire side, in which cotton-manufacturing was not being carried on, and in numerous instances by those who had worked hitherto as weavers of woollen and linen goods but “were declining to produce those fabrics as the cotton trade increased.”³

The intense demand for hands to work up cotton caused a marked contraction of the woollen and linen industries in Lancashire,⁴ “while the old loom-shops being insufficient,

1. For an account of the legislative encouragements and discouragements of the cotton industry see *note* at the end of this chapter.

2. The rates of increase in the amounts of cotton wool imported for periods of ten years were as follows:—

1741—51	...	81	per cent.
1751—61	....	21½	” ”
1761—71	....	25½	” ”
1771—81	....	75½	” ”
1781—91	....	319½	” ”
1791—1801	....	67½	” ”
1801—11	....	39½	” ”
1811—21	....	93	” ”
1821—31	....	85	” ”

Observe the enormous rate throughout the period of 1771 to 1801.

3. *Origin of the New System of Manufacturing*, 1828, by William Radcliffe.

4. Radcliffe, p. 65.

every lumber-room, even old barns, cart-houses and outbuildings of any description were repaired, windows broke through the blank walls, and all were fitted up for loom-shops. This source of making room being at length exhausted, new weavers' cottages with loom-shops rose up in every direction."¹ The period, from 1788 to about the end of the century, was indeed "the golden age of this great trade,"² and it was a golden age for the operatives. In these years, says Radcliffe, "the operative weavers on machine yarns, both as cottagers and small farmers, even with three times their former rents . . . might be truly said to be placed in a higher state of 'wealth, peace and godliness,' by the great demand for, and high price of, their labour, than they had ever before experienced. Their dwellings and small gardens clean and neat,—all the family well clad,—the men with each a watch in his pocket, and the women dressed to their own fancy,—*the church crowded to excess every Sunday*,—every house well furnished with a clock in elegant mahogany or fancy case,—handsome tea-services in Staffordshire ware, with silver or plated sugar-tongs and spoons,—Birmingham, Potteries, and Sheffield wares for necessary use and ornament, wherever a corner cupboard could be placed to *show them off*,—many cottage families had their cow, paying so much for the summer's grass, and about a statute acre of land laid out for them in some croft or corner, which they dressed up as a meadow for hay in the winter. As before observed, I was intimately acquainted with the families I am speaking of in my youth, and though they were then in my employ, yet, when they brought in their work, a sort of familiarity continued to exist between us, which in those days was the case between

1. Radcliffe, p. 65. He is writing of the period 1788 to 1803.

2. *Ibid.*, p. 63.

all *masters and men*."¹ This description, which, however, was not true of the fustian-weavers whose condition was becoming wretched, does not exaggerate the prosperity of certain classes of weavers, particularly those who were engaged on cambrics. "When cambrics were made for ladies' dresses," says French, quoting an old inhabitant of Bolton, "weavers were vast weel off, could get six and thirty shillings a week."² That was about the end of the eighteenth century. Operatives who were even more prosperous were those working at the muslin trade, which began in England and Scotland about 1770 and in Ireland in 1780. The trade of muslin-weaving about 1793 was "the trade of a gentleman;" the operatives "brought home their work in top boots and ruffled shirts, they had a cane, and took a coach in some instances, and appeared as well as military officers of the first degree."³ They were very exclusive, according to French, and "would smoke nothing but long churchwarden pipes, and objected to the intrusion of any other handicraftsmen into the particular rooms in the public-houses which they frequented."⁴ John Kingan told the Committee on the Hand-loom Weavers in 1834 that after the invention of the fly-shuttle the wages of weavers doubled and trebled, and that some earned in 1790 about a hundred pounds a year.

Such were the circumstances of the fine workers; but at the same time the trade of coarse weaving was steadily becoming worse, to some extent in all probability because the popularity of fine goods lessened the demand for coarse goods, to some extent because those who failed at

1. Radcliffe, p. 67.

2. p. 62. Compare *Annals of Agriculture*, xvi. 423 (quoted from Cunningham, p. 449) where it is stated that cotton-weaving was so profitable at the beginning of the century that weavers were attracted from the woollen industry.

3. Reports, etc., 1834, x. Q. 5342, cf. also 5320.

4. *Life of Crompton*, p. 73.

the more delicate work fell back on the heavier as a last resource, and to some extent because coarse weaving was an accomplishment requiring no special skill which could be easily and rapidly learnt. The state of affairs at Oldham may be found pictured in Rowbottom's vivid pages. "From February to October, 1788, the fustian branch received a severe stab owing to so many houses failing, and those that stood their ground taking advantage and grievously oppressing the poor." June 12th, 1792 . . . died . . . "he was a fustian manufacturer, but character contrary to most, for he was sincerely a good man." August 1st, 1793: "The relentless cruelty exercised by the fustian masters upon the poor weavers is such that it is unexampled in the annals of cruelty, tyranny and oppression, for it is nearly an impossibility for weavers to earn the common necessaries of life, so that a great deal of families are in the most wretched and pitiable situation." From these extracts it is further apparent that friendly relations between masters and weavers were not so universal as Radcliffe was inclined to suppose or wished to believe; the weavers naturally attributed their ills to the fustian masters.

The distress of the coarse weavers, apparent even before the nineteenth century began, proved to be but the beginning of a depression which was ultimately to drive the trade of hand-loom weaving out of existence. From 1785 to 1806, reported the Commissioner for Scotland, hand-loom weaving was a prosperous trade; about 1793, however, it began to decline; after 1816 it collapsed completely. In 1835 the Committee appointed to consider the condition of the hand-loom weavers was offered a description written by one of its members, an employer, the famous champion of the factory workers, John Fielden, in which the situation of the weavers was represented as appalling; and

although the author was warmly in sympathy with the operatives, and keenly desirous of carrying his Bill enforcing a minimum wage, his statements certainly did not exaggerate the state of affairs among large classes of workers. His assertions were "that a very great number of the weavers are unable to provide for themselves and their families a sufficiency of food of the plainest and cheapest kind; that they are clothed in rags, and indisposed on this account to go to any place of worship, or to send their children to the Sunday schools; that they have scarcely anything like furniture in their houses; that their beds and bedding are of the most wretched description, and that many of them sleep upon straw; that notwithstanding their want of food, clothing, furniture and bedding, they, for the most part, have full employment; that their labour is excessive, not infrequently 16 hours a day; that this state of destitution and excessive labour induces them to drink ardent spirits to revive their drooping powers and allay their sorrows, whereby their suffering is increased; that their poverty and wretchedness cause many to embezzle and sell the materials entrusted to them to be worked up; and that to such an extent has this now gone that there are now notoriously receiving houses at which the weavers can exchange such embezzled materials for spirits, victuals and money." Every detail of this description was established by the investigations both of the Committee of 1834 and of the Commissioners and Assistant Commissioners who pursued the enquiry in a more critical frame of mind in and after 1839. Owing to poverty children were not merely ceasing to attend Sunday School, but ceasing to receive any education at all.¹ Wages were so low that in many cases it was only through large funds being provided "by legal provision, by

¹ *e.g.* Report of the Assistant Commissioner for Scotland, who remarked that at Anderston, Glasgow, of 160 children under 12 only 123 were being educated.

spontaneous contribution, and recently by the King's letter" that districts were preserved from the immediate horrors of famine.¹ The food in common use was of the coarsest kind; it consisted mainly of water porridge and potatoes, and even of these the weavers did not always enjoy a sufficiency. Some weavers became irretrievably bound to their masters by advances.² In this state of decay in the industry dishonest agents, who ground down the weavers by giving out less weft than the masters allowed and in other ways, became not uncommon. The alarming spread among the weavers of the practice of embezzlement was admitted on all sides,³ and a class of men called "mooters" appeared, whose profession it was to deal in stolen yarns. Some small manufacturers, in Scotland at least, acquired an unenviable notoriety under the names of "small corks" or "bowl-cork manufacturers," which were applied to them owing to their extensive employment of embezzled weft; they lodged their weavers as a rule and they were charged with persistently "cutting" rates. Embezzled weft was collected by women who travelled about the country under the pretence of selling crockery or bowls; hence the terms "bowl-weft" and "bowl-corks." One master expressed a fear that many weavers could not have made a living without indulging in malpractices, and for that reason he was opposed to strong repressive measures being taken. Weavers of the better sort felt keenly the disgrace into which the surrender to dishonesty was dragging their class, and at Preston they proposed to the masters in 1825 to combine, with the co-operation of the masters, in order "to do away with the monster, as they called the embezzler." The masters, however, discouraged the notion, suspecting no doubt that

1. Reports, &c., 1826-7, v. p. 4.

2. Reports, etc., 1834, x. Q. 6338, 6348-52, 6356-63, 7573-5.

3. A letter from the Deputy-Constable of Manchester (Reports, etc., 1834, x. 5032) describes a state of affairs which was common.

the cure might prove more harassing than the original trouble.¹

It would be a mistake to suppose that great distress existed, universally, or that distress existed equally in all branches of the industry. The able Commissioners of 1839 drew attention to this point and divided the weavers, whose condition they had been appointed to examine, into four classes according to the general nature of the work upon which they were engaged. There was work requiring (1) no strength and no skill, or (2) skill only, or (3) strength only, or lastly (4) skill and strength or unusual skill. Weavers on the first kind of work naturally suffered the most and those on the last kind the least; in fact the latter, said the Commissioners, were earning from 20s. to 28s. a week. To such differences in occupation the discrepancies between the accounts rendered by different witnesses and authorities must be largely attributed. The following figures obviously represent the state of affairs at one extreme, but they seem to have held approximately of a large proportion of the total trade:—²

1797—1804	price	26/8—281 lbs.	of provisions.
1804—11	"	20/—238 "	"
1811—18	"	14/7—131 "	"
1818—25	"	8/9—108 "	"
1825—32	"	6/4—83 "	"
1832—34	"	5/6—83 "	"

1. Reports, etc., 1834, x. Q. 5894-5.

2. Reports, etc., 1835, xiii. p. 13. Compare with these figures the following:—

Prices paid for one kind of cloth at Bolton.

1797	....	29/-
1807	....	18/-
1817	....	9/-
1827	....	6/6
1834	....	5/6

(Reports, etc., 1834, x. Q. 5032).

Prices for weaving 6—4ters, 60 Cambrics, 24 Yards, 160 picks in inch.

1800	....	31/6
1810	....	22/- (average)
1820	....	12/-
1822	....	12/-

(Guest, p. 35 note).

The following was given as an average movement:—

Jan. 1st, 1800	....	£4 9 0
Sep. 13th, 1802	....	5 0 0 (highest)
Dec. 1st, 1806	....	3 0 0
Mar. 10th, 1808	....	2 5 0

(Reports, etc., 1808, ii. p. 103). This of course was not weekly. On this question see also Bowley, *Wages in the United Kingdom*, pp. 110-3, and table to face p. 119.

The last column is calculated on the assumption that the wage was spent in equal proportions on flour, oatmeal, potatoes and butcher's meat. The fall in wages was somewhat less rapid than that shown by the above prices, since within this period some minor improvements effected in the cottage-loom must have rendered it more productive, though in view of the evidence given at the time we cannot attach much weight to this consideration. On the other hand, it was frequently asserted that warps were becoming longer, while weavers continued to be paid by the piece. In view of the care exercised by the Commissioners in their examination and of their undoubted ability, we cannot do better than accept their statement on the movement as a whole after the peace. "It appears," said they, "that the wages of the hand-loom weavers have been reduced generally since 1815 to one-half or one-third of the wages paid at that period, and that the sums reduced were largest in 1816, 1817, 1826 and 1829."¹ The fall during the previous fifteen years had been roughly from 30 to 50 per cent.; the total fall therefore ranged in all probability from about 60 to 80 per cent. The wage of the worst paid weavers, who worked terribly long hours, fell as low sometimes as 5s. or 6s. a week; on the whole, it ranged up to about 10s., and upon this sometimes a man, his wife and children had to make shift to exist. Compare with this the earnings of the spinners in Manchester.²

In considering the circumstances of the hand-loom weavers the distinction between the town weavers and

1. Reports, etc., 1835, xiii. p. 12. Porter's figures for hand-loom weavers' wages, given in *Progress of the Nation*, were—

1810	....	16/3
1815	....	13/2
1819	....	9/6
1824	....	6/6
1832	....	9/-

2. See note on p. 75.

those who occupied small farms must be borne in mind. It was upon the latter, the Committee on Emigration reported, that the distresses of the times fell with peculiar severity, though both classes were reduced to deplorable poverty. They were engaged chiefly on the rough work, and they were the first to suffer when work was slack. Moreover they were forced by the payment of increasing poor-rates to assist in the support of many of their fellow weavers who were employed in manufacture alone; and, continued the Committee on Emigration; "a remnant of honest pride and shame has prevented many of those in the extremest distress from applying for parish relief; while others, being from their remote situation less immediately under the eyes of the regular authorities, have lingered on, till found accidentally, as has been proved in evidence, in the last stages of misery and disease." The Committee proposed that these weavers should be helped to emigrate, since they were also agriculturists and would not therefore be utterly at a loss in an undeveloped country.

The complete collapse of the rates for hand-loom weaving suggests the existence of some unusual combination of events. In certain years, it is true, distress was general, but it was less than that suffered by the hand-loom weavers; bad harvests, heavy taxation and the industrial and commercial disorganisation due to the war are not, therefore, a sufficient explanation. Many laid the blame on the corn laws, but their incidence, again, was largely general. Nor is any peculiar incidence of the war on our textile industries a sufficient reason, for the war ceased in 1815 and the special depression intensified. The causes for the collapse of hand-loom weaving must have consisted in forces tending to diminish relatively the demand for hand-loom weavers or

Consequently careful financial arrangements were made by the new amalgamation, which had been forced into existence by the Manchester Society's feeling of weakness after its failure in the strike of 1829. A congress of spinners of the British Isles had been summoned at Ramsey, and the federation there formed met again at Manchester in 1830.¹ A weekly subscription of one penny per member and an allowance of 10s. weekly as strike pay were determined upon. When more strikes were desired than the funds could support, districts were to ballot for the privilege of striking. As regards partial strikes, each district was to support its own until the cost per member rose above 1s. extra per week; then it might appeal to other districts, but it was not allowed to draw upon the funds of the amalgamation. In fact, it was regarded as the function of the district to keep individual employers up to the district level, and that of the amalgamation to prevent district reductions and bring districts into line.

The federation of 1829 was a real federation. Only unions could join, and each union was a recognised unit with distinct powers and funds.² The usual difficulties were met with in the government of the association; the small Manchester council, checked by half-yearly meetings of delegates, did not prove altogether satisfactory.³ It naturally gave rise to jealousy; but at that time the executive could not have been made representative, so inadequate were the means of communication and transport

1. The leading spirit was Doherty, Secretary of the Manchester spinners, though M'Gowan and Foster did much to make this federation a success. Doherty also founded the National Society for the Protection of Labour. Francis Place says that he was "a very extraordinary man, a cotton spinner at Manchester, a rigid, uncompromising, intolerant, Irish Catholic, altogether a wrong-headed, singularly obstinate, persevering man." (Quoted from Webb MSS., Textiles, i. 5.) A short account of him appears in Webb's *History*, 104—5 note.

2. See Report of the Ramsey Congress, Resolutions 8, 9, 10, 15.

3. Nor had the three national committees, decided upon at Ramsey, been satisfactory apparently, otherwise they would not have been given up. The Congress had hesitated between three committees and one.

then existing and so great their costs. The last we hear of this Spinners' federation is from the *Poor Man's Advocate* of June 23rd, 1832. "Almost every spinning district," it writes, "of any consequence was enrolled in the Union. The power of the union of course increased with its members, and a number of the worst paying employers were compelled to advance the rates of spinners to something like the standard rate. The union, however, which Mr. McGowan¹ had mainly contributed to mature, has since, from distrust or weariness, sunk into comparative insignificance." It had naturally paled before the rising star, the National Association for the Protection of Labour, founded in July, 1830.² The Manchester Society's sense of helplessness after the failure of the strike of 1829 had contributed in no trivial degree to the foundation of the Spinners' Amalgamation, and the Society for the Protection of Labour,³ which was a federation of some 150 distinct clubs, was established because of the growing conviction in the minds of its promoters, that ordinary trade federations were not powerful enough to achieve much. To this "trades' union" each society paid an entrance fee of

1. Doherty was the real leader, but he probably wrote this notice as it appeared in his paper.

2. On the early history of this association see Doherty's letter of May, 1829, to the Liverpool sailmakers. (Webb's *History*, p. 106.)

3. From the Appendix to *Combinations of Trades* we learn that the following societies connected with the cotton industry were among the members of the Association for the Protection of Labour:—

Spinners.—Ashton, Chorley, Rochdale, Mosley, Staley-Bridge, Manchester, Leigh, Oldham, Clitheroe, Hyde, Stockport, Shepley, Preston, and Rossendale.

Weavers.—Manchester, fustian.

" power-loom fustian.

" cotton and worsted small-ware.

" power-loom cotton.

Clitheroe, "

Ashton, power-loom. "

Staleybridge, power-loom.

Dukinfield, "

Macclesfield, small-ware.

Derby, tape.

Blackrod, nankeen.

Power-Loom Overlookers.—Staleybridge and Dukinfield.

Card Grinders and Strippers.—Manchester, Ashton, and Clitheroe.

Cotton Yarn Dressers.—Manchester, Ashton, Clitheroe, Staleybridge, and Dukinfield.

Spindle and Fly Makers.—Manchester and Preston.

Sizers.—Manchester.

Stretchers.—Manchester.

The receipts for the first nine months of its existence amounted to £1,866.

