

The Labour Force in the Textile Industries

In many European countries during the period of industrialisation more workers were employed in the textile industries than in any other branch of manufacture. In the United Kingdom in 1841 there were nearly a million and a half textile workers, of whom about two thirds were women and children¹. In the cotton industry three fifths of the labour force consisted of women and of children under the age of 13. The high ratio of women and children to men in the textile industries was due to the fact that their wages were lower than those of men so that millowners saved money by employing them. Certain tasks, such as joining broken pieces of cotton, were performed more efficiently by children than by adults. Moreover women and children were more amenable than men to the discipline imposed upon workers in the early factories.

While the total labour force in the textile industries amounted to nearly a million and a half in 1841, the factory inspectors' returns for 1839 showed that under half a million workers were employed in the textile factories of the United Kingdom. Over a million textile workers — 665.000 of them living in Ireland — did not work in factories. Most of them were hand loom weavers or worsted wool combers. As late as 1850 about half the woollen workers in Yorkshire were still outside the factory system². The cotton mills employed the largest number of workers in the textile industries — nearly 260.000 in 1841. Next came the woollen and worsted mills (86.446), followed by the flax mills (43.487) and the silk mills (34.318)³.

In Germany, too, the textile industries, with over 600.000 workers in 1861, were the largest branch of manufactures in the country. As in England the number of operatives employed in factories (143.664) was small in comparison with the craftsmen, such as hand loom weavers and wool combers, who worked at home or in small workshops⁴. A special feature of the textile industries in Germany was the large number of part-time operatives who combined work in industry with work on the land. In Prussia in 1843, for example, nearly nine tenths of the linen looms were operated by part time workers⁵. The

1 George Richardson Porter, *The Progress of the Nation*, new edition, London 1851, p. 75. For Great Britain the census of 1841 regarded adults as those over 20 years of age; for Ireland over 15 years of age.

2 Kenneth G. Ponting, introduction to *Edward Baines, Account of the Woollen Manufacture of England* (1875), New York 1970, p. 30.

3 G. R. Porter, *op. cit.*, pp. 76–78.

4 Gertrud Hermes, *Statistische Studien zur wirtschaftlichen und gesellschaftlichen Struktur des zollvereinten Deutschlands*, in: *Archiv für Sozialwissenschaft und Sozialpolitik*, Vol. 63, H. I, 1930, pp. 141–42.

5 Horst Blumberg in: *Hans Mottek/Horst Blumberg/Heinz Wutzmer/Walter Becker, Studien zur Geschichte der industriellen Revolution in Deutschland*, Berlin 1960, p. 125.

German like the English textile industries relied heavily on the labour of women and children. In 1858 in the woollen and worsted industries 45 % of the adult workers in the woollen spinning mills in Prussia and 66 % of those in the worsted mills were women. In Württemberg in the same year the percentages were 54 and 57. Some woollen mills employed an even larger proportion of women than this. Thus 85 % of the adults employed in the *Kammgarnspinnerei Schoeller* in Breslau in 1870 were women⁶. In Germany, as in England, many children were employed in the early textile factories. In 1839 Friedrich Engels stated that in the cotton town of Elberfeld nearly half the children who should have been at school were working in the local mills⁷. Children were also exploited under the domestic system which existed side by side with modern factories. Schneer reported in 1844 that in the Silesian linen industry, where there were very few mechanised mills, children from the age of 4 upwards worked at home⁸.

In France the employment of women and children in the textile industries increased in the first quarter of the nineteenth century. About one third of the cotton operatives in Alsace were women. As early as 1821 the council of the district of Colmar denounced manufacturers for introducing a new sort of forced labour in their factories. »Plusieurs de MM. les fabricants, non contents d'avoir infiniment étendu le produit de leurs spéculations, à l'aide de ces machines, ont poussé bien plus loin leur cupidité, en imaginant de faire travailler les enfants de tout sexe et de tout âge, jour et nuit, dans leurs ateliers pour entretenir sans relâche l'action de leurs machines et en doubler le bénéfice; en quoi ils sont secondés par la misère des habitants qui les environnent. Aussi, les pauvres enfants et jeunes gens, livrés à ce nouveau genre de travaux forcés, perdent leur santé conservent à peine l'apparence humaine«⁹. In 1828, Blacherd, the mayor of Mulhouse, complained that child labour was being abused in the local spinning mills¹⁰. And in the 1840s children formed the largest group of those employed in the silk industry of Lyons. In 1847 in the cotton spinning mills of Alsace and Seine Inférieure about 7,500 children were employed out of a total work force of 26,000.

The labour force in the textile industries — domestic craftsmen and factory operatives — was not an undifferentiated mass of wage earners. A great many tasks had to be performed in a textile mill calling for various degrees of skill. And the introduction of new machines was accompanied by the appearance of new types of operatives. The principal operations

6 Horst Blumberg, *Die deutsche Textilindustrie in der industriellen Revolution*, Berlin 1965, Part IV: »Die Arbeiter der deutschen Wollindustrie«.

7 Friedrich Engels wrote: »in Elberfeld allein werden von 2500 schulpflichtigen Kindern 1200 dem Unterricht entzogen und wachsen in den Fabriken auf, bloß damit der Fabrikherr nicht einem Erwachsenen, dessen Stelle sie vertreten, das Doppelte des Lohnes zu geben nötig hat, das er einem Kinde gibt«. (Briefe aus dem Wuppertal, in: *Telegraph für Deutschland*, No. 49, March 1839, reprinted in: *Karl Marx/Friedrich Engels, Werke [MEW]*, Vol. 1, Berlin 1964, p. 418).

8 Alexander Schneer, *Über die Noth der Leinen-Arbeiter in Schlesien und die Mittel ihr abzuhelfen*, Berlin 1844, and Jürgen Kuczynski, *A Short History of Labour Conditions under Industrial Capitalism*, Vol. III, Part I: Germany 1800 to the present Day, London 1945, p. 27. For details concerning child labour in the textile industry in Prussia see Günther Kurt Anton, *Geschichte der preussischen Fabrikgesetzgebung bis zu ihrer Aufnahme durch die Reichsgewerbeordnung*, 1891, reprinted Berlin 1953.

9 Extrait du procès-verbal des délibérations du conseil d'arrondissement de Colmar pendant sa session de 1821, in: *Nicholas George Marie and Hubert Bourgin, Le régime de l'industrie en France de 1814 à 1830*, Vol. II, Paris 1921, pp. 71–72. See also *Achille Penot, Statistique générale du département du Haut-Rhin, Mulhouse 1831*, p. 326 et seq.

10 *Paul Leuilliot, L'Alsace au début du XIX^e siècle*, Vol. II, Paris 1959, pp. 496–97.

in the manufacture of cotton goods were the preparatory processes (blowing, winding, and carding), spinning, weaving, and finally finishing processes (bleaching, dyeing, and printing). These operations might be carried out by different firms in separate establishments — spinning mills, weaving sheds, dyeworks, and printing works — or the various manufacturing processes could be concentrated in all purpose factories¹¹.

Each stage in the process required the services of operatives with different skills. In the blowing room strippers and grinders, assisted by tenters, cleaned the raw cotton on a scutching machine. The next process was one in which carders straightened the cotton fibres on carding machines. This was followed by the drawing and roving process, normally performed by female operatives. In the spinning room the yarn was spun either on throstle frames or on mules. In the 1830s mule spinners, assisted by two or three young piecers, operated machines with 300 to 400 spindles. When self-acting mules were installed, they were generally operated by former mule spinners, while ring spinning was performed by those who had once operated throstles.

In the weaving shed winders, reelers, and warpers carried out the preliminary operations in the winding room. The weaving was done on power looms, two or three being operated by one weaver. As various improvements were made to power looms so it became possible for a weaver to operate a greater number of machines. Weavers were assisted by tenters. One tenter served four weavers. (In 1830 there were still many hand loom weavers who worked at home but they were a dying race). The finishing processes were performed by bleachers, dyers, and printers. A factory operated by steam power had an engine room staffed by engineers, mechanics, and firemen. In addition to factories producing cotton yarn or cloth there were those which turned out specialised products such as sewing thread, muslins, fustian, and hosiery. Each department of a factory was under the control of an overlooker. In a weaving shed the overlooker (or tackler) would supervise the work being done on 80 looms.

In other textile factories many of the operations were similar to those in cotton mills. In the manufacture of silk, however, reeling and throwing took the place of spinning, while in the worsted branch of the woollen industry combing took the place of carding. In all textile factories the work force was composed of many men, women, and children who performed numerous tasks which varied considerably in the amount of skill involved. When new machines were invented or improved what was once a skilled job might become a semi-skilled job.

The significant differences between the skills and responsibilities of the various operatives were reflected in their wages. G. H. Wood's detailed researches into the wages paid in the Lancashire cotton industry show that the adult wage earners fell into three groups. Wood estimated that in 1833 the average weekly earnings of the highest paid group — the overlookers, self-actor mule spinners, dressers, and sizers — amounted to 25/- a week or a little more. The second group of workers included the strippers, grinders, warpers, and power loom weavers who earned between 11/- and 14/6 d a week. The third group — tenters, throstle spinners, reelers, and hand loom weavers — earned only 10/- a week or less. The highest paid adults therefore earned about two and a half times as much as the

11 In the United Kingdom in 1850 there were 834 spinning mills (over 9 million spindles), 278 weaving sheds (nearly 51,000 looms) and 573 factories combining spinning and weaving (11 million spindles and nearly 200,000 looms): see *Thomas Ellison, The Cotton Trade of Great Britain*, London 1886, p. 72.

lowest paid adults and could be regarded as members of the »labour aristocracy«¹². Children earned much less than adults. The weavers' helpers earned 5/- a week, and the little piecers, who assisted the spinners, earned only about 3/6 d a week¹³.

THE EARLY TEXTILE FACTORIES

Long before the establishment of modern factories producing yarn and cloth by machines operated by a water wheel or a steam engine there existed in various parts of Europe textile establishments in which considerable numbers of men, women, and children worked together in a large hall or set of buildings. In England in the sixteenth century John Winchcombe (Jack of Newbury) operated a woollen manufactory which — according to a ballad of 1597 — employed 100 women as carders, 200 girls as spinners, 200 men as weavers, 50 men as shearers, 80 dressers, 40 dyers, 20 fullers, and 150 children¹⁴. These figures may be too high. But if the ballad monger be allowed a little poetic licence it is probable that Winchcombe employed a large number of workers under one roof. In Scotland a woollen mill, run by a joint stock company at Newmills, employed 233 workers at the end of the seventeenth century, while another at Glasgow had 1.400 workers in 1700.

In France in the seventeenth century the *Manufacture de Saptés* employed 800 workers, and the brothers van Robais of Abbeville had 1692 workers, including 822 spinners and 200 weavers, while in the eighteenth century a carpet manufactory at Beauvais employed 130 workers. In Austria in the 1770s the Imperial Wool Factory at Linz employed about 1.000 workers while Count von Waldstein had over 400 workers in his woollen mills at Oberleutensdorf in Bohemia. In Germany the Royal Wool Warehouse in Berlin — in which only the preparatory and finishing processes were carried out — was said to be the largest manufactory in the country. At Luckenwalde Frederick the Great built what was popularly known as »the big factory« to make a thin combed unfulled cloth (*Zeug*). This establishment had several buildings, including a combing room, a yarn storehouse, a dyeing room, and a finishing workshop¹⁵. The existence of undertakings of this size long

12 The phrase was apparently coined by Ernest Jones, one of the Chartist leaders, in his periodical »Notes to the People«, 1851–52, Vol. I, p. 511: see William Henry Chaloner, *The Skilled Artisans during the Industrial Revolution, 1750–1850*, London 1969, p. 4. Hobsbawm observes that in the 1890s »the secretary of the Operative Spinners was certain that his men differed from the piecers and the less skilled in general in their superior ability« (Eric J. Hobsbawm, *Labouring Men*, London 1968, p. 275).

13 For wage statistics in the English cotton industry see George Henry Wood, *The History of Wages in the Cotton Trade during the past Hundred Years*, London 1910, table 32, pp. 107–112 (hand loom weavers) and table 42 (factory operatives), p. 131.

14 Werner Sombart, *Der moderne Kapitalismus*, Vol. II, München 1921, p. 768 quotes the following lines from the ballad:

»Within one roome being large and long
There stood two hundred Loomes full strong
Two hundred men, the truth is so
Wrought in these Loomes
All in a row«.

See also Lujo Brentano, *Eine Geschichte der wirtschaftlichen Entwicklung Englands*, Vol. II, Jena 1927, pp. 66–68.

15 Werner Sombart, op. cit., Vol. II, pp. 766–72; Horst Krüger, *Zur Geschichte der Manufakturen und der Manufakturarbeiter in Preußen*, Berlin 1958; Rudolf Forberger, *Die Manufaktur*

before the age of great industries gave some millowners and their managers experience in coping with the problem of labour relations that arose when a large number of operatives were working in one building.

When textile factories with power driven machinery were set up, considerable difficulties were experienced in recruiting workers. Since water wheels were used before steam engines, many early factories were built in remote sparsely populated regions on the banks of rivers and streams. The necessary labour force was not available locally and had to be recruited elsewhere. It proved to be no easy matter to persuade spinners and weavers, who worked at home, to become factory operatives, especially if this involved giving up part time work cultivating a garden or a smallholding. In 1841, for example, it was reported that manufacturers on a large scale had not yet been established in Saxony largely owing to »the abhorrence which the people have to be enclosed in factories; they would much rather work in their own houses, even at lower wages, than be shut up in mills [. . .]«¹⁶.

Consequently the new factories were often run by men, women and children who had no previous experience of working in a textile industry. Adult workers might be paupers, tramps, or casual labourers while some of the children were supplied by the poor law authorities. Since local respectable workers shunned the early factories – which they regarded as no better than workhouses or prisons – textile manufacturers sometimes found it necessary to employ men and women from a distance, who were accustomed to a low standard of living. Some of these workers were foreigners who could not easily be assimilated into the local work force. The Irish cotton workers in Lancashire and Scotland and the German speaking cotton workers in Alsace were immigrants of this sort. By the 1840s the Lancashire cotton industry had attracted thousands of Irishmen. Many were handloom weavers. Those who gained employment in cotton mills performed relatively unskilled and poorly paid work in the blowing rooms and card rooms. Hardly any of them secured better paid jobs as spinners. On the other hand the Scottish cotton mills in Glasgow and Paisley did employ Irish spinners¹⁷. In Alsace there were cotton towns such as Mulhouse and Thann which attracted workers from neighbouring German speaking districts – Baden, Switzerland and Lorraine. Textile districts also attracted groups of wandering workers who moved from town to town seeking employment in mills which were taking on new hands. In 1840 Dr. Villermé declared that such migrants in Alsace formed a wretched floating population which increased when the cotton industry was prosperous and declined when there was a slump. These immigrants were quite distinct from the settled local population and could be identified by their way of life and by their poverty. In 1835 in Mulhouse alone there were between 12.000 and 13.000 persons who

in Sachsen vom Ende des 16. bis zum Anfang des 19. Jahrhunderts, Berlin 1958; *Ortulf Reuter*, Die Manufaktur im Fränkischen Raum, Stuttgart 1961; *Hermann Freudenberger*, The Waldstein Woolen Mill, Boston, Mass., 1963; *Gerhard Slawinger*, Die Manufaktur in Kurbayern, Stuttgart 1966; and *Hildegard Hoffmann*, Handwerk und Manufaktur in Preußen 1769 (Das Taschenbuch Knyphausen), Berlin 1969.

16 Evidence of T. E. Tennent before the *Select Committee . . . (on) the Exportation of Machinery* (Parliamentary Papers, 1841, Vol. VII) in: *Sidney Pollard and Colin Holmes*, Documents of European Economic History, Vol. I, London 1968, p. 312.

17 *Arthur Redford*, Labour Migration in England 1800–1850, new edition, Manchester 1964, pp. 151–52. As early as 1791 magistrates reported the existence in Lancashire of »a very numerous and foreign population, estranged, unconnected, and in general composed of persons who are a species of exile« (quoted by *Herbert Arthur Turner*, Trade Union Growth, Structure, and Policy, London 1962, p. 48).

could be regarded as belonging to this migrant section of the community¹⁸. At the same time Léon Faucher wrote that there were migrant families in England who wandered from town to town, from factory to factory, seeking work, and who had no settled home. These unfortunate operatives lived in furnished rooms, where several families were often crowded together in a single bedroom, at the rate of three pence each for bedding. A small and unhealthy lodging was thus much dearer than a separate cottage¹⁹. A leading Lancashire cotton manufacturer complained of the »migratory spirit, which is one of the peculiar characteristics of the manufacturing population, and perhaps the greatest of all obstacles in the way of permanent improvement among them«²⁰.

The manager of an early textile factory could not recruit a homogeneous labour force. He had to create a labour force out of a miscellaneous collection of operatives which might include some skilled workers but would also include workers with no previous experience in any branch of the textile industry. A witness before a parliamentary enquiry in England stated that he had entered the cotton industry in Manchester in 1801. »When I began to work in the cotton manufacture the workmen were not accustomed to that description of labour; they were joiners, carpenters, and colliers, who were induced, by the higher wages which spinning yielded, to abandon their handicraft trades, and become spinners«²¹. The difficulties of training operatives may be illustrated from the experience of some skilled Bradford woollen weavers who worked in the *Maschinen Wollen-Weberei* at Wüste Giersdorf in Lower Silesia in the 1840s. One of them wrote that »learning [*sic*] these fellows is like administering medicine to an ox«²².

Eventually when more and more yarn and cloth produced by the factories came on to the market to be sold at lower prices than those charged by domestic workers, the cottage textile industries showed signs of collapse. But some of these domestic workers survived for a time by working on the land at harvest time. A survey of a rural French canton in 1848 mentioned that »woolcombers like to work in the fields in the summer and return to their workshops in the winter«. The problem of securing the services of reliable skilled factory operatives gave manufacturers every incentive to instal improved machinery. And the replacement of manual labour by machines was also encouraged by industrial unrest. Strikes in the cotton towns of Hyde and Dukinfield led local millowners to ask Richard Roberts if he could construct an automatic spinning machine and within a few months the inventor had patented the self-acting mule (1825)²³.

The aversion of respectable workers to taking a job in a factory is easy to understand. They had to accept conditions of work to which they were not accustomed. They had to work long hours, six days a week throughout the year. Factories did not close on saints' days. Former secular holidays, such as an occasional free Monday, disappeared. Many years elapsed before factory workers secured a Saturday half holiday or before factory

18 Louis René Villermé, *Tableau de l'état physique et morale des ouvriers employés dans les manufactures de coton, de laine, et de soie*, 2 vols., Paris 1840, Vol. I, p. 29 and pp. 47–49 and Claude Fohlen, *Qu'est-ce que la révolution industrielle?* Paris 1971.

19 Léon Faucher, *Manchester in 1844*, London 1969, p. 63: an abridged translation of Léon Faucher, *Etudes sur l'Angleterre*, 2 vols., 1845.

20 *Ibid.*, p. 99, quoting from an article by Robert Hyde Greg in the *Westminster Review*.

21 *Ibid.*, p. 73.

22 Letter from William Briggs to Messrs. Foster of Queensbury: See William Otto Henderson, *The State and the Industrial Revolution in Prussia 1740–1870*, Liverpool 1958, p. 136.

23 Andrew Ure, *The Philosophy of Manufactures*, London 1835, pp. 367–70.

holidays were established in industrial districts, such as the wakes weeks in the textile towns of Yorkshire and Lancashire.

Textile operatives were subjected to a harsh discipline in the factories, which was enforced by the threat of instant dismissal and by the levying of fines. It was an age when rules were strictly enforced. Men in the armed forces, inmates of prisons and workhouses, and children in school were severely punished for any sort of insubordination.

Factory workers were required to attend regularly at their place of employment and were not allowed to take days off. Absence from work on a Monday morning, without a good excuse, might lead to dismissal. Operatives were expected to arrive punctually at the factory gate in the morning and had to tend the machines for many hours without taking a break. They had to adapt themselves to the remorseless rhythm of the machine which dominated their working lives. Instead of a day which began at sunrise and ended at sunset, the factory day – once gas lighting had been introduced²⁴ – might be one of 24 hours, in which case the machines ran continuously day and night and operatives had to adjust their lives to a system of shift work.

Very long hours were worked in the early textile factories²⁵. Léon Faucher complained that overworking was a malady which Lancashire had inflicted upon England, and which England in its turn had inflicted upon Europe²⁶. In Britain a 14 hour working day was not unusual and at busy times even this might be exceeded. In France in the 1830s the normal working day in textile factories was 15 hours with 1½ or 2 hours off for meals²⁷. It was not until 1892 that a law was passed limiting the work of women and young persons to 11 hours a day. Equally long hours were worked in German textile mills, as can be seen in Prussia from the replies to Chancellor von Hardenberg's enquiry of September 7, 1817²⁸ and from the reports of local officials to the Ministry of Education in 1824–25²⁹. Indeed the twelve hour day survived in Germany until after 1870³⁰. And in Switzerland a thirteen hour day was worked in textile mills in the 1860s, which was an hour longer than in France and 2½ hours longer than in England³¹. Excessively long hours injured the health of factory workers and made it impossible for them to lead a normal family life. There were few opportunities for leisure or recreation. If all members of a family worked in a factory they might see little of each other except on Sundays.

State action eventually brought about some reduction in these excessively long hours. The English Factory Act of 1833, which applied to textile mills (except silkworks) forbade the employment of children under the age of 9. Those aged between 9 and 13 were not to work for more than 9 hours a day. Young persons aged 14 to 18 were not to work more than 12 hours a day. Children and young persons were not to work at night. Inspectors were

24 Hans Caspar Escher, who visited Manchester in 1814, wrote on October 14: »The spinning mills are now working until 8 p. m. by gaslight« (W. O. Henderson, *Industrial Britain under the Regency*, London 1968, p. 49).

25 Karl Marx, *Das Kapital*, vol. I, Part III, ch. 8: Der Arbeitstag, MEW, vol. 23, pp. 245 et seq.

26 Léon Faucher, *Manchester in 1844*, p. 83.

27 Hilde Rigaudias-Weiss, *Les enquêtes ouvrières en France entre 1830 et 1848*, Paris 1936, p. 37 (citing reports by Buret and Villermé).

28 Jürgen Kuczynski, *Die Geschichte der Lage der Arbeiter unter dem Kapitalismus*, Vol. 8: Hardenbergs Umfrage über die Lage der Kinder in den Fabriken, Berlin 1960.

29 Günther K. Anton, *Geschichte der preußischen Fabrikgesetzgebung . . .*, pp. 24–33.

30 Ludwig Puppke, *Sozialpolitik und soziale Anschauungen frühindustrieller Unternehmer in Rheinland-Westfalen*, Köln 1966, p. 41.

31 Louis Reybaud, *Le Coton*, Paris 1863, p. 290.

appointed to secure the enforcement of the law. This Act was amended in 1844 and in 1847. The Act of 1847 limited the hours of women as well as young persons to 10 hours a day. In Prussia a decree (*Regulativ*) of 1839 gave some protection to children and young persons not only in textile mills but in all factories, mines, and ironworks. Those under 16 might work in a factory only if they had a certificate showing that they could read and write. Their work was limited to 10 hours a day and they were not allowed to work at night. In France the first Factory Law, passed in 1841, forbade the employment of children under the age of 8 in factories. It fixed an 8 hour day for children from 8 to 12 and a 12 hour day for young persons aged from 12 to 16. This was followed by a Twelve Hours Law in 1848 and the appointment of the first factory inspector in 1853.

Although early laws fixing the maximum length of the working day in factories applied only to women, children and young persons they had the effect of reducing the hours worked by men since the labour force of a textile factory could not operate satisfactorily if some of the workers were withdrawn. If the hours worked by half — or more than half — of the operatives in a textile mill were regulated by law it meant in practice that the men would work the same hours as the women and children. Many years elapsed before the laws regulating hours of work could be strictly enforced. While some employers accepted the reduction in hours, others sought to evade the law. There were millowners and managers who continued to overwork their operatives and they took full advantage of any loophole in the law. Factory inspectors fought a long drawn out battle with recalcitrant employers who defied the law and with the courts which dealt far too leniently with those who broke the law. So the reduction of the hours worked in textile mills was a slow process. It has been argued that some manufacturers reacted to the reduction of the working day by speeding up their machinery so as to get as much yarn and cloth made in 10 hours as had formerly been produced in 11 hours³². Such an intensification of labour placed operatives under additional physical and mental strain.

The health of textile operatives suffered not only from long hours of work but also from conditions in the factories. The incessant noise of the machines strained the workers' nerves. One operative declared that the long hours of labour and the high temperature of the factories produced lassitude and excessive exhaustion³³. A French observer thought that the tropical heat in the factories promoted the development of puberty »before age and education had matured the moral sentiments«³⁴. Power loom weavers worked »amid a noise most resembling that which accompanies an express train through a long tunnel«³⁵. A hand loom weaver told an English parliamentary enquiry in 1824 that nobody wanted to work in a power loom shed because »there is such a clattering and noise it would almost make some men mad«³⁶. And Jules Simon wrote that visitors to the French textile factories found it difficult to breathe in them.

In textile mills several work rooms were full of fluff and dust and had an unpleasant odour. Few of those who worked in them were free from bronchial and chest complaints.

32 *Karl Marx*, *Das Kapital*, Part IV, ch. 13 (3 c): *Intensifikation der Arbeit*, MEW, vol. 23, pp. 431 et seq.

33 *Léon Faucher*, op. cit., p. 73.

34 *Ibid.*, p. 46.

35 *Arthur Arnold*, *The History of the Cotton Famine*, London 1864, p. 34.

36 Quoted by *Rhodes Boyson* in: *The Long Debate on Poverty*, ed. by *Arthur Seldon*, second edition, London 1974, p. 66.

In weaving sheds the workers were liable to be splashed with oil. The wet spinning of linen yarn was a particularly unhealthy occupation. »Das Wasser spritzt ihnen [den jungen Mädchen und Kindern] von den Spindeln auf den Leib, so daß die vordere Seite ihrer Kleider fortwährend bis auf die Haut durchnäßt ist und fortwährend Wasser auf dem Boden steht. In geringerem Maße findet das auch in den Doublirzimmern der Baumwollfabriken statt, und die Folge davon sind fortwährende Erkältungen und Affektionen der Brust«³⁷. Women and girls engaged in cotton throstle spinning or flax spinning stooped so much that they often contracted curvature of the spine. Those who knitted stockings or embroidered lace suffered from eyestrain. Many textile workers had varicose veins, fallen arches, and leg ulcers because their work kept them on their feet for hours at a time. Industrial accidents were common in the early textile factories since machinery was not fenced. Belts linking the steam engine to machines were particularly dangerous since any worker caught in them stood little chance of survival. Attempts by workers to clean machines in motion frequently resulted in serious accidents. In 1842 Manchester Infirmary treated 962 persons who had been injured by machinery.

The health of textile workers suffered not only from bad working conditions but also from bad living conditions. Owing to the rapid expansion of manufactures and the growth of population during the industrial revolution it was impossible to provide proper accommodation for the workers who streamed into the towns. In the first half of the nineteenth century Manchester's population rose from 75.000 to 300.000, while that of Saint-Etienne increased from 16.000 to 56.000. Some operatives could not find accommodation near their work and had to walk 4 or 5 miles daily in all weathers³⁸. Hand loom weavers trudged long distances to a warehouse to collect yarn or to deliver cloth³⁹.

The accommodation rented by textile operatives – whether near their work or not – was often such as to provide few home comforts. In the working class quarters of the great textile centres the operatives lived in back to back houses, tenements, and even in attics, cellars, and outhouses. Little Ireland in Manchester⁴⁰, the rue Etagues in Lille, Martainville in Rouen, Saint-Georges and Croix Rousse in Lyons, and the Voigtland in Berlin were slums in which the inhabitants led a wretched existence. Large families were crammed into one or two small rooms. Sanitary arrangements were deplorable since one outdoor privy and one outdoor water tap might serve the needs of as many as 20 or 30 families.

Dr. Villermé wrote in 1840 that in Mulhouse and Dornach he had visited houses in which two families slept each in a corner, on straw, thrown on flagstones, and kept in place by two planks. Some rags, and often a kind of feather mattress was all that covered the straw. Moreover, a single wretched truckle-bed for all the family, a small stove which was used in the kitchen as a heater, a chest or large box serving as a cupboard, a table, two or

37 Friedrich Engels, *Die Lage der arbeitenden Klasse in England*, introduced by W. O. Henderson, Hannover 1965, p. 166.

38 Dr. Villermé, discussing the condition of the textile workers of Mulhouse in 1840 wrote that the poorest operatives had been forced to live a league (2.7 miles), a league and a half (4 miles), or even further, outside the town, and consequently to make journeys daily in the morning and the evening to and from work: See L. R. Villermé, *op. cit.*, Vol. I, p. 24.

39 »Oftmals bin ich im Winter solchen Armen begegnet, die in dem schrecklichsten Wetter, hungrig und frierend, viele Meilen weit ein fertig gewordenes Stück zum Fabrikanten trugen«. (Wilhelm Wolff, *Das Elend und der Aufruhr in Schlesien*, in: Püttmanns Deutsches Bürgerbuch, 1845, reprinted in: Carl Jantke and Dietrich Hilger (Ed.), *Die Eigentumslosen*, Freiburg/München 1965, p. 164).

40 Little Ireland lay between Oxford Road and the River Medlock.

three chairs, a bench, and a few items of pottery were usually the only furniture present in the room of the spinners and weavers⁴¹. At the same time Buret declared that it was in the town of Lille that poverty had reached its nadir in France. There thousands of people had plumbed the lowest depths of misery and degradation. In a word they had sunk to the level of the Irish⁴². Bettina von Arnim's account of the Voigtland in Berlin and Wilhelm Wolff's description of the homeless in Breslau in the 1840s suggest that the living conditions of textile workers in Germany were no better than in England or France.

A few years later Engels examined the working class districts of Manchester which was then the centre of the greatest region for the manufacture of cotton in the world. His description of the property on the banks of the River Irk was typical of his account of the Manchester slums. Engels wrote: »Der erste Hof unterhalb Ducie Bridge heißt Allen's Court, und war zur Cholerazeit in einem solchen Zustande, daß die Gesundheitspolizei ihn ausräumen, fegen und mit Chlor ausräuchern ließ; Dr. Kay gibt in einer Broschüre⁴³ eine schreckenerregende Beschreibung von der damaligen Lage dieses Hofes. Seitdem scheint er theilweise abgebrochen und neu erbaut worden zu sein — von Ducie Bridge herab sieht man wenigstens noch mehrere Mauerruinen und hohe Schutthaufen neben einigen Häusern neuern Baues. Die Aussicht von dieser Brücke — zartfühlender Weise von einer mannshohen gemauerten Brustwehr den kleinern Sterblichen verhüllt — ist überhaupt charakteristisch für den ganzen Bezirk. In der Tiefe fließt oder vielmehr stagniert der Irk, ein schmaler, pechschwarzer, stinkender Fluß, voll Unrath und Abfall, den er ans rechte, flachere Ufer anspült; [...] Oberhalb der Brücke stehen hohe Gerbereien, weiter hinauf Färbereien, Knochenmühlen und Gaswerke, deren Abflüsse und Abfälle sammt und sonders in den Irk wandern, der außerdem noch den Inhalt der anschließenden Kloaken und Abtritte aufnimmt. [...] ein Haus steht immer dicht hinter dem andern, und wegen der Steigerung des Ufers sieht man von jedem ein Stück — alle schwarz geraucht, bröckelig, alt, mit zerbrochenen Fensterscheiben und Fensterrahmen. Den Hintergrund bilden kaserenartige, alte Fabrikgebäude. — Auf dem rechten, flachern Ufer steht eine lange Reihe Häuser und Fabriken — gleich das zweite Haus ist eine Ruine ohne Dach, mit Schutt angefüllt, und das dritte steht so niedrig, daß das unterste Stockwerk unbewohnbar und in Folge dessen ohne Fenster und Thüren ist. [...]«⁴⁴.

In the textile towns private builders hastily erected jerry built houses, sometimes on unsuitable sites. They crammed as many cottages or tenements as possible into a limited space. Millowners with factories in rural districts often built cottages for their workers because if they had not done so they might have been short of labour. They had nothing

41 L. R. Villermé, op. cit., Vol. I, pp. 24 – 28.

42 Eugène Buret, *De la misère des classes laborieuses en Angleterre et en France*, two volumes, Paris 1840, Vol. I, p. 345. For the cellar dwellings of Lille see L. R. Villermé, op. cit., Vol. I, pp. 82 – 83 and Victor Hugo's *Châtiments*:

»Caves de Lille! on ment sous vos plafonds de pierre!
J'ai vu, vu de mes yeux pleurant sous ma paupière
Râler l'aieul flétri
La fille aux yeux hazards de des cheveux vêtue
Et l'enfant spectre an sein de la mère statue!
O Dante Alighieri

C'est decès douleurs-làque sortent vos richesses,
Princes! Ces dénouements nourrissent vos largesses [...]

43 James Phillips Kay, *The Moral and Physical Condition of the Working Classes employed in the Cotton Manufacture in Manchester*, second edition, London 1832.

44 F. Engels, *Die Lage der arbeitenden Klasse in England*, pp. 50 – 51.

to lose since they were sure of their rents — deducted from wages — and their properties were always occupied. Some workers' estates, built by millowners, became the nucleus of new industrial towns. For the textile workers the drawbacks of renting a tied cottage were as serious as those experienced by farm labourers and miners, since the loss of a job meant the loss of a dwelling.

The insanitary state of the industrial towns, the wretched accommodation and the unhealthy conditions in the factories undermined the constitution of the worker. In countries with conscript armies the authorities found that recruits from manufacturing towns were less healthy than those from rural districts. In Prussia Lieutenant General von Horn complained in 1828 that the industrial districts failed to supply their quota of men to the army as so many did not have the required standard of physical fitness. He thought that one reason for this was that some of them had worked on night shifts in factories at an early age⁴⁵. In France, a little later, it was reported that twice as many young men were rejected by the army on medical grounds from predominantly manufacturing Departments as from agricultural Departments⁴⁶.

Owing to their weak constitutions the textile workers soon fell victims to the epidemics of infectious diseases which swept Europe in the nineteenth century. Between 1830 and 1890 Europe suffered from six major cholera epidemics which caused half a million deaths in 1832, a million and a quarter in 1849 and over a million in 1854. Typhus, typhoid, diphtheria, smallpox, consumption, and influenza were other diseases which took a heavy toll of the industrial population.

Epidemics struck the rich as well as the poor, the millowner as well as the operative, and ruling classes came to realise that only if the slums in the manufacturing towns were cleared away could the ravages of infectious diseases be arrested. Sanitary arrangements and water supplies were improved, roads were paved and cleaned, and open spaces were provided for recreation. Measures of this kind, coupled with advances in medicine and the provision of more hospitals and dispensaries gradually brought about an improvement in the health of the workers. In Germany the establishment of state schemes for compulsory insurance against sickness and accidents in the 1880s was a notable landmark in the provision of health services for the workers.

But progress was slow. Sometimes it was found that when one slum had been pulled down, another took its place. In 1872 Engels wrote that Little Ireland in Manchester, which he had described in 1845, had been cleared to make way for a railway station. »Nun erfolgt im verflossenen Sommer eine gewaltige Überschwemmung [. . .]. Da findet sich denn, daß Klein-Irland keineswegs beseitigt, sondern bloß von der Südseite von Oxford Road nach der Nordseite verlegt ist und noch immer floriert«⁴⁷. Charles Street, Brook Street, and Squire's Court were as depressing a slum in 1872 as Little Ireland had been in 1845.

The long hours worked in the early textile mills coupled with the unsatisfactory housing conditions of the poorer paid operatives were factors which encouraged intemperance. All observers of large centres of textile manufactures in the period of industrialisation were

⁴⁵ The King of Prussia, on reading von Horn's report, immediately issued an order to his Ministers von Altenstein and von Schuckmann, condemning the night work of children but it was not until 1839 that an edict was issued prohibiting the employment of children under 9 in factories or mines: see *G. K. Anton*, op. cit., ch. 6.

⁴⁶ *H. Rigaudias-Weiss*, op. cit., p. 70.

⁴⁷ *F. Engels*, *Zur Wohnungsfrage*, MEW, Vol. 18, p. 261.

agreed that this was one of the most serious social problems of the day. Faucher, writing in 1844, stated that in Manchester the public houses were open the earliest in the morning, and close the latest at night. »From 5 or 6 a. m. the operatives of both sexes, visited the dram-shops before going to labour. One should think that the manufacturers themselves encouraged this vice of drunkenness; for it was the public houses that many of them distributed wages to their hands; add to which, the payment was made upon the Saturday night, at a time when being at leisure, the operative yielded most easily to the temptations of drink«⁴⁸.

It has been seen that the wages of textile operatives varied according to their skill and responsibilities. They varied from country to country, from district to district, and even from factory to factory. In the Lancashire cotton industry millowners and operatives agreed on the establishment of local piecework rates in the second half of the nineteenth century. Among the earliest were the Blackburn weaving list of 1853 and the Bolton self-actor spinning list of 1858. Agreement was reached on a uniform weaving list for Lancashire in 1892⁴⁹. In Germany wage lists agreed between employers and operatives were rare in the cotton industry before 1914. Such lists were established in a Mulhouse spinning mill in 1906, in the weaving and dyeing factories of Gera and Meerane, and in the factories at Göppingen making heavy coloured cotton cloth⁵⁰. In France it was reported in 1921 that »there is no uniformity of the piece rates for the same work as in Lancashire. Each spinner and manufacturer is at liberty to draw up his own list, and so it comes about that, in the same town and district, firms can be found paying rates which sometimes differ by as much as 20 per cent for the same class of labour«⁵¹.

Wages were generally calculated on a piecework basis and »average weekly earnings« were calculated on the assumption that an operative worked the full number of hours customary at the time and lost no money through deductions from his wages. But the contents of a workers' pay packet in any particular week might be very different from the »average weekly earnings« of all operatives. Wages might be increased by working overtime or they might be reduced by various deductions.

Workers were punished for breaches of factory discipline by having their wages reduced by fines. In the Strutts' mills fines were imposed for over 100 different offences between 1805 and 1813. The main offences were absence from work without leave, the theft of mill property, the destruction or damage of mill property, the failure to work as required, the failure to comply with mill discipline, and misconduct outside working hours. Offences against factory discipline included »calling through windows to some soldiers«, »throwing a bobbinet at F. Shipton«, »striking T. Ride on the nose«, »striking T. Hall with a brush«, »terrifying S. Pearson with her ugly face«, »throwing water on Ann Gregory very frequently« and »sending for ale into the room«. Misconduct outside working hours included »putting Josh Hayne's dog into a bucket of hot water«⁵².

48 *Léon Faucher*, op. cit., p. 51.

49 *G. H. Wood*, op. cit., pp. 1-2.

50 *Richard Martin Rudolph Dehn*, *The German Cotton Industry*, Manchester 1913, pp. 75-76. See also *Heinrich Herkner*, *Die oberelsässische Baumwollenindustrie und ihre Arbeiter*, Straßburg 1887; *Gerhard von Schulze-Gaevernitz*, *Der Großbetrieb, ein wirtschaftlicher und sozialer Fortschritt*, Leipzig 1892; *Wilhelm Lochmüller*, *Zur Entwicklung der Baumwollindustrie in Deutschland*, Jena 1906, pp. 71-74.

51 *Robert Blair Forrester*, *The Cotton Industry in France*, London/New York 1921, p. 85.

52 *R. S. Fitton and Arthur P. Wadsworth*, *The Strutts and the Arkwrights, 1758-1830*, Manchester 1958, pp. 234-37.

In the 1840s in Manchester weavers were fined 3 d per loom for being more than 10 minutes late or for leaving a work room without permission when the engine was working. A weaver who forgot to bring his shears to work was fined a penny a day. A warehouse supervisor was dismissed for failing to levy sufficient fines and so causing his employer a »loss« of £ 5 a week⁵³. At the Phoenix Mill in Manchester »[wird] jedem, der drei Minuten zu spät kommt, eine Viertelstunde, und jedem, der zwanzig Minuten zu spät kommt, ein Vierteltag am Lohn abgehalten [...]». Wer vor dem Frühstück ganz wegbleibt, 1 sh. am Montag und 6 d. an jedem anderen Tage«⁵⁴. The same system of fines operated on the Continent. In Germany the regulations of Oppen's calico printworks in Berlin show that in 1843 fines were imposed for smoking, drinking, or singing as well as for unsatisfactory work and damage to equipment⁵⁵. Thirty years later fines were being imposed in the cotton mill of H. Schmieder & Son of Meerane in Saxony for arriving late, talking at work, leaving toilets dirty, spoiling yarn, or failing to clean spindles⁵⁶. But some employers recognised the drawbacks of fines, particularly when levied on women and children. A leading Lancashire cotton manufacturer declared that fines were part of a bad system, and this continual interference with their wages soured their temper without correcting them⁵⁷. Deductions from a worker's wages might also be made for rent (if the operative lived in a tied cottage), for the repayment of any loan which the millowner had made to the worker, and for subscriptions to sick clubs organised by the employer.

The truck system — the payment of wages in kind — was another method by which certain millowners reduced workers' wages. It has been vividly described in Disraeli's *Sybil*. Truck had been a well established practice as early as the sixteenth century at the time of the domestic system and during the industrial revolution it had a new lease of life. In rural areas, in particular, millowners often sold provisions to their operatives and deducted the cost from the workers' wages or they paid their workers in vouchers to be exchanged for goods in the factory store (tommy shop). Workers complained that the prices charged in the tommy shops were higher than those prevailing in shops in the nearest town and that goods of inferior quality were sold. In England a number of statutes — one of the earliest had been passed in 1549 — forbade the payment of wages in kind but they were largely ignored. In 1831 a new Truck Act was passed in the hope of forcing employers to pay wages in cash. But the truck system survived in country districts for some time⁵⁸. In 1844 a Yorkshire woollen manufacturer was still paying wages to hand loom weavers partly in goods⁵⁹. And in 1853 J. H. Burton's investigations in Scotland revealed that the law had not yet stamped out the practice of paying wages in kind. In 1863, however, it was reported that the truck system no longer existed in the Lancashire cotton mills⁶⁰.

53 James Leach, *Stubborn Facts from the Factories by a Manchester Operative*, London 1844, pp. 13–15. The pamphlet was published anonymously. Leach stated that pregnant women were fined 6 d for sitting down when at work.

54 F. Engels, *Die Lage der arbeitenden Klasse in England*, pp. 181–82.

55 Lothar Baar, *Die Berliner Industrie in der industriellen Revolution*, Berlin 1966, pp. 218–20.

56 J. Kuczynski, *Die Geschichte der Lage der Arbeiter unter dem Kapitalismus*, Part I, Vol. 3, Berlin 1962, pp. 282–83.

57 Léon Faucher, *op. cit.*, p. 111.

58 See George W. Hilton, *The Truck System*, Cambridge 1960.

59 Northern Star, April 27, 1844 (article on »Truckism«).

60 Louis Reybaud, *op. cit.*, p. 368. It appears that in France the truck system was not finally abolished until 1910: see J. Kuczynski, *A Short History of Labour Conditions under Industrial Capitalism*, Vol. IV: France 1700 to the Present Day, London 1946, p. 189.

In Prussia the payment of wages in kind was common in some provinces but not in others⁶¹. In the early nineteenth century there were many complaints concerning the truck system from textile workers in Elberfeld and Barmen as well as from cutlery workers in Solingen. Those who opposed the truck system argued that since the penal code (*Landrecht*) prohibited truck in the mining industry it was reasonable to suggest that payment of wages in kind should also be prohibited in other industries. A campaign against truck was mounted by Peter Knecht and Wilhelm Jellinghausen in 1833 and ten years later they gained the support of the Rhenish provincial assembly. In Lennep the majority of the cloth manufacturers, who paid their workers in cash, agreed to boycott eight small firms which paid wages in kind. The threat was sufficient to end the truck system in Lennep⁶². The abolition of truck was debated by the King and his ministers for some 20 years but it was not until 1848 that payment of wages in kind was prohibited by a revised industrial code, which was confirmed by the Prussian parliament in the following year. In the Kingdom of Saxony truck was prohibited in 1849.

If the weekly pay packet of a textile operative could be reduced by fines and by the payment of wages in kind, his annual income might be reduced if the mill were closed or if it worked short time for any reason. Work in water driven mills had to stop if there was flooding or a shortage of water. Recessions in trade, which affected the whole economy, would lead to short time or unemployment in textile factories. In England there was a commercial crisis in 1837. »Many business firms went bankrupt, thousands of workers were suddenly thrown out of employment, and severe distress was reported from all the manufacturing districts. The Lancashire cotton trade experienced the full force of this renewed commercial depression [...]«⁶³. A few years later in 1842 there was another crisis in the industrial regions. Its effects upon Lancashire were described by Engels who arrived in Manchester at the end of the year. He wrote that many factories had closed and that many unemployed operatives were standing at street corners⁶⁴. A committee of the Anti-Corn Law League reported in 1843 that there had been a great increase in the number of persons applying for poor relief and that there had been a sharp decline in the consumption of food — particularly meat — by the working classes⁶⁵.

There were also crises which were confined to particular branches of the textile industry. Workers in such luxury trades as the manufacture of silks, lace, and cambrics, suffered from sudden changes in fashion. The economy of Lyons, the main centre of silk manufacture in Europe, was notoriously unstable. The cotton industry suffered from its dependence upon a raw material which had to be imported. The most striking example of this was the cotton famine of 1861–65. During the American civil war the ports of the Confederacy were blockaded and very little raw cotton reached Europe. Only limited success attended attempts to replace American cotton by Egyptian or Indian cotton. Many cotton mills in Britain and on the Continent closed down or worked short time and this led to serious distress in the centres of cotton manufacture.

In Lancashire and Cheshire the closure of factories threw tens of thousands of operatives out of work and by 1862 a quarter of a million were being relieved by the poor law

61 See G. K. Anton, op. cit., pp. 157–186 and L. Puppke, op. cit., pp. 43–44 and 49–50.

62 G. K. Anton, op. cit., pp. 170–71.

63 Arthur Redford, *Manchester Merchants and Foreign Trade, 1794–1858*, Manchester 1934, p. 81.

64 F. Engels, *Die Lage der arbeitenden Klasse in England*, pp. 89–91. See also L. Faucher, op. cit., p. 58.

65 Manchester Guardian, February 4, 1843.

authorities. Two national and many local funds were established and relief committees distributed over £ 1 million to unemployed cotton operatives. The Public Works Act of 1863 enabled local authorities to borrow money in the security of the rates to start public works on which operatives could be employed but only about 4,000 of them secured jobs under this scheme. In France over 100,000 operatives were out of work in Normandy and depended upon poor law relief and private charity. Over a million francs were distributed in cash and in kind between December 1861 and July 1863. In Alsace the crisis was not so severe, though by the spring of 1863 the production of the cotton mills of Mulhouse and Colmar was only about three quarters of the normal output. In Germany the Düsseldorf chamber of commerce reported in 1864 that almost all the cotton spinning and weaving establishments in the Rhineland and Westphalia showed very little activity; many worked only part time and some closed down altogether. In Gladbach the severe crisis led to mills being run at a loss⁶⁶. There was also distress in the Kingdom and the Province of Saxony, in Silesia, and in Berlin where 5,000 operatives were unemployed. In South Germany and in Switzerland, however, there appears to have been no serious distress⁶⁷. Other textile industries, however, derived some advantages from the misfortunes of the cotton industry since the demand for woollen and linen products rose sharply as the output of the cotton factories fell.

While the textile workers could lose some of their income through fines, truck, short time, or unemployment they had few opportunities of supplementing their wages. The rural domestic worker who had a smallholding had an additional source of income which the town factory worker did not possess. The factory day was so long that operatives were rarely in a position to earn more money by working overtime. Poorly paid operatives were strongly tempted to steal from their employers. Léon Faucher declared that the purloining of raw material was universally practised in the manufactories of Manchester, just as at Lille, Reims, and at Lyons⁶⁸. Young women who worked in textile factories could secure an additional income if they were prepared to become prostitutes. In 1844 it was stated that in Manchester there was a large number of females who work in factories, and also of dressmakers, umbrella-stickers, stock, cravat, and shirt sempstresses etc. who resort to this practice, to eke out the deficiencies of their ill-remunerated labour⁶⁹.

For many textile workers the wages of the individual operative were less important than the weekly earnings of the whole family. In the 1830s an overlooker or a self-actor mule spinner with a wife, a young son, and a little girl who were all employed in a Lancashire cotton mill might have had a family income of over £ 2 a week. Such a family wage would compare very favourably with the income of an agricultural labourer, a private soldier, a domestic servant, a curate or a clerk.

Some textile operatives were more fortunate than others with regard to their working conditions, housing, health and wages. Many enquiries into conditions in textile mills and

66 *Jahresberichte der Handelskammern und kaufmännischen Korporationen des Preussischen Staates*, 1864, pp. 346 and 359.

67 For the cotton famine in Lancashire see R. A. Arnold, *op. cit.*, John Watts, *The Facts of the Cotton Famine*, London 1866; and W. O. Henderson, *The Lancashire Cotton Famine 1861 - 1865*, new edition, Manchester and New York 1969. For the cotton famine on the Continent see W. O. Henderson, *op. cit.*, pp. 132 - 143 and P. J. Hutte, *La famine de coton en Westphalie 1861 - 65*, in: *Revue d'Histoire économique et sociale*, 1932, pp. 392 - 405.

68 Léon Faucher, *op. cit.*, p. 39.

69 *Ibid.*, p. 42 (note by J. P. Culverwell).

manufacturing towns during the period of industrialisation drew attention to the unhappy fate of the least skilled and therefore lowest paid workers and to the exploitation of women and children. There were, however, enlightened millowners who were concerned for the welfare of their workers. It was a silk and velvet manufacturer, von Diergardt of Viersen in the Rhineland, who was awarded the first prize for good industrial relations at the Paris Exhibition of 1867⁷⁰. At New Lanark in Scotland Robert Owen employed neither pauper apprentices nor children under the age of 10. Hours of work were reduced to 10½. Full employment was maintained and when no work was available for four months in 1806 the workers' wages were paid in full. Robert Owen provided houses for his workers at a modest rent, maintained a contributory sickness and superannuation fund, and introduced free medical services. He opened a shop to sell food, clothing, and household goods to his operatives at cost price. He set up a savings bank and provided social and educational facilities for the young people working in his mill. It is hardly surprising that New Lanark attracted a host of distinguished visitors⁷¹.

In the 1840s the factories of several millowners in the northern industrial districts in England were relatively free from the abuses condemned by critics of the factory system. At Hyde, for example, Thomas Ashton built 300 houses for his workers, charging rents of 3/- or 3/6d a week. »Each house contained upon the ground floor, a sitting room, a kitchen, and a back yard, and above are two or three bedrooms. The proprietor furnished, at his own charge, water to the houses, kept them in good repair, and paid the local rates. At all hours of the day there was warm water and a fire in each house. Everywhere was to be observed a cleanliness which bespoke order and comfort«⁷². Ashton built a school house and a chapel and the firm provided a day school, a Sunday school, and evening classes. The operatives working for the Ashworth brothers at Turton and Egerton lived in houses built by the millowner. Nothing could be more commodious than these cottages, in which the interior appearance invites to order and cleanliness. A cast iron oven, which served to bake bread as well as other provisions, was attached to the fireplace of every kitchen; the pantry was spacious enough to contain all sorts of provisions, and the upper storey often contained four bedrooms⁷³. Gaskell wrote that »an inspection of Belper, Cromford, Duckinfield, Staley Bridge, the villages and hamlets around Oldham, Bolton, Manchester, Stockport, Preston, Glasgow etc. will show many magnificent factories surrounded by ranges of cottages, often exhibiting signs of comfort and cleanliness highly honourable to the proprietor and the occupants. These cottages are generally the property of the millowner and the occupants are universally his dependants«⁷⁴.

In France and Germany there appear to have been fewer factory villages in the textile districts than in England. Engels declared that in those countries »Die große Mehrzahl der ländlichen Industriellen läßt ihre Arbeiter in Hitze, Schnee und Regen meilenweit morgens zur Fabrik und abends wieder nach Hause traben. Dies ist besonders in gebirgigen Gegenden der Fall, in den französischen und Elsasser Vogesen, wie an der Wupper, Sieg, Agger,

70 Michael Z. Brooke, *Le Play: Engineer and Social Scientist*, Harlow 1970, p. 64.

71 For books published to mark the bicentenary of the birth of Robert Owen in 1771 see the *Archiv für Sozialgeschichte*, Vol. XII, pp. 725 – 27.

72 Léon Faucher, *op. cit.*, p. 106.

73 *Ibid.*, p. 112.

74 Peter Gaskell, *Artisans and Machinery*, London 1836, p. 294.

Leine und an anderen rheinisch-westfälischen Flüssen. Im Erzgebirge wird's nicht besser sein. Es ist dieselbe kleinliche Knickerei bei Deutschen wie bei Franzosen«⁷⁵.

But some millowners in the Rhineland and Westphalia did provide accommodation for some of their operatives. At Kromford near Ratingen the proprietor of one of Germany's first mechanical spinning mills built some workers' houses in the 1820s and Kelleter of Aachen constructed a three storey tenement for 12 workers' families. When Hermann Delius established a spinning mill at Ravensberg in 1854 he was disappointed when many local hand spinners migrated to the Ruhr rather than work in his factory. He secured operatives from England, Silesia, and Bohemia and found it necessary to build houses for them. The firm of Schoeller, Mevissen, and Büchler, which operated a flax spinning mill in Düren, opened a hostel for 70 female operatives in 1859, which was the beginning of an extensive building programme⁷⁶.

In France the establishment of the *cité ouvrier* in Mulhouse was a striking example of co-operation between the state, employers, and workers to provide houses for textile operatives. The scheme was originated by Jean Dollfus, a leading cotton manufacturer in the city. He formed a company with an initial capital of 600,000 francs, half of which was subscribed by the state. In 14 years 800 cottages were built. A deposit of between 300 francs and 400 francs had to be paid and the balance was paid off in 13 to 15 years in monthly instalments. Only the better paid operatives could save enough money to pay the deposit and to maintain their monthly payments regularly. Included in the *cité ouvrier* were a tenement house with 17 furnished rooms for single workers, a large hall, a free medical centre, a communal wash-house, a baker's shop, and a restaurant⁷⁷.

COLLECTIVE BARGAINING BY VIOLENCE

In the eighteenth century the use of violence by workers to coerce their employers or the government occurred fairly frequently throughout Europe. Riots were particularly common when bread was in short supply. They also took place when workers were in dispute with their masters. An appreciation of the danger to their workshops, materials, and homes made employers hesitate to resist the demands of their workers. Machine breaking was one aspect of the violent reaction of workers to attempts to lower wages or to ignore old established trade customs. There were two types of machine wrecking. One was the destruction of machines simply to bring pressure to bear upon employers. Those who indulged in machine breaking of this kind might not be opposed to the use of machinery. The other type of machine wrecking was carried out by workers who feared — not without cause — that the introduction of machines might cost them their jobs. Their fears were shared by no less an authority than David Ricardo who wrote that »the opinion entertained by the labouring classes, that the employment of machinery is frequently detrimental to their interests, is not founded on prejudice and error, but is conformable to the correct principles of political economy«⁷⁸.

75 F. Engels, *Zur Wohnungsfrage*, MEW, Vol. 18, p. 248.

76 L. Puppke, *op. cit.*, pp. 188–212.

77 Charles Thierry-Mieg, *Rapport sur les forces morales et matérielles de l'industrie du Haut-Rhin . . . 1851–61, 1862*, in: Louis Reybaud, *op. cit.*, pp. 447–50.

78 David Ricardo, *On the Principles of Political Economy and Taxation*, third edition, London 1821, Everyman edition, 1926, p. 267.

At the time of the industrial revolution in England there were militant workers who used violence against their employers. It was a traditional method of bringing pressure to bear upon employers and men hoped that it would be as effective against the new factory owners as it had sometimes been against their masters in the days of the domestic system. In 1776 Adam Smith declared that some workers perpetrated »the most shocking violence and outrage«. »They are desperate and act with the folly and extravagance of desperate men, who must either starve or frighten their masters into an immediate compliance of their demands«. He was mistaken in supposing that rioters »very seldom derive any advantage from the violence of those tumultuous combinations«⁷⁹, for there were undoubtedly occasions on which employers were terrorised into complying with the demands of their workers.

The silk weavers of Spitalfields were a notoriously violent group of workers. In 1675 they rioted against machines and in the eighteenth century they attacked their masters and wrecked looms several times. In 1736 their anger was directed against Irish weavers who worked for less than the customary rate. In October 1769 the Spitalfields weavers destroyed looms and silks. »These riots were not suppressed without bloodshed, several soldiers, as well as some of the misguided weavers, being killed in the skirmishes«⁸⁰. In the Lancashire cotton towns the riots of 1779 were directed against jennies, carding engines, and twisting machines. Small spinning machines, with fewer than 24 spindles — generally installed in little workshops — were spared, but larger machines in big mills were destroyed. Rioting was severe in the Blackburn area and some years elapsed before the district recovered from the destruction of spinning machinery. Arkwright's mill at Birkacre (near Chorley) was destroyed and Peel's machinery at Oldham was dumped into a river. The distress in Lancashire at that time was of course not due solely to the introduction of machinery. During the war of American independence the markets for English cotton goods in the Mediterranean countries and in the Spanish colonies were lost while exports to the West Indies were much reduced. The riots in Lancashire were followed by disturbances in Yorkshire. An outbreak of violence in the West Riding in 1780 forced woollen manufacturers to give up for a time the introduction of shearing machines into their factories.

Some years later, in 1802–03, there was an epidemic of machine breaking in the woollen district on the borders of Wiltshire and Somerset. Nemnich, a German traveller who visited John Jones's mill at Staverton, reported in 1806 that the workmen looked upon all machinery as a deadly enemy and they tried to stifle it at birth. This could be done only by using violence. There were serious riots at Staverton, especially on the part of militant shearmen who formed a powerful combination and inflicted serious damage on the property of their masters⁸¹.

The most serious outbreak of machine breaking among textile workers was the Luddite movement of 1811–16, the origins of which were to be found in the grievances of the

79 Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776, Everyman edition, Vol. I, pp. 59–60.

80 *A Treatise on . . . the Silk Manufacture* (Cabinet Cyclopaedia, ed. by Dionysius Lardner, London 1831), p. 68.

81 Philipp Andreas Nemnich, *Neueste Reise durch England, Schottland und Irland*, Tübingen 1807, pp. 218–22 and K. G. Ponting, *The Wiltshire – Somerset Border Woollen Industry*, in: N. B. Harte and Kenneth G. Ponting (ed.), *Textile History and Economic History* (Julia de Lacy Mann Festschrift), 1973, p. 183.

framework knitters in the hosiery and lace trades in the counties of Nottingham and Leicester⁸². The production of stockings and lace was largely a cottage industry. It employed about 50.000 knitters generally working for capitalist masters who owned the frames and supplied the workers with yarn. The hosiery workers paid a rent for the use of the frame and received wages at piecework rates for the stockings which they knitted. In 1778–79 there had been an earlier outbreak of violence among the knitters of the east Midlands. The knitters had failed to persuade Parliament to fix wages by statute but they had succeeded in forcing their employers to agree to a new list of piecework rates.

At the height of the economic crisis brought about by the Napoleonic wars — the imposition of the Continental System and the Orders in Council — there was serious distress among the framework knitters. Fashions were changing and there was a decline in the demand for expensive hosiery of high quality. This led some manufacturers to produce a cheaper type of stocking known as »cut up work«, and they reduced piece work rates so as to cut production costs. The framework knitters petitioned Parliament in vain for an Act to guarantee the correct measurement of their work and to fix their rates of pay. The more militant workers refused to put their faith in peaceful petitions and in March 1811 they embarked upon a ruthless campaign of wrecking wide stocking frames and destroying the »cut up« hosiery made on them.

The assaults upon wide stocking frames were launched with remarkable efficiency. The midnight sorties of the machine wreckers were carried out with military precision. Groups of about 50 followers of the mysterious »General Ludd« moved swiftly through the countryside, destroying wide stocking frames in every village through which they passed. By daybreak they had disappeared and — although troops were sent to help the civilian authorities — it proved to be very difficult to catch the machine breakers. Only one Luddite, a youth named Wesley, was killed during the attacks on the stocking frames. In 12 months about a thousand of these machines were destroyed.

In 1812 Parliament strengthened the hands of the authorities in dealing with the Luddites. Some of the machine workers were eventually brought to book. In March 1812 nine of them stood trial at Nottingham assizes, seven being convicted on the evidence of the other two. They were sentenced to transportation.

But this did not prevent the Luddite movement from spreading to the woollen districts of Yorkshire and the cotton towns of Lancashire. In the West Riding the shear-men (croppers) feared that the increased use of gig mills and shearing frames would cost them their jobs. They petitioned Parliament to enforce an Act of Edward VI's reign prohibiting the use of such machines but Parliament not merely rejected their demand but repealed the law in question. While the framework knitters of Nottingham were not opposed to machines but objected to the way in which their masters were using wide frames, the Yorkshire shear-men were determined to destroy the mechanical cutters that threatened their jobs. One night

82 For the Luddites see *F. Peel*, *The Risings of the Luddites, Chartists and Plugdrawers*, *Heckmondwike* 1888; *John L. and Barbara Hammond*, *The Skilled Labourer*, London/New York 1919, ch. 9–11; *F. O. Darvell*, *Popular Disturbance and Public Order in Regency England*, 1934; *Reginald J. White*, *Waterloo to Peterloo*, London 1963; *Eric J. Hobsbawm*, *Labouring Men*, ch. 2; *Malcolm I. Thomis*, *The Luddites*, Hamden, Conn., 1970 and: *The Town Labourer and the Industrial Revolution*, London 1974; *J. Foster*, *Class Struggle and the Industrial Revolution*, 1974; *E. P. Thompson*, *The Making of the English Working Class*, West Drayton 1975, ch. 14; and *Michael Vester*, *Die Entstehung des Proletariats als Lernprozeß*, Frankfurt 1970, pp. 147–151.

a group of Luddites attacked William Cartwright's mill at Liversage near Huddersfield. In the ensuing affray – vividly described by Charlotte Brontë in *Shirley* – the assailants were repulsed and two of them were fatally wounded. A subsequent attempt upon Cartwright's life failed. His neighbour, William Horsfall, was not so fortunate. Horsfall had installed shearing frames at Ottiwells Mill at Marsden and, on his way home from Huddersfield on April 28, 1812 he was attacked and murdered. Six months elapsed before his murderers were caught. Two years later it was reported that no woollen manufacturer in Leeds dared to lay off hand-shearers by installing mechanical cutters⁸³.

In Lancashire – although there were only 2.400 power looms in the county compared with 200.000 hand looms – the Luddites destroyed power looms and erected forges to make pikes. On April 20 a mob attacked Burton's power loom factory at Middleton and five rioters were killed in the affray. Baulked of its prey the crowd attacked Burton's home but without success. On April 24 at West Houghton a mob destroyed Rowe and Duncough's weaving shed and power looms. At the next assizes eight of the rioters – one a boy of 16 – were sent to the gallows and 17 were transported for seven years.

In July 1812 secret committees of both Houses of Parliament enquired into the unrest in many of the industrial districts and reported that there was in existence a widespread revolutionary movement organised on military lines. New powers were given to magistrates to maintain law and order. In January 1813 several Luddites, including those involved in the attacks on Cartwright and Horsfall, were tried at York, 17 being convicted and hanged. The presence of 12.000 troops in the disturbed districts – a larger army than Wellington had taken to the Peninsula in 1808 – discouraged the machine breakers and the country enjoyed a brief respite from violence. But in the summer of 1816 the Luddites were on the march again. At Loughborough in Leicestershire they destroyed over 50 frames at a mill owned by John Heathcoat, the inventor of the bobbin net machine. Ten of the rioters were caught and eight of them were executed. In the following year the abortive Pentrich rising in Derbyshire was led by Jeremiah Brandreth, a former framework knitter who had probably taken part in machine wrecking in the past⁸⁴. The framework knitters now attempted to get their way by using the strike weapon. Some 8.000 downed tools in 1817. Two years later, when a fresh attempt to persuade Parliament to ban »cut up work« failed, there was another strike. But by this time Luddism was a spent force.

For many years after the collapse of the Luddite movement there were only isolated cases of violence on the part of textile workers. In 1826 there was a depression in the cotton

83 May, a Prussian factory inspector, who visited England in 1814 wrote: »Rauch- und Schermaschinen hat man in Yorkshire nur in zwei oder drei der großen Fabriken, sie werden aber sehr geheim gehalten und niemandem gezeigt. Dies geschieht nicht sowohl, um die Nachahmung derselben zu verhindern, als vielmehr aus Furcht vor den sehr zahlreichen Tuchscherern, welche sich noch vor einigen Jahren außerordentlich gegen den Gebrauch der Maschinen gesetzt haben. Wo sie dergleichen Maschinen vermuteten, sind sie in die Fabriken eingedrungen und haben alles zerstört. An anderen Orten, wo man sich zurückhielt, haben sie nachher den Fabrikherrn aufgelauert und selbige mißhandelt, auch einen getötet, bis endlich durch Zusammentreten der sämtlichen Einwohner dem Unwesen gesteuert worden ist. Dieser Zustand hat indessen eine solche Furcht zurückgelassen, daß zur Zeit meiner Anwesenheit zu Leeds noch keiner von den dortigen Entrepreneurs es wagen wollte, Maschinen anzuschaffen und die Tuchscherer abzudancken« (Report printed in *J. Kuczynski, Die Geschichte der Lage der Arbeiter unter dem Kapitalismus*, Vol. XXIII, Berlin 1964, p. 176).

84 See *John Neal, The Pentrich Revolution*, Derby 1895, and *R. J. White*, op. cit., ch. 14.

industry which led to severe distress among the Lancashire operatives. Riots occurred during which several cotton mills were attacked and hundreds of power looms were destroyed⁸⁵. The employers complained to the government that »such a state of affairs would seem incredible under the rule of law«⁸⁶. In April 1829 there were riots at Macclesfield and Rochdale and a number of powerlooms were destroyed in Manchester. In Lancashire in December 1830 during a labour dispute M'Connel and Kennedy complained that their workers had been forcibly prevented from entering their cotton mill by »a body of about 200 ruffians«⁸⁷. In 1831 Thomas Ashton, the son of a leading cotton manufacturer in Hyde, was murdered. Eventually one of the three murderers, tempted by the offer of a reward, turned King's evidence and the other two were convicted and executed⁸⁸. In 1833 Shaw mill at Greenacres was burnt⁸⁹. In Glasgow in 1838 a secret committee, representing the local cotton operatives, organised attacks on the factories and homes of unpopular millowners and used violent means to intimidate blacklegs. The five leaders of the committee were caught and were sentenced to transportation⁹⁰. No wonder that in the 1830s there were millowners who would not appear before parliamentary committees for fear of reprisals from their workers.

In 1842 there was a fresh outbreak of violence in the cotton districts of Lancashire and Cheshire. The Plug Plot riots, however, were different from the earlier disturbances of 1811-16. The Luddites had been craftsmen who had destroyed hand-machines in small workshops, while the Plug Plot rioters were factory operatives who attacked large cotton mills. They did not wreck machines but merely stopped them from working by removing boiler plugs from steam engines, so cutting off the source of power.

85 *Arthur Redford*, *Manchester Merchants and Foreign Trade, 1794-1858*, Manchester 1934, p. 76. In April 1826 sixty powerlooms and a dressing machine were destroyed at Messrs Syke's cotton mill at Accrington. The rioters next broke 20 looms at Rough Hey and 80 more at White Ash. At Blackburn a rioter was killed by troops protecting a mill. On April 25 Messrs Turner's mills at Helmsford were saved by the intervention of the military. On the following day 200 looms were destroyed at Rawtenstall and Edenfield. In Ramsbottom four men and a woman were killed by troops defending mill property. Looms were also destroyed at Summerseat and Bacup. See *John Watts*, op. cit., pp. 30-32.

86 Memorial to Sir Robert Peel from John Lees and eight other firms, December 21, 1826 quoted in *J. Foster*, op. cit., p. 50. James Rowland, a leading Oldham cotton manufacturer wrote to Sir Robert Peel on January 21, 1826: »I am the owner of an extensive cotton spinning and manufacturing establishment in Oldham employing about three hundred hands in which I have embarked a heavy capital besides devoting the whole care and attention of myself and sons [...] and] respectfully entreat that some effectual means may be devised for our protection from violence - our very existence depends on the free and uncontrolled exercise of our trade without any restraint imposed by violence or mob government - in the prevalent state of affairs here neither our trade nor our property can be considered of any value whatsoever, saying nothing of our personal safety« (*J. Foster*, op. cit., p. 51).

87 M'Connel and Kennedy to George Gill, December 17, 1830 in *C. H. Lee*, *A Cotton Enterprise, 1795-1840. A History of M'Connel & Kennedy, Fine Cotton Spinners*, Manchester 1972, p. 121.

88 *Annual Register*, 1831, *Chronicle*, pp. 7-8 and 1834, *Chronicle*, pp. 290-96; and *F. Engels*, *Die Lage der arbeitenden Klasse in England*, 1845, Hannover 1965, pp. 223; and footnote by *W. O. Henderson* and *W. H. Chaloner* on p. 249 of their English translation of Engels's book.

89 *Manchester Guardian*, October 17, 1833.

90 For the Glasgow »thugs« see the *Annual Register*, 1838, *Chronicle*, pp. 6-12. *Thomas Carlyle* wrote: »What kind of »wild justice« must it be in the hearts of these men that prompts them, with cold deliberation, to doom their brother workman, as the deserter of his order and his order's cause, to die as a traitor and deserter; and have him executed, since not by any public judge and hangman, than by a private« (*Chartism*, 1839, p. 40).

The rioters were protesting against proposed wage reductions at a time of trade depression, unemployment, and short-time working. Following the example of Staffordshire miners — who had closed collieries by putting steam engines out of action — unruly mobs marched through many cotton towns in Lancashire and Cheshire in August 1842, forcing their way into factories and stopping production by removing boiler plugs. In Manchester troops assisted the police and special constables to quell the riots. The disorders spread as far north as Preston and as far south as Macclesfield but by early September the authorities had the situation in hand and most of the operatives were back at work. Only the power loom weavers in Manchester held out until the end of September. The rioters achieved their purpose since very few cuts in wages were made at this time⁹¹.

Workers on the Continent were as ready as those in Britain to use violence to intimidate their employers. As early as the seventeenth century hand loom weavers in Germany and Holland had forcibly resisted attempts to introduce a new loom to weave ribbons and braid. At the end of the eighteenth century there was still violent opposition to this machine. At Annaberg in the Erzgebirge in Saxony there were riots of apprentices in 1797 to prevent their masters from using the loom⁹². A few years before, in 1793, the depressed state of the linen industry in Silesia had led to riots in the mountain villages of the Riesengebirge.

In France on the eve of the revolution of 1789 mob violence was directed against new textile machines in various towns⁹³. Early in the nineteenth century the invention of the Jacquard silk loom provoked riots in Lyons. During the Restoration there were fresh outbreaks of machine wrecking. In February 1819 a hostile crowd attacked the waggons conveying shearing frames to the factory of Genten and Odoard in Vienne and in May 1821 some of Faulquier's shearing frames were thrown into the river at Gignac near Lodève. Machine breaking in France, however, was not so widespread as in England at this time and seems to have been largely confined to shearmen. In the 1830s, however, there were two insurrections in Lyons, the centre of the French silk industry. The hand loom weavers rioted in November 1831 to try to force their employers to honour a recently agreed tariff of piecework rates. For a few days the city was in the hands of some 30,000 armed insurgents. Then the violence subsided as quickly as it had arisen and when 20,000 soliders arrived to restore order they met with no opposition⁹⁴. In 1834 there

91 For the Plug Plot Riots see *John Wilson Croker's* anonymous article: Anti-Corn Law Agitation, in: *Quarterly Review*, December 1842; *G. Kitson Clark*, Hunger and Politics in 1842, in: *Journal of Modern History*, Vol. XV, No. 4, December 1953, pp. 355–74; and *A. G. Rose*, The Plug Plot Riots of 1842 in Lancashire and Cheshire, in: *Transactions of the Lancashire and Cheshire Antiquarian Society*, Vol. 68, 1957, pp. 75–112.

92 *Karl Marx*, *Das Kapital*, Vol. I, Berlin 1957, pp. 450–51. Marx wrote: »Diese Maschine, die soviel Lärm in der Welt gemacht hat, war in der Tat der Vorläufer der Spinn- und Webmaschinen, also der industriellen Revolution des 18. Jahrhunderts« (note 194). See also *R. Forberger*, op. cit., pp. 140–41.

93 For the French Luddites see *F. R. Manuel*, The Luddite Movement in France, in: *Journal of Modern History*, 1938, p. 180 et seq., and: L'introduction des machines en France et les ouvriers. La grève des tisserands de Lodève, in: *Revue d'histoire moderne*, New Series XVIII–XIX, 1935, pp. 209–225 and pp. 252–272 and documents in *Georges and Hubert Bourgin*, *Le régime d'industrie en France de 1814 à 1830*, 3 vols., 1912–41 (see references to Luddites in the index, Vol. III, p. 345).

94 For the rising of the Lyons silk weavers in 1831 see *Louis Blanc*, *Revolution française: Histoire de dix ans, 1830–1840*, 5 vols., Paris 1846, Vol. III, pp. 46–59; *F. Rude*, *Le mouvement ouvrier à Lyon de 1827 à 1832*, 1944, and *S. Pollard and C. Holmes*, op. cit., Vol. I, pp. 531–34.

was more trouble in Lyons. The rioters were protesting against a proposed law prohibiting the formation of associations even if they had fewer than 20 members. This would have outlawed their *Devoir Mutuel*, which was an early form of trade union. Within a week troops had restored law and order in the city. In the 1840s there were only occasional outbreaks of mob violence such as the destruction in Paris of 80 sewing machines belonging to their inventor Thimonnier (1841)⁹⁵.

During the Second Empire there was an outbreak of violence among the cotton workers of Roubaix. The cause of the trouble was an attempt on the part of some of the millowners to place their weavers in charge of two power looms instead of one. The local *chambre consultative* approved the change and announced its introduction in February 1867. When a weaver at Delatere's mill agreed to work two looms his fellow workers went on strike and they were soon followed by operatives in other factories in the district. The situation was aggravated by a move on the part of the millowners to increase the fines levied on workers for late attendance. The dispute came to a head on March 16 when 25,000 angry cotton workers took to the streets, attacked factories, and destroyed machinery and materials. Two mills were set on fire. The dwelling of one millowner (M. Scamps) was pillaged. The arrival of troops brought the riots in Roubaix to an end, though there was subsequently some outbreaks of violence in the surrounding district — at Watterlos for example. Within a week the workers gave way and most of them returned to work except some Belgians who had fled to their homes across the frontier⁹⁶.

In Germany there were disturbances in Eupen in 1821^{96a}, in Krefeld in 1828⁹⁷ and in Aachen in 1830⁹⁸. But the most serious riots were those which took place in Silesia in 1844. They were brought about by the depressed state of the linen hand loom weavers. The Silesian linen industry had recently declined since hand made linens could not compete successfully with Irish or Belgian linens produced in factories. Many of the weavers in Silesia were part time industrial workers who also cultivated smallholdings. Attempts to establish modern factories often failed because the peasant weavers refused to give up their smallholdings and become full time factory operatives. Moreover feudal institutions survived in Silesia at this time and peasant-weavers had to pay a »weaver's tax« to their feudal lord and to render labour services as well. The hostility of the weavers to their masters caused 5,000 of them to rise in revolt in 1844. Factories and warehouses were attacked, machinery and materials were destroyed and the homes of unpopular millowners and managers suffered from the fury of the mob. The most serious disturbances were at Peterswaldau and Langenbielau where the premises of the firm of Zwanziger and Dierig were destroyed. Troops were called in and the rising was put down. Over 80 arrests were made. The ringleaders were flogged and sentenced to ten years hard labour⁹⁹.

95 David S. Landes, *The Unbound Prometheus*, London 1969, p. 294.

96 Claude Fohlen, *L'industrie textile au temps du Second Empire*, Paris 1956, pp. 412–16.

96a Dieter Dowe, *Aktion und Organisation. Arbeiterbewegung, sozialistische und kommunistische Bewegung in der preußischen Rheinprovinz 1820–1852*, Hannover 1970, pp. 26–27.

97 Rudolf Stadelmann in: Hans-Ulrich Wehler (ed.), *Moderne deutsche Sozialgeschichte*, Köln 1966, p. 146.

98 *Briefe und Aktenstücke zur Geschichte Preußens unter Friedrich Wilhelm III.*, Vol. III, p. 470.

99 Friedrich Wilhelm Wolff, *Das Elend und der Aufruhr in Schlesien*, in: Hermann Püttmann (ed.), *Deutsches Bürgerbuch*, Darmstadt 1845, reprinted in Eduard Bernstein (ed.), *Dokumente des Sozialismus*, Bd. I, Berlin 1902, pp. 296–313. It may be added that in 1846 a riot in Annaberg (Saxony) was averted when a millowner (Eisenstück) allowed a deputation of ribbon makers and lacemakers to search his factory and satisfy themselves that no new machines had been installed (*R. Forberger*, op. cit., p. 142).

COLLECTIVE BARGAINING BY STRIKES

Before the industrial revolution the interests of both producers and consumers had been safeguarded by craft guilds and by municipal authorities. Guilds were associations of those who made manufactured articles — masters and journeymen — and they regulated the price and quality of goods, the terms of apprenticeship, and the piece rates earned by journeymen. The powers of the craft guilds were generally derived from charters granted by town councils or national governments. In England the state began to take over the function of fixing wages in the sixteenth century. The Statute of Artificers of 1563 empowered justices of the peace to fix the wages of skilled artisans and of labourers.

In the eighteenth century, as industry expanded, the guilds declined. In England they were not formally abolished but they had ceased to be effective organisations by 1800. One reason for the rapid growth of the cotton industry in Lancashire was that — for the most part — it developed in unincorporated towns and in rural districts where no guilds exercised any authority. In France the guilds were abolished in 1791 during the revolution and were never revived. But in France, as in England, apprenticeship in many branches of manufacture survived by custom long after it was no longer enforced by law. Despite the disappearance of the guilds in France the *compagnonnages* (ancient associations of unmarried journeymen) survived in the first half of the nineteenth century. Dyers appear to have been virtually the only textile workers admitted to these associations.

The guilds had begun to decline in Germany by the end of the eighteenth century. In 1788, for example, the General Directory of Prussia was informed that so-called »free weavers« existed side by side with »gild weavers« in the woollen and worsted industry. The free weavers were not organised as masters, journeymen, or apprentices; »wenn ein Zeug- und Raschmacher im Stande und des Vermögens ist, Stühle zu etablieren; so nimmt er zu deren Bearbeitung Arbeiter, das sind junge Burschen oder die das Metier schon etwas erlernt haben an, welche sie zwar Burschen und Gesellen nennen, aber dafür bey dem allhier zünftigen Raschmacher Gewerk dafür nicht geachtet und gehalten werden, weil die Herren kein Meister-Stück gemacht, die Gesellen und Burschen auch keine Lehr- und Geburts-Briefe und also auch, weil sie kein Privilegium erhalten, auch keinen Beysitzer haben, mithin ohne Vorschriften legen. Ein solcher Zeug- und Raschmacher wird nun ein auf der Freyheit Arbeitender genannt«¹⁰⁰.

Some guilds were abolished in Germany under French influence in Napoleon's days but they were revived after 1815. In Württemberg (1836) and in Prussia (1845) laws were passed recognising guilds in many trades. During the revolution of 1848 the masters demanded the re-establishment of guilds in all branches of manufacture. The journeymen, however, made it clear that their interests no longer coincided with those of their employers and they demanded a 12 hour day and other concessions. For a time the masters got their way. In Prussia a law of 1849¹⁰¹ limited entry into a number of trades to guild members or to persons who were able to satisfy a technical commission as to their competence. In 1853 the guilds were still firmly established in Frankfurt am Main. Bismarck, who lived there when he represented Prussia at the Federal Diet, complained that the gild

¹⁰⁰ H. Krüger, op. cit., p. 475.

¹⁰¹ Karl Heinrich Kaufhold, Die Auswirkung der Einschränkungen der Gewerbefreiheit in Preußen durch die Verordnung vom 9. Februar 1849 auf das Handwerk, in: Harald Winkel (ed.), *Vom Kleingewerbe zur Großindustrie*, 1975, pp. 165 – 188.

system was inefficient. He wrote: »Das Zunftwesen ist hier bisher intact, und man vermißt keinen der Nachteile, die es mit sich führt: übermäßige Theuerung des Fabrikats, Gleichgültigkeit gegen Kundschaft und deshalb nachlässige Arbeit, langes Warten auf Bestellung, spätes Anfahren — frühes Aufhören, lange Mittagszeit bei Arbeiten im Hause, Mangel an Auswahl fertiger Gegenstände, Zurückbleiben in technischer Ausbildung und viele andre von den Mängeln, die ich stets zu tragen entschlossen gewesen bin, wenn ich dafür einen konservativen befriedigten Handwerkerstand haben kann¹⁰².« In the 1860s the movement in favour of economic liberalism gained ground in Germany and it enjoyed the support of the influential Congress of German Economists. Various German states limited the privileges of the guilds, which were finally swept away by a law of the North German Federation which was passed in 1869. A few, such as the miners' guilds, survived as friendly societies.

The expansion of old established industries and the rise of new branches of manufacture, coupled with the decline of the guilds led to the emergence of a new kind of worker who depended entirely upon wages for a livelihood and owned neither tools nor machines. While the apprentice could become a journeyman and the journeyman could become a master the new type of wage earner had little opportunity of improving his position. A few workers did become employers but this was exceptional. Lacking any protection from guilds or municipal authorities these workers were at the mercy of their employers. This new relationship between master and man developed before the coming of power driven machinery and the establishment of factories. It was to be found in various branches of manufacture — certainly in the textile industries — in the seventeenth and eighteenth centuries. It has been seen that one way in which wage earners tried to secure higher wages or improved conditions of work was by violence. It was by no means unusual for workers to gain their demands by acts of terrorism. Another means of putting pressure upon their masters was for workers to go on strike. If a sufficient number of workers withdrew their labour at the same time an employer might be forced to submit to their demands.

During the industrial revolution workers frequently fell foul of the law if they formed associations or went on strike. In England in the eighteenth century associations of workers could be suppressed under the Common Law of conspiracy, the law of master and servant, and various Acts of Parliament which applied to particular industries. In 1797 an Act was passed which provided a maximum penalty of seven years' transportation for those who administered unlawful oaths. And the administering of oaths was practised by some associations of artisans. Two Combination Laws of 1799–1800 forbade all associations among employers as well as workers. The novelty of these Acts lay in the provisions for summary trial. But the penalties for breaking the law were mild — up to three months' imprisonment or up to two months' hard labour. The effect of this general legislation on the labour movement has sometimes been exaggerated¹⁰³. Associations of workers continued to function — and workers continued to strike — throughout the 25 years that the laws were in force. A select committee of the House of Commons reported in 1824 that the laws had failed »to prevent combinations either of masters or workmen«

102 Bismarck to H. Wagener, October 27, 1853, in: *Horst Kohl* (ed.), *Bismarckbriefe 1836–1872*, 6th ed., Bielefeld 1897, p. 111.

103 *Dorothy George*, *The Combination Laws Reconsidered*, in: *Economic History* (supplement to the *Economic Journal*), No. 2, May 1927, pp. 214–28, and: *The Combination Laws*, in: *Economic History Review*, Vol. VI, 1936, pp. 172–78.

and recommended that employers and workers should »be left at perfect liberty« to negotiate wage rates and hours of work¹⁰⁴. The Combination Laws were repealed in 1824. A wave of strikes followed and, after a further parliamentary enquiry, an Act was passed in 1825 which affirmed once more the Common Law prohibition of industrial combinations, but specifically exempted associations formed to regulate wages or hours of labour. Trade unions were now legal institutions but it was still difficult for them to organise strikes without breaking the law. »In the course of a strike acts might be committed which would render the participants liable to prosecution on a charge of criminal conspiracy under the Common Law«¹⁰⁵. It was only in the 1870s that laws were passed which recognised trade unions as voluntary societies with the freedom of unincorporated bodies and which legalised peaceful picketing during a strike.

In France the Law of Le Chapelier of June 1791 forbade all associations of masters and men. Napoleon increased the penalty for breaking the law by an edict of April 1803 and all associations over 20 persons were forbidden under his penal code. These attempts to outlaw the labour movement continued during the Restoration and under Louis Philippe. Between 1825 and 1847 nearly 200 people were sent to prison every year for being members of an association of workers. In an attempt to stamp out the *Devoir Mutuel* of the silk weavers of Lyons the laws against workers' organisations were tightened up still further in 1834 when associations of under 20 people were forbidden if they formed part of a larger unit. On the other hand the ancient guilds of journeymen (*compagnonnage*) were tolerated, while friendly societies were not merely exempt from the Law of Le Chapelier but were actively encouraged by the government. In Roubaix, for example, 1,300 textile workers belonged to friendly societies in 1840. And friendly societies were not infrequently used as a cover for underground trade union activities. The severe laws against workers' associations were just as unsuccessful as the Combination Laws had been in England in preventing the growth of a labour movement or in stopping workers from going on strike. In the 1830s there were organisations of various types of textile workers in Paris, Lyons, Saint Etienne, and Roubaix.

During the Second Empire workers' associations continued to be repressed. In the first eight years of Napoleon III's reign nearly 4,000 workers were punished for trade union activities or for supporting strikes. But in the 1860s various workers' organisations — co-operative credit banks and producers' co-operative societies rather than trade unions — came out into the open. The militancy of some of the workers increased as could be seen by the riots of the textile workers in Roubaix in 1867. In the following year some of the laws directed against workers' associations were relaxed. Three changes were made. First, workers' associations were tolerated (though still technically illegal) just as associations of employers had long been tolerated. Secondly, a court of law was no longer bound to accept the word of an employer concerning the wages that he paid to his workers. Thirdly, greater freedom was given to workers to hold public meetings without giving previous notice to the police¹⁰⁶.

The fall of the Paris Commune in 1871 was followed by a period of severe repression. It

104 Henry Pelling, *A History of British Trade Unionism*, Gretna 1971, p. 30.

105 Arthur Redford, *The Economic History of England 1760–1860*, second edition, 1960, p. 139.

106 F. du Cellier, *Histoire des classes laborieuses en France*, 1860; Edouard Dolléans, *Histoire du mouvement ouvrier*, 2 vols., Paris 1936 and 1948; Georges Duveau, *La vie ouvrière en France sous le second Empire*, Paris 1946.

was not until 1884 that various types of associations were legalised and this enabled the trade union movement to expand without being constantly harrassed by the law. The French textile workers, however, took little advantage of this freedom to combine. In 1910 fewer than 80,000 textile workers — only a little over 13 per cent of the labour force — were organised in trade unions. Only in the Lille-Roubaix region were the textile *syndicats* of any significance. Moreover in France, as in Germany, a textile union would include all classes of operatives. No separate organisations were set up for cotton, woollen, linen, or silk workers, and there were certainly no unions — as in the Lancashire cotton industry — for spinners, weavers, and card room operatives. Forrester considers that »some of the reasons for the obvious weakness of trade unionism are to be found in the nature of the industry itself: (1) its scattered village centres with a somewhat isolated outlook, cut off from the main current of working-class life; (2) the dependence of whole families upon individual employers for work, house, medical care, and so on, raising serious difficulties for the strike method; (3) the great variability in conditions of different mills and sheds made it difficult to find common ground upon which to base claims which appeal to all and the divergencies in piece rates for the same work between factories in the same locality and even under the same employer, make any settlement sectional. It is in part upon this ground that the employers have refused to recognise the textile unions, the other causes being the smallness and unrepresentative character of the membership and of the lack of any guarantee that an agreement will be carried out«¹⁰⁷. In the early years of the twentieth century there were signs of increased militancy on the part of French textile workers. In 1903, for example, 75,676 of them (19 per cent of the work force) went on strike. In 1909 there were nearly 200 strikes in the textile industries, the main demands of the strikers being increased wages, agreed lists of piecework rates, the abolition of fines, and the recognition of trade unions.

It may be added that there was a significant difference between the way in which the law regarded workers' associations in England and in France. In England Acts of Parliament were passed which dealt specifically with trade unions while French laws applied to associations in general (*syndicats*), which included organisations such as friendly societies and co-operative societies as well as trade unions. But in both countries workers' associations often had many functions. English trade unions and French *syndicats* might negotiate with employers on wages and hours but might also provide their members with sickness benefits.

In Germany, as in France, the development of workers' organisations in the early nineteenth century was hampered by harsh restrictions. In the age of Metternich workers' associations were forbidden in most German states, while public meetings required prior sanction by the police, and the press was rigorously censored. In the circumstances political associations were either driven underground or survived only under cover of apparently innocent organisations such as social clubs or friendly societies. Craftsmen still enjoyed a measure of protection as long as the guilds survived but many domestic workers — such as the weavers in Silesia — and factory workers were too weak to attempt to organise trade unions. Occasional strikes and outbursts of violence seldom alleviated the lot of these groups of workers.

107 R. B. Forrester, *op. cit.*, p. 96. See also Paul Louis, *Histoire du mouvement syndical en France 1789–1910*, 2nd ed., Paris 1911, and L. Levine, *The Labour Movement in France*, London/New York 1912.

The first German workers' associations were secret organisations formed by travelling journeymen abroad in France, Switzerland, and Italy. One of these groups was the League of Exiles in Paris (1834). A schism occurred in its ranks in 1836 when its more radical members set up the League of the Just. They later moved to London where they had 500 members in 1847. The exiled groups of radical workers were influenced by various socialist ideas, such as the Christian socialism of Wilhelm Weitling, the »true socialism« of Moses Hess, Karl Grün, and Hermann Kriege, and the materialist socialism of Marx and Engels. In 1847 Marx and Engels persuaded the League of the Just to accept their doctrines. The name of the association was changed to the Communist League and its programme was embodied in the Communist Manifesto. The demands of the small groups of exiled German artisans who formed secret associations in the 1840s were mainly political in character. They included parliamentary government, universal suffrage, the abolition of the censorship, the freedom to hold public meetings, and trial by jury. The more extreme socialists — such as those who followed Marx and Engels — argued that the exploitation of workers by their employers could be ended only by a revolution, which would lead to the establishment of a classless communist society¹⁰⁸.

During the revolution of 1848 Marx and Engels were active in the Cologne area where they edited the *Neue Rheinische Zeitung*. They collaborated with those who attempted to organise the workers in the Rhineland with the view to establishing a democratic republic. Meanwhile in Berlin Stephan Born was the driving force behind the first labour movement in Germany. He was at one time a disciple of Marx but he gradually drifted away from his master. He convened a congress of workers which met in August and September 1848 in Berlin and he founded the General German Workers Brotherhood (*Verbrüderung*) with a central committee sitting in Leipzig. The demands of this association included universal suffrage, the right to combine, the introduction of welfare services and the establishment of co-operative societies of producers and of consumers.

Born's association included both domestic craftsmen and factory workers. Some textile operatives joined the Brotherhood. Its journal gave a detailed account of conditions in Oelhai's »Himmelsmühle« spinning mill at Wolkenstein. The operatives worked a 13 hour day and their wages were so low that some of them went begging in the streets in their lunch hour. Wages were cut by fines and by deductions for school fees, for candles, and for contributions to the firm's sick club. Sunday work was so frequent that the operatives complained to the local clergyman. The firm thereupon replaced Sunday work by a new shift from midday on Friday to 9. p. m. on Saturday. Born's association did not long survive the reaction of 1849 — it was banned by Federal Law in 1854 — but it had played a part in the German labour movement, as a forerunner of Lassalle's workers' association of 1863¹⁰⁹.

108 Carl Georg Ludwig Wermuth and Wilhelm Stieber, *Die Communisten-Verschwörungen des neunzehnten Jahrhunderts*, 2 vols., Berlin 1853–54; new edition in one volume, 1969, and F. Engels, *Zur Geschichte des Bundes der Kommunisten* (1885), introduction to reprint of Karl Marx, *Enthüllungen über den Kommunistenprozeß zu Köln, 1852–53*, new edition, Berlin 1952. For the view of Marx and Engels on trade unions see *Karl Marx und Friedrich Engels über die Gewerkschaften*, Berlin 1953.

109 Max Quarck, *Die erste deutsche Arbeiterbewegung, Geschichte der Arbeiterverbrüderung 1848/49*, Leipzig 1924, pp. 224–25; Frolinde Balser, *Sozial-Demokratie 1848/49–1863. Die erste deutsche Arbeiterorganisation »Allgemeine deutsche Arbeiterverbrüderung« nach der Revolution*, Stuttgart 1962.

During the reaction that followed the collapse of the revolution of 1848 workers' political associations were banned, though friendly societies and social clubs were allowed. In Prussia the proclamation of Prince Wilhelm as Regent in 1858 heralded a brief »New Era« which was less reactionary than the previous régime of Otto von Manteuffel. In the 1860s worker's associations were generally tolerated in the German states. The year 1863 saw the establishment of the General German Workers' Union and the Union of German Workers and Educational Societies. The former (led first by Lassalle and then by Schweitzer) demanded the introduction of universal suffrage and state-aided producers' co-operative associations, while the latter supported the aspirations of the Progressive Party. In 1869, the German Social Democrat Workers' Party was established at Eisenach by Liebknecht, Bebel, and Bracke. All these organisations had political rather than economic aims.

Trade unions began to be established in the late 1860s when freedom of association — provided police authorisation was secured — was granted in 1865. By far the most important — the so-called »free unions« — were closely associated with the Social Democrat Party. The Hirsch-Duncker unions supported the Progressive Party and Bishop Ketteler's Christian unions were joined by Catholic workers, particularly in the Rhineland. The »free unions« were banned by Bismarck's Anti-Socialist Law of 1878–90 but their growth was resumed in the 1890s. However it was not until 1902 that the total membership of all unions reached 1.000.000. Ten years later there were over 3.000.000 trade unionists in Germany of whom over 2.500.000 belonged to socialist »free unions«. The textile workers were not highly organised. In the cotton industry, for example, only 18 per cent of the operatives — 25 per cent of the men and 11 per cent of the women — were organised in 1909. In Augsburg and Mulhouse there were very few trade unionists but in Crimmitschau in Saxony about half of the operatives had joined the »free unions«. As Dehn explained the reason for this was not far to seek. »Crimmitschau with its small concerns, spinning the lowest grades of cotton and waste, has almost the worst working conditions in Germany«¹¹⁰. In 1903 it had been the scene of a bitter strike¹¹¹.

Despite all the efforts of the state to stop workers from combining and from striking, there were numerous disputes between textile employers and their operatives during the industrial revolution which ended in strikes or lockouts. Demonstrations and meetings of workers were sometimes broken up by police or soldiers and those who organised strikes were sometimes sent to prison. Associations of workers might be banned. Nevertheless, if their grievances were sufficiently serious, workers were prepared to strike however unpleasant the consequences might be. The frequency of industrial unrest in a branch of the textile industry in the period of industrialisation may be illustrated by the experience of the Lancashire cotton industry.

There were three classes of weavers in Lancashire at this time — smallware, silk and check — and, until the introduction of the power loom, they operated hand looms. They were involved in numerous strikes and lockouts in the second half of the eighteenth century. In 1758 there was a great strike of check weavers who demanded the recognition of their association and a return to traditional piecework rates of pay. The employers

¹¹⁰ R. M. R. Dehn, op. cit., p. 72.

¹¹¹ For the strike of the Crimmitschau cotton operatives in 1903 see *Dokumente und Materialien zur Geschichte der deutschen Arbeiterbewegung*, Series I, Vol. 4, Berlin 1967, pp. 91–95.

invoked the Common Law and 19 weavers were charged. But when they were brought to trial they were only admonished and fined a shilling each. In the following year four smallware weavers were charged with combining to secure higher wages and with going on strike. They, and eight others charged with aiding and abetting, were discharged on promising to work for wages already agreed upon and on agreeing not to combine in an attempt to raise wages. There was another strike of smallware weavers in 1781 when both masters and men tried to gain public support by stating their case in letters to the press. The spinners, on the other hand, do not seem to have been organised at this time and when they feared that they would lose their jobs by the increased use of large jennies and carding engines they did not go on strike but resorted to violence in 1779. Shortly afterwards, however, in 1785, there was a strike of cotton spinners in Stockport¹¹².

During the wars of the French revolution and Napoleon there were many strikes of cotton workers in Lancashire. The handloom weavers generally went on strike when their employers tried to reduce piecework rates in periods of trade depression. They were on the defensive and endeavoured to resist a steady decline in their standards of living. In 1808, for example, hand loom weavers were earning only about half of what they had earned only ten years before. There was a severe slump and the weavers went on strike for higher wages. About 60.000 looms were stopped and the weavers secured an increase in piece work rates. The next recession in 1811–12 saw a strike of the Scottish weavers, which lasted for three weeks and came to an end when members of the strike committee were arrested. When the war ended in 1815 the bargaining power of the weavers was weakened by the arrival of numerous ex-service men seeking work. There were some local strikes but little concerted action. In 1818, however, there was a more general strike of weavers, some of whom secured an increase in wages.

The policy of the mule spinners was different from that of the hand loom weavers. While the weavers were resisting a decline in their wages and living standards, the spinners were trying to improve their existing economic position. While the weavers' strikes generally occurred during a slump in the cotton trade the spinners frequently took industrial action during a boom. In 1810 they organised a »rolling strike« which was a planned succession of stoppages in different mills. Other workers supported the spinners and eventually 30.000 workers were on strike or were locked out. They held out for four months but failed to attain their objectives. But they were not discouraged and in the following year they struck again in Manchester against proposed wage reductions. In 1816, however, when there was widespread unemployment, many Lancashire cotton spinners had to accept lower wages. Two years later there was a well organised strike of 20.000 spinners and some weavers, dyers, hatters, and building workers downed tools in sympathy with them. The strike lasted for two months and, although some millowners offered their operatives improved piecework rates, the strike eventually collapsed when both the spinners' strike committee and the dyers' committee were arrested.

The position of the millowners was strengthened in the 1820s by the widespread introduction of the power loom and by the invention of the self-acting mule. As more power looms were installed the number of hand loom weavers fell from 250.000 in 1833 to 60.000 in 1843 and they had little chance of success if they went on strike. On the other

112 *Alfred P. Wadsworth and Julia de Lacy Mann, The Cotton Trade and Industrial Lancashire 1600 – 1780, Manchester 1931, ch. 19.*

hand the advent of the self-actor had less drastic consequences for the spinners and they showed considerable militancy in their relations with the millowners. In 1822–25 there was an unsuccessful strike of some 5,000 spinners in the Bolton district, who demanded an increase in wages. The repeal of the Combination Laws was followed by many strikes and lockouts in a number of Lancashire cotton towns as well as in Glasgow where the stoppage lasted for over four months. But these strikes, too, were generally unsuccessful. In 1829 there was a six month's strike in Bolton and a bitter dispute in Manchester between the millowners and both coarse spinners and fine spinners. In December of that year John Doherty succeeded in forming the Grand General Union of Cotton Operatives of the United Kingdom. There was soon a trial of strength between this national union and the millowners. When cotton workers in Manchester and Bolton went on strike in 1830 some 50 millowners in the Ashton under Lyne district imposed a reduction in wages which led to a strike of 20,000 operatives which lasted for 10 weeks. The strikers received financial assistance from cotton workers all over the country but in the end they had to give way¹¹³. Doherty's union collapsed. The boom of 1833–36 saw renewed strike action on the part of spinners in Bolton, Preston, and elsewhere¹¹⁴. The Preston spinners had secured a ten cent increase in wages but then, at the instigation of delegates from other Lancashire cotton towns had demanded the »Bolton list of prices«. The millowners resisted this demand and introduced many self-actors into their factories. They now had the whip hand over the operatives. The strike collapsed and the spinners resumed work at an average wage of 22/6 d a week. Within a few years, however, an increased demand for spinners led to a rise of about 20 per cent in weekly piece rate earnings and a reduction of about 12½ per cent in the hours of work¹¹⁵.

In later years adjustments of wages in Lancashire were frequently accompanied by strikes. In 1845 Engels wrote that »die unglaubliche Häufigkeit dieser Arbeitseinstellungen beweist es am besten, wie weit der soziale Krieg schon über England hereingebrochen ist«¹¹⁶. In 1861 John Watts listed seven recent unsuccessful stoppages in which nearly 95,000 operatives were involved. He estimated the total loss to society of these strikes to be over £ 1,000,000¹¹⁷.

It has been seen that on the Continent textile workers were very slow to establish trade unions. Even in the early twentieth century only a small proportion of these workers were organised. Lacking any permanent organisation — which would enable a strike fund to be set up — the textile workers were seldom in a position to go on strike. It was not until the early twentieth century that the French textile workers had established rudimentary organisations which enabled them to indulge in strikes on a large scale. As for Germany, it was stated in 1906 that the weavers' strike at Crimmitschau in 1903 had been »der einzige große Streik im bisherigen Leben der deutschen Baumwollindustrie«¹¹⁸.

113 See W. A. Jevon's article on the Ashton under Lyne strike in the *Report on Trades' Societies and Strikes*, Social Science Association, 1860.

114 See Henry Ashworth, *An Inquiry into the Origin, Progress and Results of the Strike of the Operative Cotton Spinners of Preston from October 1836, to February 1837*, Manchester 1837. For early strikes of cotton operatives in Lancashire see H. A. Turner, op. cit., pp. 70–75.

115 *The Master Spinners and Manufacturers' Defence Fund* . . . , Manchester 1854, pp. 5–6.

116 F. Engels, *Die Lage der arbeitenden Klasse in England*, p. 227.

117 J. Watts, op. cit., p. 65, citing a paper read to the British Association in 1861.

118 W. Lochmüller, op. cit., p. 75.

TWO CONTROVERSIES

The difficulty of assessing the way in which industrialisation affected the lives of the textile workers may be seen by examining two controversies especially among English scholars on the subject. In both controversies different conclusions have been reached by different scholars who have had access to the same evidence. Agreement on the evidence is no guarantee that there will also be agreement on the conclusions to be drawn from the evidence.

1. *The Standard of Living*

The first controversy concerns the whole working class in Britain but since the operatives engaged in the manufacture of cotton, wool, flax, and silk formed so important a part of the factory population, the discussion is relevant to any consideration of the way in which the lives of the textile workers were affected by the process of industrialisation.

Sir John Hicks has observed that »there is no doubt at all that industrialisation, in the end, has been highly favourable to the real wages of labour. Real wages have risen enormously, in all industrialised countries, over the last century; and it is surely evident that without the increase in productive power that is due to industrialisation, the rise in real wages could not possibly have occurred«¹¹⁹. A comparison between the condition of the workers in industrialised countries with those in underdeveloped countries can leave no doubt as to where the highest standard of living is to be found.

The standard of living of the factory workers in industrialised countries was far higher in 1914 than it had been a century earlier. It has been observed that »between 1801 and 1901 the average annual income per head in England rose from £ 12.9 to £ 52.5 over a period when the purchasing power of money actually increased«¹²⁰. Edward Baines, in his account of the woollen manufacture in England, declared in 1858 that »since 1825, notwithstanding a very great abridgement of the hours of labour, wages have remained almost unchanged, whilst both food and clothing have been materially cheapened. It follows that the condition of the operatives must have been considerably improved«¹²¹. In Germany, Karl Helfferich, writing in 1913, stated that in the previous 25 years there had been a substantial increase in the consumption per head of the population of meat, sugar, coffee, rice, cotton and many other commodities. The average annual wages of coal miners in the Ruhr had risen from 863 Marks in 1888 to 1.755 Marks in 1913¹²². In France Leroy Beaulieu declared, in 1881, that »all classes of the nation have participated in the general progress and the working class has particularly benefited in the triple sense of an improvement in their material well being, an increase in security and the growth of leisure«¹²³. And Kuczynski has observed that although social legislation in France was

119 John Hicks, *A Theory of Economic History*, Oxford 1969, p. 148.

120 R. Boyson in Arthur Seldon (ed.), *The Long Debate on Poverty*, p. 86.

121 Baines's *Account of the Woollen Manufacture of England*, ed. by K. G. Ponting, p. 94.

122 Karl Helfferich, *Deutschlands Volkswohlstand 1888-1913* (fifth edition, Berlin 1915) and W. O. Henderson, *The Rise of German Industrial Power 1834-1914*, London 1975, p. 241.

123 Paul Leroy-Beaulieu, *Essai sur la répartition des richesses et sur la tendance à une moindre inégalité des conditions*, Paris 1881, p. 44 and S. Pollard and C. Holmes, op. cit., Vol. II, p. 478. In 1907 E. Levasseur declared that in France the general distribution of income had altered; the share going to landed proprietors was relatively less than before, whilst that going to the wage earners (including personal services, fees etc.) was greater. However, the increase

far behind that of Britain or Germany the trend of real wages between 1870 and 1900 was »definitely upwards«¹²⁴.

While there can be no doubt of the long term benefits gained by factory workers as a result of industrialisation there have been controversies concerning the short term consequences to the workers of the onset of the industrial revolution. The question at issue is whether the standard of living of factory operatives in England rose or fell in the first half of the nineteenth century. Very different answers were given both by contemporaries and by later historians. In England contemporary writers, such as G. R. Porter, James Stuart Mill, and J. E. Cairns, had no doubt that the condition of the workers had improved during the industrial revolution. In Germany the economist Friedrich List had no doubt of the benefits that accrued to the workers when an under-developed country became industrialised. He declared that in an agrarian society »tandis que dans la condition purement agricole on n'estime et on ne paie que la force physique, et du plus robuste calibre encore et qu'une grande partie des forces physiques et la presque totalité des forces morales sont mortes et au néant, les manufactures appellent à la vie et à la perfection les forces physiques et intellectuelles de tout genre et de tout degré«. List considered that great manufacturing centres fostered the development »de plus en plus les sciences, les arts, la littérature par des institutions publiques et par des associations [...]«. He regarded a manufacturing town as a mecca for enterprising entrepreneurs and for skilled workers who could fulfil their ambitions in a way that was impossible in the countryside. And he saw in the growth of factory towns the key to material well being and to educational and cultural advance¹²⁵.

On the other hand contemporaries like Peter Gaskell in England and Friedrich Engels in Germany were certain that the standard of living of the factory workers in the early nineteenth century had declined from the days of the domestic system in the eighteenth century¹²⁶. In 1848, in the Communist Manifesto, Marx and Engels asserted that industrialisation had turned the workers into paupers who were in continual danger of losing their jobs owing to commercial crises and the invention of new machines¹²⁷. A number of English novelists — Charlotte Brontë, Charles Dickens, and Mrs. Gaskell, for example — popularised the idea that the standard of living of the workers and the quality of their lives had deteriorated as a result of industrialisation. In France Émile Zola's *Germinal*, which André Gide regarded as one of the ten best novels in the French language, vividly described the wretched condition of the coal miners in the 1860s¹²⁸. In Germany the heroes of Gerhart Hauptmann's drama *Die Weber* were the oppressed hand loom weavers of

in salaries had been more marked between 1850 – 1883 than it had been for the last 20 years before (*E. Levasseur*, *Questions ouvrières et industrielles en France sous la Troisième République*, Paris 1907, p. 631).

124 *Jürgen Kuczynski*, *A Short History of Labour Conditions under Industrial Capitalism*, Vol. IV, France: 1700 to the Present Day, p. 128 and p. 147.

125 *Friedrich List*, *Le système naturel d'économie politique*, 1837, in *F. List, Werke: Schriften, Reden, Briefe*, Vol. IV, Reprint Aalen 1971, pp. 270 – 72.

126 *Peter Gaskell*, *The Manufacturing Population of England*, and *F. Engels*, *Die Lage der arbeitenden Klasse in England*.

127 *Karl Marx/Friedrich Engels*, *Manifest der Kommunistischen Partei* (1848), Berlin 1957, p. 17 and p. 21.

128 *L. W. Tancock*, the translator of the Penguin Classics edition of *Germinal* (Harmondsworth, Middlesex, 1954, reprinted 1963) observes that the novel »is a grandiose epic poem of human misery and the revolt of the oppressed, but in no sense a true account of affairs as they could ever have existed at a given time« (p. 13).

the mountain villages of Silesia who had risen in revolt against their oppressors in 1844¹²⁹.

Early in the twentieth century the term »the Hungry Forties« came into general use in England. It first appeared in the title of a book published at the time of the fiscal controversy during Joseph Chamberlain's campaign in favour of protection. The book contained harrowing accounts by old people — particularly children of farm labourers — of the hard times that they had experienced 60 years before¹³⁰. If this gloomy picture of the 1840s had been correct it would have supported the view that the workers' living standard had declined during the industrial revolution. But it was not correct. Montague Fordham dismissed it as a myth and declared that »the so-called Hungry Forties were not in Britain a time of special poverty or of specially high prices of food«¹³¹. And Sir John Clapham pointed out that, although the years 1838–42 were a period of depression, the workers were no hungrier in the 1840s than they had been in the two previous decades¹³². But the legend survives, despite all attempts to dispel it¹³³.

In the 1920s the controversy concerning the social consequences of the industrial revolution was revived. In a series of studies on the history of the English workers Mr and Mrs Hammond — following in the footsteps of Arnold Toynbee and Sidney Webb¹³⁴ — argued in favour of the view that the living standard of the workers in England had fallen during the industrial revolution¹³⁵. This thesis gained wide acceptance and found its way into many popular textbooks. It was challenged by Sir John Clapham in 1926. He wrote that »the legend that everything was getting worse for the working man, down to some unspecified date between the drafting of the People's Charter and the Great Exhibition, dies hard. The fact that, after the price fall of 1820–21, the purchasing power of wages in general — not, of course, everyone's wages — was definitely greater than it had been just before the Revolutionary and Napoleonic wars, fits so ill with the tradition that it is very seldom mentioned, the work of statisticians on wages and prices being constantly ignored by social historians«¹³⁶.

Hammond replied by criticising the way in which Clapham had interpreted statistics of wages and prices¹³⁷ and by arguing that the industrial revolution had reduced not only

129 »Die Weber«, written in 1892, was Gerhart Hauptmann's first success. Another German dramatist who wrote about the sufferings of the workers was Ernst Toller. The heroes of his play »Die Maschinenstürmer« were the English Luddites.

130 T. Fisher Unwin, *The Hungry Forties* . . ., 1904, new edition, 1912.

131 Montague Edward Fordham, *Britain's Trade and Agriculture*, London 1932, pp. 28–29.

132 John Clapham, *Corn Law Repeal, Free Trade and History*, in: *Manchester Statistical Society*, October 10, 1945.

133 W. H. Chaloner, *The Hungry Forties*, London 1957 and W. H. Chaloner and W. O. Henderson, *Friedrich Engels und das England der Hungrigen 1840er Jahre*, in: *Ordo. Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft*, Vol. XXV, 1974, pp. 261–281.

134 Sidney Webb wrote: »If the Chartists in 1837 had called for a comparison of their time with 1787, and had obtained a fair account of the actual social life of the working man at the two periods, it is almost certain that they would have recorded a positive decline in the standard of life of large classes of the population« (*Sidney Webb, Labour in the Longest Reign*, in: *Fabian Tract*, No. 75, 1897, p. 2).

135 J. L. and Barbara Hammond, *The Village Labourer*, London/New York 1911; *The Town Labourer*, London/New York 1917; *The Skilled Labourer*, London/New York 1919; *Life of Lord Shaftesbury*, London 1923; and: *The Bleak Age*, New York 1947.

136 John Clapham, *Economic History of Modern Britain*, Vol. I: *The Early Railway Age, 1820–50*, 1926, preface to the first edition, p. VII.

137 Clapham used the data on money wages collected by Bowley and Wood and the cost of living index compiled by Silberling. *Hobsbawm* states that »the value of the Bowley-Wood

the standard of living but also the quality of life of the workers. Clapham accepted the first criticism and acknowledged that »statistics of material well-being can never measure a people's happiness«. The Hammonds for their part conceded that real wages had risen during the industrial revolution and that the causes of popular discontent »must be sought outside the sphere of strictly economic conditions«¹³⁸.

The controversy was reopened in 1949 when T. S. Ashton once more assembled evidence to support the argument that a large group of skilled workers in England had enjoyed a standard of living »well above the level of mere subsistence« during the industrial revolution. But he admitted that the wages of unskilled factory workers, casual labourers, and hand loom weavers might not have been sufficient to purchase even the bare necessities of life¹³⁹. In a later essay Ashton declared that for the majority of English workers »the gain in real wages was substantial« during the industrial revolution¹⁴⁰.

Hobsbawm replied to Clapham, Ashton, and other »optimists« in 1959. He relied upon statistics of mortality, health, unemployment, and consumption to support the views of »pessimists« like the Hammonds. He stated that mortality rates in England, after a marked fall in the last quarter of the eighteenth century, had risen between 1811 and 1841. Unemployment had risen sharply during periods when trade was depressed. In 1826 in the Lancashire cotton district half the population of Bolton and two fifths of the population of Burnley had been out of work or on short time. In 1842 three fifths of Bolton cotton workers were unemployed while in Clitheroe, where five mills normally employed 2,500 operatives, there were 2,300 paupers. One third of the inhabitants of Paisley, in the Scottish cotton district, were supported by charity. A few years later, in 1847, in France two thirds of the textile workers of Roubaix were out of work¹⁴¹. With regard to consumption Hobsbawm argued that in the first half of the nineteenth century in England wheat production and imports failed to keep pace with the rise in population so that the workers ate less bread but more potatoes. He suggested that there had been a decline in the consumption of milk. In his view the adulteration of food consumed by the workers, particularly bread, tea, milk and butter, had increased in the 1840s and 1850s¹⁴². The thesis which Hobsbawm defended was held as an article of faith by Marxists. J. Kuczynski, for example, argued that in Germany the real wages of the workers declined and their hours of work rose during the first half of the nineteenth century¹⁴³. And the Soviet historian, N. A. Erofeev denounced »the futility of attempts

collections of money-wage data is not in question. What it is legitimate to doubt [...] is how far it represents the movement of real *earnings* as distinct from rates [...]» (The British Standard of Living, 1790 – 1850, in: *Economic History Review*, Vol. X, Aug. 1957, and in: *Labouring Men*, pp. 64 – 104).

138 E. P. Thompson, *The Making of the English Working Class*, pp. 226 – 27.

139 Thomas S. Ashton, *The Standard of Life of the Workers in England 1790 – 1830*, in: *Journal of Economic History*, Supplement IX, 1949, pp. 19 – 38.

140 T. S. Ashton, *The Treatment of Capitalism by Historians*, in: *Friedrich August von Hayek* (ed.), *Capitalism and the Historians*, Chicago 1954.

141 Eric J. Hobsbawm, *The Age of Revolution*, London 1964, p. 246.

142 E. J. Hobsbawm, *The British Standard of Living, 1790 – 1850*, in: *Economic History Review*, Vol. X, Aug. 1957 and in: *Labouring Men*, pp. 64 – 104. See also »The Standard of Living Debate: A Postscript« (*Labouring Men*, pp. 120 – 25).

143 J. Kuczynski, *Die Geschichte der Lage der Arbeiter unter dem Kapitalismus*, Vol. I and *Hans Mottek* (and others), *Studien zur Geschichte der industriellen Revolution in Deutschland*, p. 57. Kuczynski's index of real wages in Germany (1900 = 100) declines from 86 in 1820 – 29 to 57 in 1847 but rises to 86 again in 1849 (p. 253). Helga Grebing, like Kuczynski, has argued

of reactionary bourgeois historiography to throw doubts on the long since decided question of the deterioration of the position of the English workers in the first half of the nineteenth century¹⁴⁴.

Erofeev was referring to an article by R. M. Hartwell¹⁴⁵ in which he declared that there had been »an upward trend in living standards during the industrial revolution« and that »the standard of living of the mass of people in England was improved [...] slowly during the war, more quickly after 1815 and rapidly after 1840«. But he admitted that there had been »dire poverty« during the period of industrialisation as well as »cyclical and technological unemployment of the most distressing character«. Hartwell recognised that an improvement in the real wages earned by workers was no guarantee that their »ultimate well-being« had also improved. He pointed out that »the period of the industrial revolution was one of political discontent and social upheaval — but also that it was a period of increasing opportunity for working class men and women«¹⁴⁶.

In 1958 the editors of a new English translation of Friedrich Engels's *Die Lage der arbeitenden Klasse in England* cast doubts upon the impartiality of a writer upon whose evidence the »pessimists« had often placed great reliance. This vivid description by an eyewitness of the wretched condition of the operatives in the Lancashire cotton district and the Yorkshire woollen district in the 1840s appeared to support the view that the growth of the factory system had brought nothing but misery to the workers. But Engels was not quite so reliable a witness as has sometimes been thought. He knew the northern textile districts but he was not so well acquainted with other factory and mining regions. He had read only a limited number of reports, books, pamphlets, and newspapers. He frequently failed to quote accurately from the material that he used and sometimes he showed little judgment in assessing the value of different sorts of evidence. He failed to appreciate the significance of various reforms that were improving the position of the English workers at the time when he was writing. »The abolition of truck (1830–31), the reduction of the hours worked by women and children in most textile factories (1833), the annual government grant to assist elementary education (from 1833), the reorganisation of municipal administration (1835), the exclusion of women and children from underground work in mines (1842) and Sir Robert Peel's reform of the tariff (1842) had all contributed

that the condition of the German workers deteriorated in the first half of the nineteenth century. She writes: »The working day was increased to 13 or 14 [hours] and in the 1840s to as much as 17 hours, and spent in appalling conditions; falling wages had to be made up by women and children going out to work, which in turn depressed wages further; incredible housing conditions and inadequate provisions against sickness, old age, and accident were common« (*Helga Grebing, The History of the German Labour Movement, London 1969, p. 17*).

144 N. A. Erofeev, in: *Voprosy istorii* 1961, No. 11, p. 24 and R. M. Hartwell in Part B of »The Standard of Living during the Industrial Revolution: A Discussion«, in: Warren C. Scoville and J. Clayburn La Force, *The Economic Development of Western Europe: The Eighteenth and early Nineteenth Centuries*, Lexington, Mass., 1969, pp. 155–169; R. M. Hartwell, *Interpretation of the Industrial Revolution in England: A Methodological Enquiry*, in: *Journal of Economic History*, Vol. XIX, 1959, pp. 397–416; R. M. Hartwell, *The Rising Standard of Living in England, 1800–50*, in: *The Industrial Revolution and Economic Growth*, 1972.

145 R. M. Hartwell, *Interpretation of the Industrial Revolution in England: A Methodological Enquiry*, in: *Journal of Economic History*, vol. XIX, 1959, pp. 397–416, and: *The Rising Standard of Living in England, 1800–1850*, in: *The Industrial Revolution and Economic Growth*, 1972.

146 R. M. Hartwell in Part B of: *The Standard of Living . . .*, in Scoville and La Force, op. cit., pp. 155–169.

towards alleviating the sufferings and raising the living standards of the workers¹⁴⁷. Engels's book was not an unbiased or an authoritative account of social conditions in England. It was an indictment of the English middle class whom Engels detested. While he was writing his book Engels told Marx: »Ich werde den Engländern ein schönes Sündenregister zusammenstellen; ich klage die englische Bourgeoisie vor aller Welt des Mordes, Raubes und aller übrigen Verbrechen in Masse an und schreibe eine englische Vorrede dazu, die ich apart abziehen lassen und an die englischen Parteichefs, Literaten und Parlamentsmitglieder einschicken werde. Die Kerls sollen an mich denken«¹⁴⁸. The writer of this diatribe could hardly claim to be an impartial observer of the English scene in the 1840s. As was to be expected those who had found Engels so useful an ally were quick to spring to his defence. Hobsbawm accepted that Engels's slips and minor errors were very numerous but claimed that nevertheless his account of the English workers in 1844 was substantially correct and was confirmed by other writers of that period¹⁴⁹.

The controversy concerning the standard of living of the English workers during the industrial revolution was discussed by E. P. Thompson in 1963. His sympathies lay with the »pessimists« but he appreciated the weight of the statistical evidence against them. He admitted that »over the period 1790–1840 there was a slight improvement in material standards«. He then proceeded to argue that despite any statistical evidence to the contrary the workers were worse off after industrialisation than they had been before. He asserted that »it is quite possible for statistical averages and human experiences to run in opposite directions. A *per capita* increase in quantitative factors may take place at the same time as a great qualitative disturbance in people's way of life, traditional relationships, and sanctions. People may consume more goods and become less happy or less free at the same time«¹⁵⁰. Thompson discussed the fate of the hand loom weavers. He admitted that Gaskell and Engels had idealised the lives of weaving communities in the days of the domestic system but argued that nothing could compensate them for the loss of their independent status. The argument that — leaving aside the question of living standards — the quality of life of the workers declined during the industrial revolution is one which can neither be proved nor disproved.

Claude Fohlen, after discussing the controversy, reached two conclusions. First he declared that »a court terme, et en particulier dans la première phase de la révolution industrielle, les conditions matérielles des classes laborieuses ne se sont pas améliorées de façon sensible et se sont peut-être même aggravées.« Moreover, »il faut tenir compte d'éléments sociaux et psychologiques, non encore mesurables«. Secondly, Fohlen had no doubt that in the long run industrialisation greatly improved the standard of living of the workers owing to economic factors — such as reduced costs of production, increased mechanisation, and nationalisation — and to the efforts of the workers themselves to improve their conditions through political and industrial action and through friendly societies, co-operative societies, and savings banks^{150a}.

As more evidence concerning such matters as wages, consumption, mortality, and health

147 Editors' introduction (by W. O. Henderson and W. H. Chaloner) to the second edition of F. Engels, *The Condition of the Working Class in England*, 1845, Oxford 1971, p. XXIX.

148 F. Engels to Karl Marx, November 19, 1844 in: *Marx/Engels*, Historisch-Kritische Gesamtausgabe. Werke, Schriften, Briefe, Part III, Vol. I, 1929, pp. 4–8.

149 E. J. Hobsbawm, *History and The Dark Satanic Mills*, in: *Labouring Men*, pp. 105–119.

150 E. P. Thompson, *The Making of the English Working Class*, p. 231.

150a Claude Fohlen, *Qu'est-ce que la révolution industrielle?* Paris 1971, pp. 228–29.

become available it may be possible for historians to reach a measure of agreement on changes in living standards of the workers during the industrial revolution. But it may be doubted whether agreement can ever be reached on changes in the workers' social status, conditions of work, home life, and leisure activities — factors in the quality of life which cannot be measured precisely.

2. *The Cotton Factory Family*

It has been seen that statisticians provided historians with ammunition in the controversy concerning the standard of living of the workers during the industrial revolution. When sociologists, such as Smelser and Anderson¹⁵¹, examined the social rather than the economic consequences of industrialisation, they stressed the importance of studying the family rather than the individual worker. Historians, however, regarded the new approach with some suspicion and Smelser's conclusions with regard to changes in the cotton factory family between 1770 and 1850 were criticised by Edwards and Lloyd-Jones¹⁵².

When discussing the first phase of industrialisation, between 1770 and 1790, Smelser observed that so long as the jenny and the mule were operated by hand they had little effect upon the structure of the family life of the worker. Yarn and cloth continued to be produced in cottages and there was little change in the work performed by various members of the family. But this is an over-simplification of the way in which the jenny influenced family life because it did not distinguish between the small jenny and the large jenny. The former had 20 or fewer spindles, the latter had more — sometimes much more — than 20 spindles. It was the small jenny that was introduced into workers' cottages in the 1770s without greatly influencing the pattern of family life. But the introduction of the large jenny was a different matter because this machine could not be used in a cottage and was installed in the early mills. The riots in various Lancashire towns in 1779 were directed against these early jenny factories which were competing all too successfully with the cottage industry in which the small jenny was used.

Arkwright's water frame, like the large jenny, could not be used in the home and new cotton mills were established in which water power operated the machinery. Smelser argued that the structure of the worker's family was not greatly changed even when the family moved into one of the new cotton mills, because the father continued to instruct his sons in both spinning and weaving. In fact under the domestic system girls had been trained to spin cotton or wool by their mothers while in the mills the young spinners were trained by men and not by women. To that extent the early cotton factories did change the former pattern of family life.

Smelser argued that this disruption of family life was alleviated because millowners employed entire families and frequently provided welfare services such as recreation rooms and educational classes, which helped to keep families together. But the view that families were employed in the early mills rests upon evidence from only two Lancashire cotton firms and even that evidence does not refer to the period under discussion (1770–90). In fact, it has been seen that, owing to the isolated location of many early mills and the

151 Neil J. Smelser, *Social Change in the Industrial Revolution*, London 1959; Talcott Parsons and Neil J. Smelser, *Economy and Society*, New York 1965; Michael Anderson, *Family Structure in Nineteenth Century Lancashire*, Cambridge 1971.

152 M. M. Edwards and R. Lloyd-Jones, N. J. Smelser and the Cotton Factory Family: A Reassessment, in: N. B. Harte and K. G. Ponting (eds.), *Textile History and Economic History*.

refusal of respectable workers to enter them, millowners had to take what hands they could get. Since tramps and pauper apprentices formed an important part of the labour force in the early mills and since both men and women faced serious competition from children and young workers, it appears that family employment was by no means as common as Smelser had supposed. Even when an entire family was employed in a cotton factory — particularly a rural mill — its members did not necessarily work together. Both parents might have worked outside the factory premises — the father on some outdoor occupation such as roadmaking, the mother on cotton picking at home — while the children were employed in the mill itself.

Smelser considered that the traditional family life of cotton workers was more seriously threatened between 1790 and 1820 than it had been between 1770 and 1790. This was due to the decline in the cottage industry in which the small jenny was used, the rapid growth of mechanised spinning mills, and the increase in the number of women and children employed in the factories. This threatened the old pattern of family life with the husband in the rôle of the main breadwinner and the wife in the rôle of home-maker. But Smelser thought that there was a »corrective mechanism« which checked the disintegration of the family. This was the practice by which male spinners appointed their wives and children to assist them as piecers and scavengers. Edwards and Lloyd-Jones, however, cast doubts on the validity of this argument. They show that in Preston in 1816 only 11.6 per cent of the child operatives were employed by their parents and they argue that »Smelser fell into the trap of assuming that operative spinners employing children were also the parents of those children«. Smelser believed that »the real crisis in child labour« occurred later — between 1820 and 1840 — but Edwards and Lloyd-Jones argue that the crisis was already evident before this.

It seems clear that family stability was most seriously threatened when workers migrated from the countryside to an expanding urban industrial centre. They lost a fixed social status and had to adapt themselves quickly to a much more rigid pattern of work. Migrant workers with no previous experience of any branch of the textile industry, would find it difficult to secure positions of authority in the factory system. They might find it difficult to adapt themselves to changing patterns of work within the factories. Mule spinners, for example, were not always able to operate self-acting mules. Edwards and Lloyd-Jones suggest that »it was the migrant family rather than Smelser's cotton spinning family which was facing the »increased differentiation of labour roles« and the consequent disruption of family equilibrium«¹⁵³.

CONCLUSION

The industrial revolution affected the social structure of textile communities and the lives of textile workers' families in many different ways. Throughout the period of industrialisation survivors of an older economic system — who worked with hand machines and lived in rural districts — existed side by side with the new type of wage-earning textile operatives who worked in factories using power driven machinery and lived in rapidly growing industrial towns.

153 *Ibid.*, p. 319.

In England textile workers who were engaged in spinning or weaving at home or in small village workshops — hand loom weavers and hand combers for example — survived until the 1860s. In France and Germany they were to be found much later. In 1914 there were still 27.000 hand looms in the French cotton industry — mainly in the Tarare district¹⁵⁴. In Germany in 1907 there were still about 47.000 hand loom weavers in the various branches of the textile industry¹⁵⁵. In Silesia there were said to be »a considerable number of hand looms [...] in the remoter districts, where throughout the winter weaving is the only possible occupation for the cottagers, and even in the summer the click of the shuttle is heard issuing from every cottage after twilight«¹⁵⁶.

One factor promoting the survival of village textile industries — particularly weaving — in France and Germany was the determination of the peasants to stay on the land. They would not give up their smallholdings to become full time factory operatives. Their standard of living declined and many could hardly have made ends meet but for the produce that they grew on their little plots of land. In these rural textile villages the structure of the community and family life did not change drastically in the early phase of the industrial revolution.

It was the establishment of factories that disrupted the former pattern of family and social life of the textile workers. A distinction may be made between two types of textile factory communities. The first was the village factory community which had generally been originally founded in a remote valley to make use of water power. Most of those who worked in these village factories were migrants from other districts. They came from different parts of the country — sometimes from abroad — and they had quite different backgrounds. They had to establish a new way of life for themselves. Not only had they to adapt themselves to the strict routine and discipline of factory life but they had to adjust themselves to new neighbours and to a new social life. In a number of these isolated textile communities the millowners adopted a paternal attitude towards their operatives and provided them with houses, a shop, a hall, a school, a church, and welfare services of a rudimentary character. Those who had formerly worked on the land might find that their employer was playing much the same rôle in their lives as the squire of their native village.

The second new type of textile community was the one that developed in large growing towns. Here the process of adjustment for the newly arrived worker was more difficult. He had to learn new methods of work in the factory. He might live in a slum far from his place of work. He might be in bad health owing to the nature of his work. The long hours in the mill left little time for family life. It took time for new social relationships to be formed by workers who were strangers to one another. It has been seen that many contemporary observers were highly critical of the new textile towns.

The Chartist leader Julian Harney declared that Manchester was »a damned dirty den of muckworms« and that he »would rather be hanged in London than die a natural death in

154 R. B. Forrester, *op. cit.*, p. 34.

155 Cotton 25.000, wool 13.000, and linen 9.000. Spinning was fully mechanised at this time. Domestic work also survived in certain industries using textile materials such as lacemaking, dressmaking, tailoring, knitting and the making of embroidery and ribbons. See *John Harold Clapham, The Economic Development of France and Germany, 1815 – 1914*, 3rd. ed., Cambridge 1928, pp. 291 – 300.

156 R. M. R. Dehn, *op. cit.*, p. 17 and W. Lochmüller, *op. cit.*, pp. 82 – 83.

Manchester¹⁵⁷. Georg Weerth regarded Bradford as the most disgusting manufacturing town in England. In 1844 he wrote to his brother: »Seit einem Monat halte ich mich in der traurigsten aller englischen Fabrikstädte, in Bradford, auf und denke recht fleißig an unser schönes Deutschland [...] Kein Theater, keine Gesellschaft, kein Wirtshaus, kein Lesezimmer, keine vernünftigen Menschen — nichts gibt es hier [...] Nichts als York-shiremen mit zerrissenen Frackröcken, schäbigen Hüten und Galgengesichtern«¹⁵⁸. Engels's description of life in Barmen in the 1830s¹⁵⁹, and Dr. Villermé's vivid account of the workers in the French textile towns in 1840¹⁶⁰ suggest that the social condition of spinners and weavers on the Continent was no better than in England.

It was not long before textile and other workers began to form new social relationships in their new environment. For some workers — particularly Catholics — the Church was the most important organisation in their lives outside the factory. But the local public house or dance hall was probably of greater significance for the majority of workers. The economist Leroy Beaulieu declared that for the French workers of the Second Empire the cabaret had taken the place once held by the Church¹⁶¹. Choral societies and debating clubs offered something more than drink, billiards, or darts. Indoor and outdoor sports varied from country to country and from district to district. Bowls were popular in France, skittles in Germany. For those who wished to improve their education there were popular lectures, evening classes, adult Sunday schools, reading rooms, and mechanics institutes. When Engels was in Manchester in 1844 he was surprised to discover how many English workers were well informed on a variety of subjects. He wrote: »Ich habe manchmal Arbeiter, deren Sammlerstücke nicht mehr zusammenhalten wollten, mit mehr Kenntniß über geologische, astronomische und andere Gegenstände sprechen hören, als mancher gebildete Bourgeois in Deutschland davon besitzt. Und wie sehr es dem englischen Proletariat gelungen ist, sich eine selbständige Bildung zu erwerben, zeigt sich besonders darin, daß die epochemachenden Erzeugnisse der neueren philosophischen, politischen und poetischen Literatur fast nur von den Arbeitern gelesen werden. [...] In dieser Beziehung haben besonders die Sozialisten unendliches zur Bildung des Proletariats gethan, sie haben die französischen Materialisten, *Helvetius*, *Holbach*, *Diderot* usw. übersetzt und nebst den besten englischen Sachen in billigen Ausgaben verbreitet. Strauß' *Leben Jesu* und Proudhon's *Eigenthum* circulieren ebenfalls nur unter Proletariern«¹⁶².

Workers also combined to form associations for industrial or political purposes. Such organisations were not infrequently forbidden — by the Combination Laws in England, the Penal Code in France and Bismarck's Anti-Socialist Law in Germany — but they generally survived as underground movements. In England the movements in favour of the People's Charter, the reform of the new Poor Law, the Ten Hours' Bill, the repeal of the Corn Laws, and parliamentary reform all received some support from the workers.

157 Julian Harney to F. Engels, December 16, 1850 in: *Frank Gees and Renee Métivier Black* (ed.), *The Harney Papers*, Assen 1969, p. 258.

158 Georg Weerth to Ferdinand Weerth, Jan. 10, 1844, in: *Georg Weerth*, *Sämtliche Werke*, Vol. V, Berlin 1957, p. 111.

159 F. Engels, *Briefe aus dem Wuppertal*, in: *Telegraph für Deutschland*, March-April 1839, MEW, Vol. 1, pp. 413–432.

160 L. R. Villermé, *Tableau de l'état physique et morale des ouvriers employés dans les manufactures de coton, de laine et de soie*, 2 vols, 1840.

161 G. Duveau, *op. cit.*, p. 499.

162 F. Engels, *Die Lage der arbeitenden Klasse in England* (edition of 1965), p. 242.

In France the establishment of the Second Republic (1848) and the Paris Commune (1871) and in Germany the revolution of 1848 and the rise of the Social Democrat Party were also examples of powerful political movements that were supported by the workers. The appearance in the nineteenth century of numerous workers' newspapers and journals were also a significant sign of the times.

Workers also combined to improve their condition by other means. Savings banks encouraged thrift and protected workers from having to seek charity or poor relief when they were unemployed. The first to be set up were in England in 1798 and in France in 1818. Friendly societies provided sick benefits and burial grants. Co-operative societies established retail shops, industrial workshops, banks and farming co-operatives. The first retail co-operative stores were set up in England soon after the Napoleonic wars. The famous Rochdale Pioneers of 1844 did not start something new but they did successfully operate the »dividend« system by which trading surpluses were returned to customers in proportion to their purchases. Co-operative banks were started in Germany in the 1850s — in the towns by Schulze-Delitzsch and in rural districts by Raiffeisen. Agricultural co-operative societies began in Denmark in the late 1860s and soon spread to Germany (Haas in East Prussia) and to France. Industrial co-operatives were advocated by the socialist leader Louis Blanc¹⁶³ but were not set up in France in significant numbers until after 1871¹⁶⁴.

All these activities of the workers must be considered when attempting to assess the affects of industrialisation upon textile workers and their families. The »pessimists« see nothing but misery coming from the setting up of »dark satanic mills«. Undoubtedly long hours, low pay, child labour, bad housing, poor health, and periods of short time and unemployment were grave social evils. But the action of the state in promoting factory legislation, the work of municipal authorities in removing slums and providing better sanitation, and the activities of the workers themselves to improve their lot by their own efforts also deserve to be considered.

163 *Louis Blanc*, *Organisation du Travail*, 1839, ed. by *John Arthur Ransome Marriott*, Oxford 1913.

164 *W. O. Henderson*, *Die industrielle Revolution: Europa 1780 – 1914*, Wien/München/Zürich 1971, pp. 143 – 46 (*Die Selbsthilfebewegung*).