

# *Urban Famine in Nineteenth-Century Britain: The Effect of the Lancashire Cotton Famine on Working-Class Diet and Health\**

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Subsistence crises in Britain attracted little attention until Peter Laslett published his essay 'Did the Peasants Really Starve?' in 1965.<sup>1</sup> Since then, the topic has been studied with increased interest and it has become commonly assumed that the more severe crises were accompanied by famine and, even, starvation. Indeed, "famine" might be said to have entered the historian's vocabulary during the 1970s. Unfortunately, while the term has been widely employed, it has not been used as an analytical concept to any great extent. Only a cursory glance at the studies which have appeared will show that no common usage of the term famine has emerged nor any philosophy of how it should be used to explain the sometimes quite disparate phenomena investigated. It is the aim of this article firstly to review the usage of the term famine and to suggest a typology from which standardized terms might be developed; and secondly to extend the study of subsistence crises from the early modern period into the urban and industrial society of the nineteenth century. The Lancashire Cotton Famine has previously been treated as a raw material crisis complicated by concurrent problems of over-production, but the hypothesis presented here is that it was also an occasion when the population of the cotton towns experienced a major disruption of earnings which brought food shortages, nutritional deficiencies, an epidemic spread of infectious disease, and even death; in short, all the principal characteristics of a true famine.

## I

Recent writings on famine in Britain have concentrated on dearth during the sixteenth to eighteenth centuries.<sup>2</sup> So far they have fallen into one or other

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<sup>1</sup> P. Laslett, *The World We Have Lost* (1965), ch. 5.

<sup>2</sup> See J. Stevenson, 'Food Riots in England, 1792-1818' in R. E. Quinault and J. Stevenson, eds. *Popular Protest and Public Order* (1974); J. Walter and K. Wrightson, 'Dearth and the Social Order in Early Modern England', *Past & Present*, 71 (1976), pp. 22-42; D. E. Williams, 'Were "Hunger" Rioters Really Hungry? Some Demographic Evidence', *P. & P.* 71 (1976), pp. 70-5; A. Booth, 'Food Riots in the North-West of England, 1790-1801', *P. & P.* 77 (1977), pp. 84-107; M. W. Flinn, ed. *Scottish Population History from the 17th century to the 1930s* (Cambridge, 1977). Britain has also benefited from the writings of A. B. Appleby, *Famine in Tudor and Stuart England* (Liverpool, 1978), J. D. Post, 'Famine, Mortality, and Epidemic Disease in the Process of Modernization', *Economic History Review*, 2nd ser. XXIX (1976), pp. 14-37, later more fully developed as J. D. Post, *The Last Great Subsistence Crisis in the Western World* (Baltimore, 1977), and W. J. Shelton, *English Hunger and Industrial Disorders* (1973).

of two analytical categories. In the first, famine has been assumed to be the probable result of the sharp upward movement of grain prices after a harvest failure, and the indicators of its presence have been taken to be price riots (often termed bread riots or hunger riots). It has thus been discussed in connexion with a temporary breakdown in law and order and an increase in petty crime. These stresses and tensions in communities facing a possible subsistence crisis have been seen as signals triggering off an "emergency system" of measures to avert famine,<sup>3</sup> a line of thought developed from E. P. Thompson's concept of the "moral economy" of the crowd by historians trying to discern a process of self-regulation in pre-industrial societies.<sup>4</sup> Second, the possibility that famine was present during periods of dearth has attracted historical demographers seeking causal factors which might explain sudden increases in mortality or morbidity. The principal function of these inquiries has been to establish famine as a cause of death. Prof. Appleby put the demographic approach most clearly in his *Famine in Tudor and Stuart England*: "What is famine? It is defined here as a crisis of mortality caused by starvation and starvation-related disease, a crisis measured by the increase in the number of deaths".<sup>5</sup> Such a definition is highly ambiguous since Appleby was using the terms "famine" and "starvation", two quite distinct phenomena, interchangeably. Despite the apparently scientific nature of his definition, famine, a socio-economic dysfunction of food supply, has been equated with starvation, a physiological condition to which it may, but does not automatically, lead. Neither approach to the study of famine has been able to provide evidence of the extent to which food consumption was restricted, which would distinguish the social crisis, famine, from the individual condition, starvation. Although Appleby's model included the precept that "In time of famine, the available food—that is, the supply—is insufficient for the consuming needs of all the population—that is, the demand",<sup>6</sup> the lack of quantitative evidence on this point is a major shortcoming of the recent studies of famine. Do historians assume that when famine is present food consumption has totally ceased? That would make sense of Appleby's otherwise irrelevant study of the biology of starvation. If so, Prof. Flinn's conclusion that "Even in a famine relatively few deaths could be directly attributed to starvation"<sup>7</sup> is essential to bring the debate back into perspective.

On reflection, it will be seen that famine was present for such a prolonged time during the worst periods of dearth, as in the early 1620s,<sup>8</sup> that it must have been a term used in the past to identify a less acute condition than starvation. Probably, it was a descriptive term for any period when food supplies were restricted or interrupted in their flow to market so that the utilization of food stocks occurred at a faster rate than replacement. In history, famine was frequently not much more than a period when people may have been hungrier than usual. With this more limited view in mind, the connexion

<sup>3</sup> Walter and Wrightson, 'Dearth and the Social Order', p. 41.

<sup>4</sup> E. P. Thompson, 'The Moral Economy of the English Crowd in the Eighteenth Century', *P. & P.* 50 (1971), pp. 76-136.

<sup>5</sup> Appleby, *Famine*, p. 1.

<sup>6</sup> *Ibid.* pp. 9-10.

<sup>7</sup> Flinn, *Scottish Population History*, pp. 4-5.

<sup>8</sup> *Ibid.* p. 117; see also Appleby, *Famine*, ch. 9, pp. 146-7.

between famine and price riots can be better understood, though there is the danger that over-emphasis on social disorder may obscure the fact that food consumption was continuing, albeit at a somewhat reduced level. Prof. Smout's evaluation that "It would not always be right to infer famine, local or otherwise, from the movement of grain prices and imports"<sup>9</sup> should be a salutary warning, particularly if the evidence of food consumption is so weak that historians need to claim that price rioters were actually hungry.<sup>10</sup> After all, the proximity of hunger in early modern Britain is not in dispute, but Laslett's principal concern in 'Did the Peasants Really Starve?' was to show that famine or restricted food consumption could, and did, lead to death. In conjunction, his three proofs of this were first, "a sudden sharp increase in mortality"; second, a decline "in conceptions and perhaps in marriages"; and third, that "the stated cause of death of some of those buried was in fact starvation or diseases caused by malnutrition".<sup>11</sup> Unfortunately, famine is usually less conclusive in its outcome and Laslett's model creates two problems which historians have not yet overcome. First, the pattern of increase in burials does not always follow periods of very high food prices closely enough to permit the association of the two events as cause and effect.<sup>12</sup> Second, and even less clear, is the causal connexion between famine and amenorrhoea which was implied by Laslett and developed at greater length by Appleby.<sup>13</sup> A reduction in conceptions does not necessarily mean that amenorrhoea was present as a famine-induced physiological state among the female population of child-bearing age, nor that the loss of sexual appetite, referred to by Appleby in his over-literal application of the biology of starvation, had occurred. If famine, *crise de subsistance*, or food shortage, whatever the phenomenon should be termed, had any effect on fertility in early modern Britain, it was probably as a psychogenic factor rather than a physiological one.

Table 1 suggests a possible typology for a more systematic study of famine. Its starting point is the proposition that many low-income groups such as labourers and low-paid craftsmen experienced restricted food supplies over quite long periods. Further, the limited variety of food materials available led to a monotonous diet which in turn reduced total food intake.<sup>14</sup> Thus the term restricted diet is used to indicate a long-term, semi-permanent state rather than a short-term crisis or the precursor to famine. Secondly, it seems that much of the recent work on famine has centred on what is termed psycho-

<sup>9</sup> Flinn, *Scottish Population History*, p. 114.

<sup>10</sup> Williams, 'Were "Hunger" Rioters Really Hungry?'

<sup>11</sup> Laslett, *World We Have Lost*, p. 119. The underlying presence of hunger at all times can be assumed in early modern society even if, in its least threatening form, it was no more than that normal diets left people dissatisfied. Such feelings were still expressed by rural families in the early twentieth century, though possibly they were more likely to be food cravings rather than hunger. See B. S. Rowntree and M. Kendall, *How the Labourer Lives: A Study of the Rural Labour Problem* (1913), p. 240.

<sup>12</sup> For example, see M. Drake, 'An Elementary Exercise in Parish Register Demography', *Econ. Hist. Rev.* 2nd ser. XIV (1962), p. 434; J. Meuvret, 'Demographic Crisis in France from the Sixteenth to the Eighteenth Century' in D. V. Glass and D. E. C. Eversley eds. *Population in History* (1965), pp. 518-19; Post, *Last Great Subsistence Crisis*, p. 122 et seq. for a recent discussion of the relationship between famine and disease.

<sup>13</sup> Laslett, *World We Have Lost*, pp. 118-19; Appleby, *Famine*, pp. 8-9, 118.

<sup>14</sup> J. Yudkin, 'Nutrition and palatability, with special reference to obesity, myocardial infarction and other diseases of civilization', *Lancet* (1963) I, p. 1335.

Table 1. *A Typology of Famine*

<i>Type</i>	<i>Causal Factors</i>	<i>Affected Persons</i>	<i>Effects</i>
Restricted diet	Low income Limited food supply Limited food technology Poor environment	Communities: various trade/income groups, e.g. labourers or craftsmen. At-risk groups: pregnant/lactating women, children	Food cravings Low nutritional status Restricted physical growth Limited physical effort
Psycho-social famine	Harvest failure Market disequilibrium Loss of income source	Communities: various trade/income groups At-risk groups: male wage earners	Loss of social status and self-esteem Food hoarding Fear of hunger Social disorder Migration Psychogenic morbidity
Nutritional or true famine	Failure of market response Lack/breakdown of emergency system	Family/individual variation appears At-risk groups: women, children, elderly	Hunger Morbidity: nutritional deficiency diseases low resistance to infectious disease
Starvation	Isolation of family/individual	An individual condition	Reduction in fertility Rapid physical degeneration Mortality

*Note:* This does not represent a chronology of famine; for example, no attempt has been made to include the recovery phases which follow famine.

social famine in Table 1. Harvest-failure or market disruption (such as sudden price rises) or interruption of income led to the hoarding of food, fear, panic, and social disorder. In cases of psycho-social famine there was perhaps little, if any, change in nutritional status and any increase in morbidity was probably due to previously-existing environmental problems or to an acceleration in the transmission of disease caused by social disorder. It is therefore important to distinguish nutritional or true famine from psycho-social famine. True famine would emerge only when, with food markets continuing in disequilibrium, public policy (if such existed) failed to provide for the at-risk groups in a community. It is under these circumstances of chronic under-nutrition that deficiency diseases and other forms of morbidity induced by low resistance to infection were present. Lastly, starvation as such was rare, being most likely to have occurred among isolated families or individuals. In this typology, starvation retains its biological meaning—a process of wasting due to acute under-nutrition which, if unchecked leads to death after a relatively short period. This definition in no way simplifies the problem of using demographic data; reductions in fertility and increases in mortality can reflect starvation but, unfortunately, no clear-cut distinction can be made between mortality from starvation and that resulting from morbidity generated by famine. In short, starvation is not an appropriate term for analyzing either social or epidemiological phenomena.<sup>15</sup>

Subsistence crises became more limited as new employment, better trans-

<sup>15</sup> Phrases such as 'widespread starvation' should be avoided: see Post, *Last Great Subsistence Crisis*, p. 49, for such usage.

port, and improved agriculture reduced the isolation of regional economies. In Prof. Post's words "The old biological regime was shattered almost everywhere in Europe during the second half of the eighteenth century".<sup>16</sup> While the subsistence crises of the 1740s and 1816-17 were followed by large-scale increases in mortality on the Continent, the effects in Britain were less noticeable on both occasions. Yet the economic transformation Britain was undergoing did not immediately reduce the possibility of such crises. Just as the crisis in north-west England in the early seventeenth century was "in no little part a result of the clothing depression",<sup>17</sup> so the centres of food rioting in the late eighteenth and early nineteenth centuries lay in urban textile districts.<sup>18</sup> As cotton textile production became concentrated in Lancashire, the population of that area became highly vulnerable to interruptions of earnings, and it is loss of income that is the principal factor in converting any crisis into a famine. The following study of Lancashire in the early 1860s is therefore an attempt to discuss a major subsistence crisis as a case study within the typology suggested in Table 1.

## II

When the American Civil War began, the cotton industry had just completed a decade of prosperity and expansion culminating in the boom of 1858-61. Its significance for the British economy was such that cotton manufactures accounted for 38 per cent of domestic exports by value and created 7.1 per cent of gross national income. Events in the United States were of paramount importance to Lancashire because of America's position as the principal supplier of raw material. Britain bought nearly 71 per cent of the American crop in 1859-60, which amounted to 80 per cent of the United Kingdom's

total imports of raw cotton. During 1860 the industry's expansion was checked by falling sales at home and abroad and a further sharp reduction in demand from the United States in 1861. Stocks of cotton continued to rise even after the Civil War had begun and imports of raw cotton remained high throughout 1861 while the Union blockade of Confederate ports was ineffective.<sup>19</sup> When prices of raw cotton finally began an upward movement in September, the short-time working in the cotton mills which followed in October 1861 reflected the needs of the manufacturers to sell accumulated stocks rather than a shortage of raw material. By early November, 49 mills had stopped, 119 were working half-time, and the first public meeting to discuss the nature of the distress among the operatives had been held in Blackburn.<sup>20</sup>

It was ironic that the arrival of the Cotton Famine for the operatives occurred when there was no shortage of cotton in Lancashire either as raw

<sup>16</sup> Ibid. p. 108.

<sup>17</sup> Appleby, *Famine*, p. 146.

<sup>18</sup> Booth, 'Food Riots', pp. 84-5, 106.

<sup>19</sup> D. A. Farnie, *The English Cotton Industry and the World Market, 1815-1896* (Oxford, 1979), pp. 136-42 gives a full explanation of the causes of overproduction in 1861 and the effects of the outbreak of hostilities in the United States on Lancashire.

<sup>20</sup> R. A. Arnold, *The History of the Cotton Famine (1865)*, pp. 57-61; see also P. J. Augar, 'The Cotton Famine, 1861-65: A Study of the Principal Cotton Towns during the American Civil War' (unpublished D.Phil. thesis, University of Cambridge, 1979) for a detailed analysis of mill closures.

material or finished goods. Early in November 1861, the Poor Law Board warned Boards of Guardians in the cotton districts of their apprehension that distress might reach significant proportions. During the remainder of the year these fears seemed unfounded but during the early months of 1862 unemployment increased to unprecedented levels. A major over-production crisis in cotton had enormous implications for Lancashire as nearly one-fifth of the county's population were directly employed by the industry.<sup>21</sup> By May 1862, pauperism was rising fast in the worst-affected towns. In Preston 8.2 per cent, in Blackburn 6.6 per cent, and in Wigan 5.1 per cent of the population were paupers, though these figures did not include the thousands of families described as being out-of-work. With them, 22,000 persons out of a total of 81,000 in Preston, and 17,000 out of 63,000 in Blackburn were in need of "aid" owing to the collapse of their incomes over the previous four or five months.<sup>22</sup>

Throughout 1862 accounts of growing poverty, shortages of food, and ill-health in the cotton districts began to circulate. Edwin Waugh's series of articles in the *Manchester Examiner and Times* was drawn on heavily by Mrs Ellen Barlee for her *A Visit to Lancashire in December 1862*, by which time the concept of "Lancashire, with its population of 500,000 starving operatives"<sup>23</sup> had acquired the attraction of suffering nobly borne for Victorian philanthropy. Expressions of sentiment were initially stimulated by the appearance of letters in *The Times* signed "A Lancashire Lad".<sup>24</sup> "Can yo' help us a bit", a reported plea from a mill-girl begging at a roadside loosened purse-strings up and down the country and even abroad.<sup>25</sup> As the year progressed, other towns at first not much affected by unemployment or short-time working began to be drawn into the depression. During November, the Guardians faced the task of relieving over 22 per cent of the population of the cotton districts, a total of early in December 1862; after which there were signs of recovery in a number of towns—Preston, Blackburn, Stockport, Ashton-under-Lyne, Stalybridge, Oldham, and Bury among them—from January 1863. From May onwards, Arthur Arnold estimated that "there was certainly now no Cotton Famine, in a literal sense" as Egyptian and Indian cotton began to be utilized successfully, notably in Oldham, with the industry back to "half-time" by midsummer 1863.<sup>27</sup> The glutted markets had disappeared, with cloth sold at an unexpectedly high price in 1862, and new lines becoming profitable. The unexpected

<sup>21</sup> Arnold, *Cotton Famine*, p. 59 dates the letter from C. P. Villiers, President of the Poor Law Board, as 11 Nov. 1861; Farnie, *English Cotton Industry*, Table 3, p. 24.

<sup>22</sup> Villiers sent H. B. Farnall to Lancashire as Special Commissioner to supervise Poor Law operations: *Mr Farnall's Report to the Poor Law Commissioners on the Distress in the Cotton Manufacturing Districts* (P.P. 1862, XLIX pt. 1), pp. 2-9, 90-7.

<sup>23</sup> Ellen Barlee, *A Visit to Lancashire in December 1862* (1863), p. 3.

<sup>24</sup> The first appeared on 14 April 1862. See extracts reprinted in E. Waugh, *Home-Life of the Lancashire Factory Folk during the Cotton Famine* (1867), pp. 209-17, where the writer is identified as Mr John Whittaker.

<sup>25</sup> M. E. Rose, 'Rochdale Man and the Stalybridge Riot: The Relief and Control of the Unemployed during the Lancashire Cotton Famine' in A. P. Donajrodski ed. *Social Control in Nineteenth-Century Britain* (1977), p. 190; Augar, thesis, p. 78.

<sup>26</sup> 'Numbers relieved by Guardians and Local Committees, 1862-65', *Reports of the Central Relief Committee*, Manchester, Fund for the Relief of Distress.

<sup>27</sup> *Ibid.* Arnold, *Cotton Famine*, pp. 226, 304, 320, 331; Farnie, *English Cotton Industry*, pp. 159-61.

protraction of the war kept cotton prices high and exports in demand, so that further resumption of employment followed and the numbers relieved came down to 170,268 at the end of November 1863. In the following year there was a final setback as the end of the war seemed imminent. Cotton prices collapsed, and bank rate rose to nine per cent. Over one hundred firms went bankrupt and unemployment in November 1864 reached almost 150,000 before prices and employment finally resumed their 1861 levels.<sup>28</sup>

The Cotton Famine thus created in Lancashire a period of heavy unemployment which lasted from the spring of 1862 until the summer of 1863, a period of at least fifteen months during which time the numbers in receipt of public assistance approached nearly 25 per cent of the total population. In view of the recently-expressed comment that "the extent of the distress in Lancashire seems, however, to have been exaggerated",<sup>29</sup> social conditions during the depression need some elaboration. Large numbers of families in Lancashire suffered the loss of incomes which, with the employment of married women, had frequently reached levels of between 30 shillings and £2 per week before the Famine. While Arnold thought the majority of operatives consumed rather than saved, some of them undoubtedly had considerable savings in property and cooperative societies. After the first two months or so, once these savings had been used up, a process of realization of capital followed: "the best clothes were turned into food—the neat household furniture was consumed—the beds were exchanged for straw—the much-loved musical instruments and the little cottage library were sold—and the trim cottage itself was often exchanged for a single room, an attic, or a cellar".<sup>30</sup> So, during 1862, Lancashire's pawn-shops became choked with goods, "glutted with the heirlooms of many an honest family" as Arnold put it, and even with rents remitted, resources and credit at shops became exhausted. In many cases families faced the autumn and winter of 1862-3 having already experienced a restricted diet for some months, ill-clad, and in comfortless housing.<sup>31</sup>

Most had no option but to turn to the Poor Law Guardians or to the Relief Committees which locally distributed the money donated to the Central Executive Committee in Manchester. Rates of assistance varied. In Blackburn, men engaged on relief work in the quarries were paid one shilling per day, but work was not available nor suitable for all.<sup>32</sup> Many Relief Committees paid assistance to families on the basis of 2s. per head per week, plus coal and clothing where necessary but parishes were said to pay less at between 1s. 3d. and 1s. 6d. per head per week, and usually without clothing.<sup>33</sup> Such families experienced a reduction in income from between £1 10s. od.—£2 os. od. per week to about 10s. per week, and remained in that state for anything between

<sup>28</sup> 'Numbers relieved'; Farnie, *English Cotton Industry*, pp. 161-6.

<sup>29</sup> Farnie, *English Cotton Industry*, p. 156.

<sup>30</sup> J. Watts, *Facts of the Cotton Famine* (1866), p. 231. The same process is described by other writers: see J. G. T., *The Cotton Famine* (1863); Arnold, *Cotton Famine*, pp. 75-6; Barlee, *Visit to Lancashire*, pp. 7-8, 14.

<sup>31</sup> Arnold, *Cotton Famine*, p. 75; Watts, *Facts*, pp. 254-8.

<sup>32</sup> Waugh, *Home-Life*, pp. 4-6; see Rose, 'Rochdale Man' for the modification of the labour test during the Cotton Famine.

<sup>33</sup> Barlee, *Visit to Lancashire*, pp. 4, 10.

one to two years. As the loss of income meant a marked reduction in diet when "animal food of the best qualities and in large quantities" was no longer available, problems arose as to what relief work could be undertaken without physical distress. Apart from the difficulties of getting mill-hands to perform outdoor manual labour without training,<sup>34</sup> the reduction in diet meant that there was a tendency for men to reduce their work output. A strike against the reduction of pay for road-work occurred at Blackburn in April 1862, and men were also noted to be limiting their efforts in the nearby stone quarries.<sup>35</sup> Tasks set in the Preston stone-yard were physically unattractive to men on a reduced diet: breaking up one ton of stone for one shilling or carrying three tons of stone to a stack for one shilling were difficult for operatives to perform, and further discontent in the town led to disputes over out-door work in July 1862 and April 1863.<sup>36</sup> In part, opposition to the labour test was because of its association with the "hereditary paupers". Oldham found "it was practically impossible" to introduce a labour test, and Ashton-under-Lyne had the greatest difficulty in getting men who "regarded themselves as the honorary pensioners of the nation" to undertake it. Although the Poor Law Board had appointed H. B. Farnall as Special Commissioner "to check that labour tests were being utilized and encourage their introduction 'to deter and suppress imposture'",<sup>37</sup> the development of the practice of substituting indoor school attendance for out-door manual labour was of major importance in allowing operatives to conserve energy and maintain body-heat during the winter of 1862-3, as well as solving the otherwise intractable problem for the authorities of how to provide work. Flattery, praise, and visits by middle-class sympathizers were successful overall in maintaining social order, and men, boys, and girls learnt to read and write as a "labour test" while women attended "sewing schools". Most schools provided soup and bread as an additional attraction.<sup>38</sup> Early in 1863, however, there were signs that patience was wearing thin. In Manchester, a political demonstration in favour of the Northern cause and linked somewhat ineptly to a distribution of bread, broke up in a riot. Rioting became widespread in March, beginning at Stalybridge, and spreading to Ashton-under-Lyne, Dukinfield, and Hyde. Further disturbances followed at Stockport, Wigan, and Preston in April 1863. In some instances food and clothing were taken by the mobs which formed, though the underlying cause was not desperation but the continuing friction between operatives and local Relief Committees composed frequently of "vulgar, ill-bred men, proud of the brief authority with which their duties invested them".<sup>39</sup> This friction centred on conditions imposed by committees in their distribution of aid, such as arbitrary rationing or the introduction of a ratio of cash to kind. While operatives began to demand "All money and no stuff" as early as 1862,

<sup>34</sup> *Reports of Robert Rowlinson on the Public Works (Manufacturing Districts) Acts (1863-4)* (P.P. 1866, LXI), pp. 3-4.

<sup>35</sup> Arnold, *Cotton Famine*, p. 74; Waugh, *Home-Life*, p. 7.

<sup>36</sup> A. Hewitson, *History of Preston* (Preston, 1883), pp. 190-1; Waugh, *Home-Life*, p. 28.

<sup>37</sup> *Mr Farnall's Report* (P.P. 1862, XLIX pt. 1); Arnold, *Cotton Famine*, pp. 70-2; for a more detailed study of working-class resistance, see Augar, thesis, ch. 5.

<sup>38</sup> See Mary Bayly, *Lancashire Homes and What Ails Them* (2nd edn. 1863) pp. 35-6; also Barlee, *Visit to Lancashire*, pp. 24, 67-117; Watts, *Facts*, p. 308.

<sup>39</sup> Arnold, *Cotton Famine*, pp. 254-71.



committees looked askance at a complete distribution in cash which they saw as encouragement to drinking and gambling. Men with pawntickets to redeem, however, felt cheated and were unable to recover their goods.<sup>40</sup>

### III

Contemporary historians of the Cotton Famine believed that there was "no observable deterioration in the health of the population". Modern accounts have tended to agree,<sup>41</sup> though there is a substantial amount of evidence which points to a different conclusion. In the Annual Report of the Registrar General for 1861, attention was drawn to the "higher mortality in Lancashire".<sup>42</sup> This was by no means the result of the early stages of the Cotton Famine but rather highlighted Lancashire as a densely-populated area with considerable sanitary problems. Both 1860 and 1861 were healthy years in the Registrar General's view but events in 1862 led Dr John Simon, Medical Officer to the Privy Council, to consider the possibility that infectious disease might reach epidemic proportions. Loss of income was leading to overcrowding as families evicted "when means of rent-paying had ceased" began to move in with others. Lack of bedding, adequate clothing, or fuel supplies compounded the hazards of the situation as the winter of 1862-3 approached, and rumours of the presence of typhus caused Simon to send Dr George Buchanan to Lancashire to make studies of the health of the distressed operatives and the girls in the sewing-schools. Dr Buchanan's report to Simon was made at the height of the distress in December 1862. It confirmed the potential dangers: while in some towns such as Darwen, Bacup, and Bolton typhoid fever was found "with unusual prevalence", scattered cases of "true typhus" were already present in Blackburn, Chorley, and Salford. There was more typhus in Manchester, and at Preston "the epidemic was considerable".<sup>43</sup> The report also noted the appearance of other diseases associated with nutritional disorders, such as scurvy, and concluded that "there is a peculiarly low state of health among the unemployed operatives of the cotton towns". More importantly, it contained the direct warning that existing allowances were inadequate to maintain long-term health.<sup>44</sup> Even before the completed report was received, Simon sent Dr Edward Smith to report upon the economics of the operatives' diet.<sup>45</sup>

Smith's rapid survey was based on visits to six cotton towns between 2 December 1862 and 16 January 1863. Simon's letter of instruction required him to ascertain "the least cost per head per week for which food can be bought in such quantity and in such quality as will avert starvation diseases

<sup>40</sup> Barlee, *Visit to Lancashire*, pp. 42-51, 53-4; Arnold, *Cotton Famine*, p. 147; see Augar, thesis, for resistance to the imposition of conditions in the distribution of charity, especially pp. 145-8.

<sup>41</sup> Arnold, *Cotton Famine*, p. 227; Farnie, *English Cotton Industry*, p. 157.

<sup>42</sup> *Twenty-Fourth Annual Report of the Registrar General of Births, Deaths, and Marriages in England* (P.P. 1863, XIV), p. 34.

<sup>43</sup> *Fifth Report of the Medical Officer of the Privy Council, 1862* (P.P. 1863, XXV), p. 18.

<sup>44</sup> *Ibid.* Appendix V, Reports relating to the Sanitary Condition of the Cotton Towns of Lancashire and Cheshire, 1, by Dr Buchanan, on the Health of the distressed Operatives, pp. 304, 311.

<sup>45</sup> *Ibid.* Appendix V, 3, by Dr Edward Smith, on the Nourishment of the distressed Operatives. For biographical details of Edward Smith see T. C. Barker, D. J. Oddy, and J. Yudkin, *The Dietary Surveys of Dr Edward Smith, 1862-3* (1970) and C. B. Chapman, 'Edward Smith (?1818-1874) Physiologist, Human Ecologist, Reformer', *Journal of the History of Medicine*, XXII (1967), pp. 1-26.

from the unemployed population",<sup>46</sup> and to recommend the most nutritious diet this allowance would buy. He collected a good deal of information about food prices but these were not abnormally high. There was no accompanying harvest crisis nor was food in short supply.<sup>47</sup> Smith's principal work was the collection of diets from "a large number of persons" and, though this was something of a grandiose claim, his report to Simon contained the diets of 36 single persons and 44 families which had been obtained by interviews in Lancashire. In 16 cases, Smith got both pre-Famine diets (by asking people to recall what they ate in normal times) as well as the current diet while unemployed.<sup>48</sup> This allows a rare insight into the adjustment which the unemployed had made in their diets. Smith's report confirmed that the families he interviewed were typical cotton workers normally in receipt of sizable incomes ranging from 15s. od. up to £4 per week. Consequently, they had spent liberally on food; single persons living separately commonly spending 5s. 7d. per week and families 2s. 7½d. per head per week. Loss of employment meant that single people were reduced to spending 2s. 5d. or less per week and families were spending 1s. 9d. or 1s. 10d. per head per week. Expenditure had therefore fallen by nearly 57 per cent for single persons and 33-37 per cent for families. The overall changes can be seen in Table 2, which shows the principal foods consumed by the people surveyed. Foods such as vegetables, cheese, eggs, and fish which played only a minor role in the diet have been left out of the table. Although purchases of vegetables were maintained during the depression, eggs and fish disappeared from the diet. Table 2 provides a first conclusion about behaviour during famine or any period of food restriction: it is likely that people will attempt to retain a mixture of foods in their diet as long as possible. In the Cotton Famine there was no immediate recourse to one food only, such as bread, as a form of economy.<sup>49</sup> Habit doubtless played a part in retaining a variety of foods but these families were still spending at levels above the maximum of 1s. 6d. per head per week allocated by the *Guardians*, and against which Buchanan's warnings of long-term inadequacy had been made.

Table 2. *Weekly Food Consumption per head by Cotton Operatives*

	<i>Bread</i> (lb)	<i>Oatmeal</i> (lb)	<i>Potatoes</i> (lb)	<i>Sugar</i> (lb)	<i>Fats</i> (lb)	<i>Meat</i> (lb)	<i>Milk</i> (pt)
"Normal" diet	10.8	1.4	6.0	1.0	0.5	1.5	1.4
Winter 1862	7.0	1.1	1.9	0.8	0.3	0.3	1.4

Source: Derived from the *Fifth Report of the Medical Officer of the Privy Council, 1862*, Appendix V, 3 (P.P. 1863, xxv). For methods of calculation, see T. C. Barker, D. J. Oddy and J. Yudkin, *The Dietary Surveys of Dr Edward Smith, 1862-3* (1970).

<sup>46</sup> *Fifth Report*, Appendix V, 3, p. 323. He was instructed to visit Manchester, Ashton-under-Lyne, Wigan, Blackburn, Stockport, and Preston.

<sup>47</sup> Farnie, *English Cotton Industry*, p. 157.

<sup>48</sup> *Fifth Report*, Appendix V, 3, pp. 374-455. His report also included analyses of the foods supplied to the unemployed through soup-kitchens and sewing-schools and provided a set of recommended diets for the operatives.

<sup>49</sup> This family budget analysis contradicts the "Giffen good" view of consumption. For a recent argument based on the view that Giffen-good behaviour did occur (though without supporting evidence), see A. B. Appleby, 'Grain Prices and Subsistence Crises in England and France, 1590-1740', *Journal of Economic History*, xxxix (1979), pp. 865-87.

Within these aggregate figures for operatives' diets was a smaller group identified by Smith as the same persons or families who had given him both their "normal" diet and their currently restricted food intake. The diets of seven individuals, all unemployed female operatives whose ages, when given, were 19 or 20 years, are shown in Tables 3 and 4. These women had earned 10s. od. a week in normal times and had spent 5s. 3d. or 52 per cent of their income on food. For young women, even moderately active ones, the "normal" diet suggested by recall is certainly lavish and, as Table 4 indicates, had an energy value of over 4000 calories per day. When unemployed, their incomes had fallen to an average of 3s. 8½d., a drop of 63.5 per cent. In cutting back their food intake, an interesting variation occurred in the amount foods were reduced. Bread consumption fell by one-third, but meat and potatoes fell by 83 per cent and 64 per cent respectively. Sugar showed the least fall of any food item. However, the mean figures are misleading because three women gave up meat and milk altogether and four of the seven gave up potatoes completely. Although this evidence is very limited, it looks as if single-person households were under greater stress in the Cotton Famine and were more likely to be at risk in nutritional terms as they tended to adopt a diet of tea, bread, and butter or treacle. Confirmation of this kind of behaviour can be found in Dr Buchanan's report on the health of operatives, where he notes "a poor girl at Preston" who tried to keep herself on 15d. a week left over after paying the rent: "This might have been difficult with the best of management; but her notions of economy were comprised in bread and tea, and death by scurvy was the result of them".<sup>50</sup> Nine families are also shown in Tables 3 and 4. All had children ranging from two to 14 in number. While Smith did not obtain every detail of family income from them, it looks as if their "normal" income had been on average just under £2 per week. When unemployed, their income had been reduced to about 14s. od. per week.<sup>51</sup> Like the single women, the main change in their food purchases was to buy less meat and potatoes, both items being reduced by about 60 per cent. Bread consumption was down by 17 per cent but there was no reduction at all in the amount of sugar bought, though Smith noted a considerable shift from solid sugar to

Table 3. *Changes in Weekly Food Consumption per head*

Group	Bread (lb)	Oatmeal (lb)	Potatoes (lb)	Sugar (lb)	Fats (lb)	Meat (lb)	Milk (pt)
<i>Single persons</i>							
"Normal" diet	12.5	2.2	6.3	1.2	0.6	1.2	1.9
Winter 1862	8.2	1.6	2.3	0.9	0.4	0.2	0.8
Percentage change	-33	-27	-64	-25	-36	-83	-58
<i>Families</i>							
"Normal" diet	7.6	0.7	6.3	0.6	0.4	1.2	2.7
Winter 1862	6.3	1.0	2.4	0.6	0.2	0.4	1.8
Percentage change	-17	+43	-62	nil	-50	-60	-33

Source: As Table 2.

<sup>50</sup> *Fifth Report*, Appendix V, 1, p. 309.

<sup>51</sup> Average income for six families was £1 19s. 6d.; average food expenditure for five families was 13s. 11½d.

Table 4. *Changes in Daily Nutrient Intake per head*

Group	Energy value (Kcals)	Protein (g)	Fat (g)	Carbo-hydrate (g)	Iron (mg)	Calcium (g)
<i>Single persons</i>						
"Normal" diet	4,160	105	105	696	25.3	0.65
Winter 1862	2,555	64	51	457	16.5	0.44
Percentage change	-39	-39	-51	-34	-35	-32
<i>Families</i>						
"Normal" diet	2,745	68	75	446	15.6	0.50
Winter 1862	1,955	51	41	345	12.9	0.42
Percentage change	-29	-26	-46	-23	-17	-16

Source: As Table 2.

Table 5. *Sources of Energy in the Cotton Operatives' Diet*

Group	Energy value (Kcals)	Protein (%)	Fat (%)	Carbo-hydrate (%)	Total (%)
<i>Single persons</i>					
"Normal" diet	4,160	10.1	22.7	66.9	99.7
Winter 1862	2,555	10.0	18.0	71.5	99.5
<i>Families</i>					
"Normal" diet	2,745	9.9	24.6	65.0	99.5
Winter 1862	1,955	10.4	18.9	70.6	99.9

Source: As Table 2.

treacle which could be used as a substitute for butter.<sup>52</sup> Milk consumption fell only by one-third due, presumably, to the increased amount of oatmeal, since milk (and possible sugar or treacle) was commonly eaten in conjunction with porridge. Thus both single persons and families showed some movement away from fresh foods towards cereals, which is reflected in the change in the proportion of energy derived from carbohydrate sources shown in Table 5. Both single persons and families cut back on the sources of fat in their diets, such as meat and dairy produce, by between 4-6 per cent of total energy value and substituted foods high in carbohydrate by approximately by the same amount.

#### IV

If the diets shown in Tables 3 and 4 were typical of what people ate during the winter of 1862, the question must arise whether the descriptions of hunger and patterns of ill-health and disease common during the Cotton Famine were justified. Diets which provided energy values of 2,000-2,500 calories a day were certainly not starvation diets even if they did not reach the levels which Smith regarded as adequate. In his report, Smith suggested that the cotton operatives needed 4,300 grains of carbon and 200 grains of nitrogen per head per day, equivalent, in modern terms, to about 2,800 calories and 80 grams of protein. However, he was careful to point out to Simon that he had picked families who were still in good health though, in some cases, with the comment

<sup>52</sup> *Fifth Report*, Appendix V, 3, p. 350.

that they were thinner than when on a normal diet.<sup>53</sup> These people's diets were restricted and monotonous in terms of the variety of meals that could be provided but they were not dissimilar from the diets of many groups of people with low incomes in Britain during the 1860s, whose diet was frequently or even permanently at this level. Table 6 shows the diets of several groups of low-paid indoor workers in domestic industries (silkweavers, glovers, stocking-knitters, and shoemakers) and also rural labourers in most of the counties of England. These surveys were made in 1863 by Smith as part of a further inquiry into diet by Simon, which Smith himself claimed to be "the first attempt which has been made in any country to ascertain the national dietary".<sup>54</sup> It is thus possible to compare diets in the Cotton Famine with contemporary diets of other workers and their families. What distinguished the diets of the distressed cotton operatives from other low income groups in the 1860s was that a period of high earnings had given them the opportunity to buy more sugar. Arnold's view that they normally ate "animal food of the best qualities and in large quantities" is not the most obvious difference between their diet in Tables 2 and 3 and the 1863 diets in Table 6: meat consumption by cotton workers at 1.2-1.5 lbs per head per week is 20-50 per cent higher than in the 1863 family budgets, but sugar at 1.0-1.2 lbs per head is 140-200 per cent higher than the 1863 diets. Furthermore, during the depression cotton workers clung more tenaciously to their sugar than to meat, fats, or milk. With loss of income their logical reaction was to cut down on meat and potatoes because to make a cooked meal from these foods required additional expenditure on fuel. They were encouraged in this course of action by authorities like Smith who thought potatoes to be a dear food. Although his general advice to maintain a variety of well-cooked, flavoursome foods in the diet was unusually enlightened for his day,<sup>55</sup> Smith was of course unaware of the importance of potatoes as a source of vitamin C in English diets. The cost of fuel also prevented any extensive adoption of home-baking during the

Table 6. *Diets of Indoor and Rural Workers in England in 1863*

<i>Average Weekly Food Consumption per head</i>						
<i>Group</i>	<i>Bread (lb)</i>	<i>Potatoes (lb)</i>	<i>Sugar (lb)</i>	<i>Fats (lb)</i>	<i>Meat (lb)</i>	<i>Milk (pt)</i>
Indoor workers (125 families)	9.1	2.4	0.5	0.3	0.8	0.8
Rural workers (377 families)	11.6	6.6	0.4	0.3	1.0	1.6
<i>Daily Nutrient Intake per head</i>						
<i>Group</i>	<i>Energy value (Kcals)</i>	<i>Protein (g)</i>	<i>Fat (g)</i>	<i>Carbo- hydrates (g)</i>	<i>Iron (mg)</i>	<i>Calcium (g)</i>
Indoor workers	2,190	55	53	370	12.5	0.36
Rural workers	2,760	70	54	460	15.9	0.46

Source: *Sixth Report of the Medical Officer of the Privy Council, 1863* (P.P. 1864, XXVIII), Appendix 6; Barker, Oddy, and Yudkin, *Dietary Surveys*.

<sup>53</sup> *Ibid.* pp. 320-1, 332-3.

<sup>54</sup> *Sixth Report of the Medical Officer of the Privy Council, 1863* (P.P. 1864, XXVIII), Appendix 6. 'Food of the Lowest Fed Classes', by Dr E. Smith, p. 216.

<sup>55</sup> *Fifth Report*, Appendix V, 3, pp. 321, 338-9.

depression. Shop-baked bread was already quite usual in Lancashire because many married women worked and housing conditions were scarcely conducive to the practice of domestic arts. Mrs Bayley, on her visit to Blackburn in November 1862, noted that complaints about the quality of bread led to flour being distributed to allow home-baking, but it is doubtful if the resumption of home-baking was widespread or cheaper.<sup>56</sup> In total, these changes in the diet during the Famine show a shift in consumption patterns away from cooked meals towards the eating of bread and treacle, with oatmeal or maize porridge and tea as the only hot foods available. Thus many people in Lancashire experienced a phase of restricted diet as suggested in Table 1. Similar patterns might be found among low-income groups in Britain up to the First World War and, though populations could continue to exist on such a diet for long periods of time, this was achieved at the cost of low nutritional status, poor health, and restricted physical growth. Such a diet, after all, was at the basis of the discussion about "physical deterioration" early in the twentieth century.

## V

The question which remains to be answered in the light of the suggested typology is whether famine occurred in the cotton districts, either of a psycho-social nature or in its nutritional sense. Although much of the evidence of distress in contemporary accounts comes from one or two towns which were blackspots, 14 towns in the cotton districts still had more than 10 per cent of their population on relief as late as June 1863.<sup>57</sup> The distress was therefore sufficiently widespread in Lancashire to suggest that the crisis went further than the reduction of a particularly well-paid group of workers to temporary poverty during which restricted diets became the norm for some months.

Firstly, there was hunger. Contemporary accounts refer frequently to its presence in emotive terms, it is true, but some indications suggest that it was widespread once savings had been used up. Some hunger may have been generated by the change in life-style: "I'm twice as hungry now-a-days as when I worked in the mill", said a Stockport man engaged in field-work, "I could eat all the bread we get now at one meal, and never seem to have enough". This statement has a factual sound about it, as does the man who described taking home fresh bread to his family one evening: "We had na had a meal for so long that I said, 'Well come what may, we'll ha' a feed, today, at ony rate' and the bread was new and so we eat it all at once. This morning there was nothing but the meal for the children".<sup>58</sup> Hunger was present in varying degrees, from the girl yearning for something more than the monotony of bread, who "had na had a taste o' grease for a long time",<sup>59</sup> to men reporting

<sup>56</sup> Bayly, *Lancashire Homes*, p. 36.

<sup>57</sup> Waugh's articles were based on Blackburn, Preston, and Wigan; Mrs Bayly's book on Wigan, Blackburn, and Preston. In June 1863, the 12 towns with the highest proportion of their populations on relief were: Glossop 33.1 per cent, Preston 23.3 per cent, Prestwich 18.0 per cent, Stockport 17.4 per cent, Wigan 14.4 per cent, Chorley 14.3 per cent, Rochdale 13.8 per cent, Manchester 13.6 per cent, Bury 12.4 per cent, Todmorden 12.2 per cent, and Blackburn 11.9 per cent (*Reports of the Central Relief Committee*).

<sup>58</sup> Barlee, *Visit to Lancashire*, pp. 17, 56-7. "Meal" presumably meant oatmeal or maize porridge.

<sup>59</sup> *Ibid.* p. 38.

for the labour-test who had not eaten since the previous day and could then be seen to be conserving their energies when the overseer was not in sight.<sup>60</sup> As Lancashire was already a largely urban society, food supplies came from shops and, when incomes were exhausted, from the Guardians or Relief Committees. In urban areas, poaching or crop-stealing was seldom possible.

Secondly, the effects of a restricted diet did begin to show over time in terms of low physical status. Although the lugubrious humour—"Poverty seldom dees. There's far more kilt wi' o'er-heyting an' o'er-drinkin' nor there is wi' bein' pinched"—and the sentimental poetry, and the tirade by Mrs Bayly against married women working outside the home, tended to divert attention from the physical strain imposed by the crisis, there is evidence that people became thin, particularly married women who, as mothers of families, bore the brunt of the attempt to eke out food supplies.<sup>61</sup> Waugh's *Home-Life of the Lancashire Factory Folk* is full of examples of comfortless houses populated by the elderly, the sick, widows, and mothers relying on Relief Committees to feed their families. It was the women to whom Waugh spoke on his visits: men were out, or stood silent while women explained their difficulties. The common theme throughout his visits to poor families was the ill-health and thinness of the mothers. Women on their own, as lodgers or widows, fared as badly: in Preston, the Trinity Ward Relief Committee "spoke of the difficulties which 'lone women' have to encounter in these hard times".<sup>62</sup> Occasional descriptions raise questions of nutritional status: a pregnant woman expecting her fourth child, gone blind "and has been so for more than a year, from inflammation in her eyes", or a ten year old child with thin hair "gettin' like a wisp o' hay", both suggest severely deficient diets.<sup>63</sup> Dr Buchanan, a professionally-skilled observer of communities in poor health, reported to Simon that there was "a simple decline from the normal standard of health and strength". There was "a wan and haggard look about the people" that was "nowise habitual to them". Local medical practitioners advised Buchanan that parents' health had deteriorated more obviously than children's, particularly that of mothers "who most of all starve themselves, have got pale and emaciated" and had become prone to anaemia.<sup>64</sup>

Thirdly, this low physical state was apparent as an epidemiological problem both of nutritional disorders and infectious diseases. Among the primary nutritional disorders, death by starvation was extremely rare, if it occurred at all. Even in instances which were possible starvation cases, the cause of death recorded might well omit reference to starvation. In Ormskirk, in 1863, a man and his wife were recorded as dying from typhoid, though it was reported that the local registrar "believes they died from destitution: nobody would go near them while the woman lived, except a female, who only went in three times"—an interesting comment on the social isolation which so often preceded

<sup>60</sup> Ibid. p. 56; Waugh, *Home-Life*, p. 7.

<sup>61</sup> Waugh, *Home-Life*, pp. 30-1 et seq. Arnold and Watts did not report such phenomena but it should be remembered that both books were written from the viewpoint that relief had been adequate, though they differed on the extent to which the cotton manufacturers had provided for the unemployed operatives' needs.

<sup>62</sup> Ibid. p. 57.

<sup>63</sup> Ibid. p. 54; Barlee, *Visit to Lancashire*, p. 40.

<sup>64</sup> *Fifth Report*, Appendix V, 1, pp. 300-1, 304.

death from starvation in earlier centuries and which was echoed in the 1860s by the description of the "wanderers from town to town" that Waugh met on the roads, people who had "let go their hold of home (if they have any) and drift away".<sup>65</sup> However, some nutritional deficiency diseases were more evident. Of these, scurvy was perhaps the most surprising disease present during the Cotton Famine. Buchanan noted scurvy in various stages of development: "actual scurvy has been seen among cotton workers in Stockport, Preston, Blackburn, and Salford. Almost all the cases were in women." Swollen and bleeding gums were found at Preston and Oldham, and less-obvious tendencies to haemorrhage were also present as noted by "one district-surgeon in Manchester, who says that in his practice all bruises and slight wounds are singularly difficult to heal".<sup>66</sup> Rickets, gastro-intestinal infections, and xerophthalmia were also present in Lancashire in the 1860s, but no sensitive and experienced commentator like Buchanan would commit himself by linking their existence solely to the Cotton Famine. Xerophthalmia, for instance, was noted at Manchester, Salford, Wigan, Oldham, Chorley, and Preston, though Buchanan could not identify the sufferers as the families of the unemployed rather than any other low-income group such as Irish labourers.<sup>67</sup> Rickets and tuberculosis might have increased among children in Preston and Stockport but, on the whole, unemployed mothers meant more home care and longer breast-feeding. Though several writers felt an improvement in children's health had resulted there was concern for the future among local medical practitioners who foresaw dangers "from prolonged suckling and from want of milk after weaning".<sup>68</sup>

Despite the tantalizing brevity of so many of these references, the lowered nutritional status of many of the unemployed cannot be in doubt and the presence of infectious diseases in epidemic form provided further signs that the population of the cotton districts was under stress. The "great famine disease" in Europe had always been typhus. Its course is not easy to trace because it was not distinguished from typhoid or other fevers until the middle of the nineteenth century. Typhus had last been seen in the cotton towns in 1847-8 according to Buchanan but it reappeared in the summer of 1862 on a considerable scale. In Preston and Manchester, it assumed "an epidemic form".<sup>69</sup> Buchanan's report also drew attention to the unusual scale with which he had met other infectious diseases. "Lung diseases of a sort to be induced and aggravated by exposure have been rife" he commented on the presence of tuberculosis (common in Lancashire even in prosperous times),

<sup>65</sup> *Twenty-Sixth Annual Report of the Registrar General of Births, Deaths, and Marriages in England* (P.P. 1865, XIV), p. 27; Waugh, *Home-Life*, p. 60.

<sup>66</sup> *Fifth Report*, Appendix V, 1, p. 302.

<sup>67</sup> *Ibid.* pp. 301-2.

<sup>68</sup> *Ibid.* In Third World countries today prolonged breast-feeding followed by weaning on to a starchy diet low in protein and deficient in milk produces kwashiorkor, a form of protein-energy malnutrition causing heavy mortality among children under five.

<sup>69</sup> *Fifth Report*, appendix V, 1, p. 299. As late as 1861, William Farr's supplement 'On the Causes of Death in England' to the *Twenty-Fourth Report of the Registrar General*, p. 262, found it necessary to distinguish the symptoms of typhus, relapsing fever, and typhoid, pointing out that these three diseases "cannot yet be satisfactorily discriminated in the national returns". See A. H. Gale, *Epidemic Diseases* (Harmondsworth, 1959), ch. 6 for the characteristics of continued fevers. The London Fever Hospital began to distinguish typhus from typhoid in its admissions as early as 1849. See C. Creighton, *A History of Epidemics in Britain*, II (Cambridge, 1894), p. 213.



bronchitis, pneumonia, and whooping cough. Like modern nutritionists, Buchanan knew that poor diet was a factor in these diseases because people with low nutritional status were less resistant to infection. Rightly, he included "bad diet" as a cause of other diseases:

the following complaints were met with in epidemic form:—Chicken-pox in a part of Manchester; measles in Ashton, Blackburn, Bury, Chorley, Manchester, and, to a less extent, in Salford, Preston, and Wigan; whooping-cough in Chorley, Manchester, Salford, and Stockport; 'scarlatina in Ashton, Darwen, Manchester, Oldham, and, a month or two before, in Stockport; typhoid rather frequent in Bolton, Bury, Chorley, Darwen, and Stockport.<sup>70</sup>

All these examples point to the Cotton Famine achieving the characteristics of a true, nutritional famine by the end of 1862, even though levels of food intake, at least among the families recorded by Dr Edward Smith, were still surprisingly high.

Demographic evidence for the presence of famine is also difficult to separate from other influences and will be referred to only briefly in this study. The trend in marriages showed the clearest relationship with the Cotton Famine. A drop in the number of marriages in England and Wales began in 1861 and continued through 1862. The distress in the cotton districts was seen by the Registrar General as the principal cause of this fall and, by the summer of 1863, an upsurge in marriages was noted in Lancashire as employment recovered.<sup>71</sup> Mortality was less obviously affected since there were countervailing influences at work. On the one hand, there was some comment that the crisis was tending to reduce infant mortality due to less withdrawal of maternal care from the home. Evidence bearing out this contention is difficult to find and the Registrar General's Annual Report for 1862 was less hopeful and more realistic: "Nursing in straitened circumstances may be better for children than ~~the~~ fulness of good cheer without it; but when hard times are prolonged . . . the greatest amount of parental attention will not expel physical decline, sickness or death itself from the dwelling."<sup>72</sup> On the other hand, Lancashire's poor environmental conditions were a factor in the crude death rate being significantly above the national average (22.4 per thousand) during the 1860s. As Table 7 shows, 1860-2 were years of slightly lower mortality in Lancashire. Although the crude death rate began to rise in 1863, it was still below the decennial average of 26.9 per thousand, and the peak of mortality in the 1860s was not reached until 1866 when the death rate reached 30.4 per thousand. The high mortality in Lancashire in 1865-6 did not follow the Cotton Famine closely enough to demonstrate any clear causal relationship, and the epidemic of scarlet fever and the reappearance of cholera in 1865 further complicated the picture.<sup>73</sup> The mortality rates for scarlet fever and typhus show peaks in 1864 and 1865 respectively. It is equally difficult to show any relationship between birth rate and the Cotton Famine. Birth rate in Lancashire, like the

<sup>70</sup> *Fifth Report*, Appendix V, 1, p. 302.

<sup>71</sup> *Twenty-Sixth Ann. Rep. of the Registrar General*, p. 40.

<sup>72</sup> *Twenty-Fifth Annual Report of the Registrar General of Births, Deaths, and Marriages in England* (P.P. 1864, xvii), p. 28.

<sup>73</sup> See Gale, *Epidemic Diseases*, p. 70 for a brief account of the "last epidemic of cholera" in 1866. It appeared at Hull and was carried across country to Liverpool by migrants to America. Gale's account is based on Creighton, *History of Epidemics*, II, p. 857.

Table 7. *Crude Birth and Death Rates in Lancashire in the 1860s*

	Date	Births (per 1,000)	Deaths (per 1,000)
	1860	36.8	23.7
	1861	37.7	25.9
	1862	38.7	25.7
	1863	37.4	26.4
	1864	37.9	26.4
	1865	37.5	28.5
	1866	37.6	30.4
	1867	38.5	27.0
	1868	39.5	27.3
	1869	37.9	26.5
Mean	1860-9	38.0	26.9
England and Wales	1860-9	35.3	22.4

Source: *Thirty-Third Annual Report of the Registrar General of Births, Deaths, and Marriages in England*, Tables 12 and 16.

death rate, was well above the national average (35.3) for the 1860s and in 1862 reached 38.7, the second highest of the decade. Although the birth rate fell to 37.4 in 1863 and remained below the decennial average until 1867, there was insufficient variation from the mean to suggest that the Cotton Famine had any significant effect.

Despite the exceptionally well-documented nature of this crisis, it is hard to disentangle many of the influences at work. Little consideration so far has been given to the psychological effects of the Cotton Famine. These were considerable: all the contemporary accounts refer to the pride of the factory operatives and their distaste at going to the Guardians or Relief Committees for aid. Under these circumstances, much of the friction during the Cotton Famine resulted from the operatives' reactions against the use of policies established to deal with "hereditary paupers". Several accounts describe Lancashire as though it were a community in a state of shock; Waugh, particularly, describes the disorientated wandering from town to town. Protests during the Famine have been described in detail by Dr Augar. These ranged widely in aim and execution. Some were working-class meetings organized for the purposes of modifying the relief system: with limited aims of this nature, they often succeeded. Others, such as attempted mass migration, were doomed to failure.<sup>74</sup> Sometimes friction between operatives erupted in an outbreak of sudden blind fury: on occasion in the form of anonymous letters, at other times as riots. Operatives rioted when they felt themselves being used as part of a political demonstration in Manchester early in 1863, but as rioting spread during the spring there were many signs that boredom and irritation at the continuing lack of work were important in triggering off such reactions. None of these events were bread riots (though 14,000 two-pound loaves were taken at Manchester), even if they were committed by hungry men, but they do emphasize that famine as a socio-economic phenomenon is as much a state of mind as a physical condition.

<sup>74</sup> Augar, thesis, ch. 6, particularly p. 170 et seq.

In summary, events in Lancashire between 1861 and 1863 were a major catastrophe for the working classes as the crisis within the cotton industry so familiar as a cotton "famine" became a famine in a truer sense for the operatives. Within the terminology of Table 1, widespread unemployment and loss of income resulted in 10-25 per cent of the population being on a restricted diet for anything up to two years and possibly 5-8 per cent continuing in that state until late 1864 or early 1865. There was certainly a psycho-social famine in Lancashire showing all the components suggested in Table 1 with the exception of psychogenic morbidity, for which no evidence exists. Circumstantial evidence also suggests that the population was affected by a nutritional famine, though no examples of any severely-limited diets are available for analysis. The presence of nutritional deficiency diseases and lowered resistance to infectious disease, however, is well documented. There were very few references to death from starvation, which is not surprising since individual variation in people produces a range of physiological and psychological responses to such adverse environmental and socio-economic conditions as exist during a famine. Death from starvation is the ultimate but rarely the dominant outcome, so that historians should be wary of using starvation as an automatic explanation of increased mortality in times of famine.

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