

Growth and Structural Change in the English Dairy Industry, 1860-1930¹

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AFTER years of neglect the English dairy industry is now receiving the recognition it deserves from historians.² From the latter decades of the nineteenth century, changes in both the demand for and supply of agricultural produce led to a fundamental restructuring of English agriculture. Dairying became the most valuable sector and liquid milk production the most important single enterprise.³ Thus, P J Perry writes that 'it is scarcely possible to find an area of Britain where dairy farming was not on the increase during this period.'⁴ In similar vein, C Ó'Gráda, noting the growth of and structural change in dairying, observes that this 'specialisation in liquid milk production made perfect sense' in the

circumstances of the time.⁵ Without dissenting from the general line of argument it is necessary to sound a word of caution. There is a real danger, even in the more specialized literature, of neglecting temporal and regional variations that are an essential feature of change.

A first indicator of the variations to be found comes from the annual agricultural statistics. The broad pattern of change is well known. The number of cows and heifers in milk or in calf grew by 35 per cent in the years 1871/5 to 1911/5. Moreover as Whetham's analysis shows, there was a clear change in the geographical location of dairying.⁶ However, neither three 'snap-shots' of the structure of cattle enterprises nor an overall growth rate does justice to a process of change that varied considerably in both geographical and temporal terms. Thus at one extreme the counties of Huntingdon and Middlesex experienced an absolute decline in numbers whereas in Wiltshire, Hertfordshire, Cornwall and Berkshire the increase was over 60 per cent, in Hampshire and Sussex over 70 per cent and in Essex in excess of 100 per cent. A more complex pattern emerges when one looks at changes over time. Every county in England saw an

¹ I am particularly indebted to the late Professor M W Flinn whose interest and encouragement led to this article first being written and to the two anonymous referees for their helpful comments.

² See for example, P Mathias, *The First Industrial Nation*, 1983, p 317; F Crouzet, *The Victorian Economy*, 1982, p 172; W Hamish Fraser, *The Coming of the Mass Market, 1850-1914*, 1981, p 155 and G E Mingay, ed, *The Victorian Countryside*, 1981, Vol I, pp 21-2 and p 112.

³ The details are as follows:

Percentage Contributions to Gross Agricultural Product

	England 1867-77		England and Wales 1894-8	England and Wales 1930-1
Wheat	22	7		2
Beef	11	14		15
Mutton	11	11		8
Milk	12	18		27
Poultry	2	6		10

Source: T W Fletcher 'The Great Depression of English Agriculture', *Econ Hist Rev*, 2nd ser, XIII, 1961, p 432, *Agricultural Output of England and Wales, 1930/1* (Parl Papers, 1933-4, xxvi), pp 57-8.

⁴ P J Perry, *British Farming in the Great Depression, 1870-1914*, 1974, p 116. Perry rather plays down the importance of liquid milk production in the 1870s arguing, though without any supporting figures, that it was less important than butter and cheese making 'until the depression was well advanced'. My own estimates suggest that by 1880 in England over 50 per cent of milk production went to the liquid milk trade.

⁵ C Ó'Gráda, 'Agricultural Decline 1860-1914', in R Floud and D N McCloskey, eds, *The Economic History of Britain since 1700*, Vol II, 1981, p 181.

⁶ E H Whetham 'The Changing Cattle Enterprises of England and Wales 1870-1910' *Geographical Journal*, CXXIX, 1963 pp 378-80 reprinted in W E Minchinton, ed, *Essays in Agrarian History*, volume II, 1968, pp 211-5. See also E H Whetham and C S Orwin, *History of British Agriculture, 1846-1914*, 1964, especially pp 137 and 358. There are problems in using the agricultural statistics. The number of cows and heifers in milk or in calf is only an approximation to the national dairy herd, containing as it does, cows rearing beef cattle. Further, the first returns are an unreliable base for later comparison because of the devastating, but uneven, impact of the cattle plague of 1865/6.

increase in numbers in the first half of the 1870s, though this reflects, in part, a recovery from the effects of the cattle plague of the 1860s. However, in the second half of the decade, twelve counties, including the major dairying areas of Cheshire, Gloucestershire, Shropshire, Somerset, Staffordshire and Wiltshire, experienced a decline in numbers. For the most part, the 1880s were years of expansion. With the exception of Middlesex (and Huntingdonshire in the first half of the decade) every county increased its dairy herd, in some cases quite substantially. In contrast the 1890s proved to be problematic in many parts of the country. In the first half of the decade twelve counties experienced a fall in numbers. Again, major dairying counties – Dorset, Gloucester, Somerset and Westmorland – were affected but so too were relative newcomers, such as Berkshire. The second half of the decade saw declining numbers in fifteen counties, seven of whom had experienced falls in the earlier period. Although the worst was over by the turn of the century, ten counties saw a diminution in their dairy herds in the period 1901–5. This time, however, losses were concentrated in the newer dairying areas such as Bedfordshire and Norfolk. Expansion characterized the following years but the immediate pre-war years saw decline in seven counties. These figures reveal a clear contrast between the late 1870s, when problems were centred on the old dairying districts, and the 1890s and early 1900s when it was newer areas that were more seriously affected. On top of this can be seen a number of regional variations. Middlesex, unsurprisingly, saw a steady decline in numbers checked only in the late 1890s. In the east of the country the number of cows and heifers in milk or in calf in Huntingdonshire began to decline in the early 1880s and, after a brief recovery in the second half of that decade, continued to fall until the immediate pre-war years. This fact reflects, more than anything, the problems of beef production. Similarly,

in Rutland, numbers fell throughout the 1890s and early 1900s but did not recover to the 1880s level until after the Great War. More to the point are the problems experienced in the south-western counties of Dorset, Gloucester, Somerset and Worcester. The latter experienced a sluggish overall growth rate with serious reversals in the 1890s and again before the war. In Gloucestershire numbers scarcely changed, the slight gains of the 1880s being wiped out by the falls of the 1890s. Even in Somerset, and to a lesser extent Dorset, though numbers increased in the long term, there were appreciable setbacks in the late 1870s and the 1890s.

These figures are only a starting point. The county, however convenient as an administrative unit, cannot be taken as a homogeneous agricultural area. Ideally, an analysis of the original returns for the agricultural censuses would give the appropriate local detail. However, in the absence of such a work, some progress can be made by combining contemporary estimates and the literary evidence to be found in the reports of Royal Commissions and the pages of the agricultural press.

I

Traditionally, dairy farming was synonymous with the manufacture of butter and cheese in the farmhouse. In the mid-nineteenth century cheese making was to be found throughout the country, though predominantly in the midland and western counties. Buoyant prices almost certainly led to an increase in production in the 1850s and 1860s and, though cheese imports were growing, there was no major threat to the well-being of this branch of dairying. According to the most reliable writers of the time cheese manufacture accounted for as much as 40 per cent of the milk output on English farms. In other words, given herd size and likely milk yields, this represented an annual make of some 1.8 million

hundredweights.⁷ By the early twentieth century the position had changed dramatically. According to the 1908 Census of Production, the amount of cheese sold from all classes of holdings in England was a mere 362,000 hundredweights. To this should be added a further 53,000 hundredweights for factory production and a further 18,000 on-farm consumption. Thus, in the course of some fifty years the volume of production had fallen by 75 per cent. Not surprisingly, there were far fewer areas concentrating on cheese making in the 1900s. Production was largely confined to the less accessible districts of the south-western and north-western counties, with scattered areas of limited importance in the midland and northern counties. A mere 2 per cent of the total make came from the eastern counties of England.⁸ At the same time, the import of cheese grew inexorably, more than doubling in volume between the late 1860s and the outbreak of the Great War. Superimposed on the long-term trend were a number of sharp, short-term, increases – notably in 1873, 1878, 1897 and 1900.

Although not a serious threat to the best English cheeses, imported Cheddars were reliable in terms of quality and compared favourably with the bulk of the home make which was not of prime quality. Of equal, if not greater, importance was the price factor. Little is known of retail prices but with imported cheeses wholesaling at between 10s and £1 less per hundredweight than average cheese in the 1870s and 1880s it is not unreasonable to assume that there was an appreciable (if not equal) difference in retail prices.⁹ Even when price differentials had

been greatly reduced by the end of the century greater reliability still tilted the balance in favour of imported cheese in comparison with ordinary English cheeses. The trend of imported cheese prices was clearly downward. In the late 1860s and early 1870s prices hovered around the 60s a hundredweight mark but by the mid-1890s they were in the region of 45s. The decline, however, was not uniform. 1879 and 1885 saw price falls of some 15 per cent while in 1895 prices fell by just under 10 per cent. Such sharp short-term fluctuations, superimposed on a long downward trend, created conditions in which ordinary cheese making was no longer profitable. Only producers of best quality cheeses and specialist makes could hope to survive.

The impact of this competition, however, varied from county to county. In Cheshire, which remained a major cheese producing county, there was a steady contraction in farmhouse manufacture. It was in the north of the county that cheese making was first abandoned. J Ashton, farming near Tarporley saw this as the 'consequence of the large importation of American and Canadian cheeses for several seasons past . . .'¹⁰ And this comment was made in 1877 before the traumatic price fall of 1879. Certainly after that disastrous year there was a further reduction in cheese making in the east as well as the north of the county. However, there is a danger of overstating the extent of change and the willingness with

150 and information given to the Royal Commissions on Agriculture, especially *Minutes of Evidence*, PP, 1881, xv, QQ 1836-1838 and *Minutes of Evidence*, PP, 1894, xvi, pt iii, Q 42, 271.

⁷ There are major problems in estimating milk yields and usage in the third quarter of the nineteenth century. For a detailed consideration of these problems and an attempt to estimate the size and structure of the English dairy industry see D Taylor 'The Development of English Dairy Farming, 1860-1930', unpublished DPhil thesis, Oxford University, 1971, chap iv, and for a summary of the main findings, D Taylor 'The English Dairy Industry, 1860-1930', *Econ Hist Rev*, 2nd ser XXIX, 1976, pp 585-601.

⁸ *Census of Agricultural Production, 1908*, PP 1912-3, x, p 56.

⁹ Generalizations are difficult to make given the paucity of data. The figures in this paragraph are drawn from the yearly *Agricultural Statistics, Report on Wholesale and Retail Prices*, PP 1903, LXVIII, p

¹⁰ J Ashton 'Cheese Making in Cheshire', *Journal of the British Dairy Farmers Association* (hereafter *JBDFA*) i, pt i, 1877, p 19. See also J Sadler 'Dairy Farming in Cheshire, 1883-1908', *Journal of the Bath and West of England Society*, (hereafter *JBWES*) 5th Ser, III, 1908-8, pp 182-6 and W B Mercer, 'Dairying in Cheshire' *JBDFA*, XLVII, 1935, pp 35-47. Further information relating to Cheshire comes from *Royal Commission, Minutes of Evidence*, PP, 1881, xvii, QQ 56783, 56809 and 56,822-3. I am also grateful to the late Mr F Williamson of Tarporley, Cheshire, for several stimulating discussions on the development of dairy farming in the country. It should be noted that Cheshire cheese makers, responding to changes in local demand, changed to an earlier-ripening and milder cheese in the 1890s. Although a successful response locally, there was some loss of the London market.

which it was made. Nonetheless, grim reality forced changes in farming practices. Profitability declined still further in the 1890s and dairy farmers in the south of the county were now abandoning the cheese tub. Thus, by the early twentieth century cheese making was largely confined to the central and western districts of Cheshire. Elsewhere the liquid milk trade had taken over and a mere 25 per cent of the milk produced in the county was converted into cheese.

The relative resilience of cheese making in Cheshire owed much to favourable geographical factors and inherited skills but even these could not prevent a substantial (if unquantifiable) reduction in farmhouse cheese making in the county. In surrounding areas the retreat of traditional dairying was even more pronounced. In Lancashire, by the end of the 1870s, cheese making had been largely abandoned south of the Ribble. In the 1880s areas further north, around Garstang for example, witnessed a sharp decline in cheese making, but it was not until the early twentieth century that it was abandoned in the east of the county.¹¹ However, some farmers remained in business making the local soft cheese for which a market remained, notwithstanding the inroads made by the imported Cheddars.

A similar pattern emerges when one looks at Derbyshire and Staffordshire. In the latter, cheese making was on the decline in the 1860s but the shake out was accelerated in the subsequent decade. As a consequence, as the Richmond Commission was informed, farmhouse cheese making was all but

finished.¹² In fact, there was a brief revival in the mid- to late-1880s but this was not long lasting. Similarly, in Derbyshire the decline dated from the 1860s, with 1865 an important short-term stimulus. By 1880 it was estimated that cheese making in the county had declined by 50 per cent compared with 1870. Moreover, during the 1880s the trend continued with an almost total abandonment of farmhouse cheese making by dairy farmers living within five miles of a railway line.¹³ Only in the less accessible upland areas of the north-west of the county did traditional dairying persist.

These two counties, however, are interesting for another reason for it was here that one found the greatest concentration of cheese factories which many contemporary commentators felt would be the solution to the problem of foreign competition. Lack of uniformity stemmed from a pattern of production that reflected the art of the individual cheese maker producing to his or her own recipe. Under the influence of Joseph Harding, of Marksbridge in Somerset, an attempt was made to standardize and put on a more scientific basis the manufacture of Cheddar cheese. The number of farmers who took up the new practice was limited but in the cheese factory there existed the possibility of producing a standard and uniform cheese. The success enjoyed by American factory cheese led the Royal Agricultural Society in 1868 to carry out an investigation into their system. The enquiry was instigated by Lord Vernon who, two years later, was behind the decision of the Derbyshire Agricultural Society to introduce a factory system on a

¹¹ Anon, 'Lancashire Dairy Farming', *JBDA*, I, pt ii, 1878, pp 33-8. T H Holborn, 'Lancashire Cheese Making' *JBDA* XXV, 1911, pp 21-3. 'Report of Mr Wilson Fox on the Garstang District of Lancashire' *Royal Commission* PP, 1894, xvi, pt 1, p 7. There were, however, examples of dairy farmers reverting to cheese making as liquid milk prices fell, T Young 'Dairy Husbandry in Lancashire and Cheshire' *Journal of the Royal Agricultural Society of England*, (hereafter *JRASE*) 3rd ser, LXXVI, 1915, pp 97-110. See also T W Fletcher 'Lancashire farming during the Great Depression' *Ag Hist Rev*, 9, 1961, pp 17-42.

¹² *Royal Commission, Minutes of Evidence*, PP 1881, xvii, Q 34,465. See also W T Carrington, 'On Dairy Farming' *JRASE*, 2nd ser II, 1865, p 344. Comparing the returns per cow for the manufacture of cheese and butter and the sale of milk he arrived at the following figures: £15 per cow for butter making; £16 per cow for cheese making; and £18 per cow for milk selling.

¹³ J R Bond, 'Derbyshire Farming Past and Present', *JRASE*, 3rd ser XCIII, 1932, pp 165-89. G Gibbons, 'Report on the Cheese making in Derbyshire', *JRASE*, 2nd ser XVII, 1881, pp 533-41. *Royal Commission, Minutes of Evidence*, PP, 1881, xv evidence of Mr J Coleman, especially QQ 5783-5, 5809 and 5819.

limited scale in the county. Two factories were established initially and two American experts, the brothers Schmerhorn, were brought over as managers. Technical problems and the opposition of local cheese factors were overcome and the initial success of the factories led others to experiment. The exact number of cheese factories opened in the county is not clear but at least six were in operation by 1874. The idea spread beyond Derbyshire into Staffordshire and some sixteen were to be found along the North Staffordshire Railway between Derby and Ashbourne.¹⁴ Derbyshire cheese did not sell well but more success was enjoyed with the manufacture of Cheddar. Indeed, in Staffordshire it was noted that factory cheese sold well because of the large quantities of spoilt cheese produced on the farms. However, the movement instead of mushrooming petered out. The factories that did survive into the 1880s and 1890s did so more because they had become adjuncts of the liquid milk trade—acting as safety valves, regulating the supply of milk—than because of their prime purpose. The speed with which this change took place is striking. As early as 1874, only four years after the founding of the factory system in England, the Derby factory had found a more lucrative outlet and was sending milk to London. Economic considerations were of paramount importance, as was amply demonstrated in Derbyshire and Staffordshire, but psychological factors also played a part, as can be seen from the failure to establish factory production in the cheese-making strongholds of Cheshire and Somerset. Irrespective of the reasons for the limited development of factory cheese production, there can be little doubt as to its insignificance. In 1908 the total output from all the factories in England and Wales was a mere 53,000 hundredweights.

But if factory cheese production found little support in Somerset it would be a

mistake to assume that the making of farmhouse Cheddar was unimportant. Despite fierce competition from imported cheese, the dairy farmers of the county continued to produce cheese, through the 1880s and 1890s. As late as 1893 a contributor to the *Journal of the British Dairy Farmers' Association* could still comment on the limited amount of liquid milk sold and the strength of local opposition to this new trade.¹⁵ However, the collapse of prices in 1895/6 brought a rapid, if belated, reversal of traditional practices. Summer cheese production combined with liquid milk sales in the winter became more common as the decade progressed. By the early years of the twentieth century it was noted that new circumstances had resulted in 'many a cheese tub on its side' and in its place 'the milk churn with its fortnightly remittance'.¹⁶ In the early twentieth century only some 20 per cent of the county's milk was made into cheese. Nonetheless, the change was later and less extensive than in neighbouring counties.

In Wiltshire, for example, the move out of cheese making was clearly discernible in the 1860s in parts of the north and east of the county, but it was in the following decade that the greatest change took place.¹⁷ One indication of change comes from the number of cheese factors operating in the county. In 1855 there were some eighteen rising to twenty in 1859. However, by 1880 there were only ten, falling to a mere five in 1885. Numbers remained at this level until the early twentieth century when there was a further decline. In 1911 only one cheese factor operated in the county.¹⁸ It is not possible to chart with precision the decline in cheese making but some indication of the scale can be gleaned from the local press. *The*

¹⁵ G Gibbon, 'The Dairy Industry of Somerset', *JBDFA*, VIII, 1893, p 75.

¹⁶ E G F Waller 'The Dairy Industry of Somerset' *JBDFA*, XX, 1906, p 26.

¹⁷ See J R Jefferies, *Hodge and His Masters*, 1880, and the *Toilers of the Field*, 1894, and M F Davies, *Life in an English Village*, 1910.

¹⁸ Details taken from Kelly's Directories for Wiltshire.

¹⁴ *Agricultural Gazette*, XXIX, 1889, p 38.

Swindon Advertiser, commenting on the Chippenham cheese fair in May 1892, noted that only 50 tons of cheese had been pitched (and that of inferior quality) compared with 200 to 250 tons in peak years. More detailed figures from the *North Wiltshire Herald* show that the quantity of cheese pitched declined from just under 2000 tons in 1872 to about 700 tons in 1892. Although figures are not available for the next twenty years it is clear from other literary evidence that cheese making was all but extinct by the outbreak of war in 1914.

The problems facing Wiltshire cheese makers were considerable. Prices for all cheeses made in the county, Broad Doubles, Cheddar and Loaf, held up relatively well until the late 1870s, though there were considerable short-term fluctuations. Thereafter they fell steadily for the remainder of the century. (See Figs 1 and 2.) However, it was not simply a question of price competition for, even before the collapse of prices, there were signs of difficulty stemming from the variable quality of local cheese which in turn reflected the absence of a system of manufacture. The unwillingness to change was apparent in the late 1860s when American competition was first being felt. The Swindon Chamber of Agriculture, for example, discussed factory production on several occasions but, with few exceptions, opinion was firmly against change. Thus, one critic of the factory system argued that:

Cheddar cheese is making the highest prices in our markets. This I consider an unanswerable argument in favour of the home system of cheesemaking . . . The American factory system of cheese making will always be a long way behind in quality . . .¹⁹

Others were less reasoning. The Reverend H G Bailey told his audience that:

It was pretty well known that if a tradesman did not succeed in his own business he generally took the management of a limited liability company.²⁰

This comment was met with laughter and cheers and would seem to have clinched the argument against factory production. However, a more critical view came from an unnamed American whose comments were transmitted to the Chamber of Agriculture by one of the few proponents of the new system. In his opinion:

There is nothing in the manufacture of Wilts cheese that would be of any account to the dairymen of America, and it is a matter of surprise that the people of the district are so bound up in the old practices as to waste their time and substance in manufacturing cheese of this character. Comparing the Wiltshire method and the apparatus in use with our factory system, the latter is about a century in advance.²¹

Given the prosperity enjoyed in the 1850s and 1860s the wherewithal for change was present but not the willingness. Within twenty years this had been reversed and there was to be no reprieve for the farmhouse cheese makers of Wiltshire. However, the presence of a lucrative alternative in the form of the liquid milk trade was a critical element in the decline of cheese making. As Sir Gabriel Goldney told the 1894 Royal Commission:

I have tried on one of my farms (in North Wiltshire) adopting the very best process to make Cheddar cheese; we succeeded very well, but after trying it for a couple of years I found I could not make it so profitable, taking the labour into account, as selling the milk.²²

The farmers of Wiltshire, greatly aided by the railway system that linked the county to the major urban areas, were more willing to abandon cheese making than their fellows in the surrounding counties of Hampshire and Gloucester.

The dairy farmers of the Vale of Severn persisted with cheese making into the twentieth century. In the absence of detailed information on the profitability of cheese making, it is not easy to judge the wisdom of such action. It is, however, of some significance that the number of cows and

¹⁹ T Hewer, *North Wiltshire Herald*, 19 December 1868.

²⁰ Rev H G Bailey, *ibid.*

²¹ *North Wiltshire Herald*, 14 March 1868.

²² *Royal Commission, Minutes of Evidence*, PP, 1894, xvi pt ii, Q 15,891.

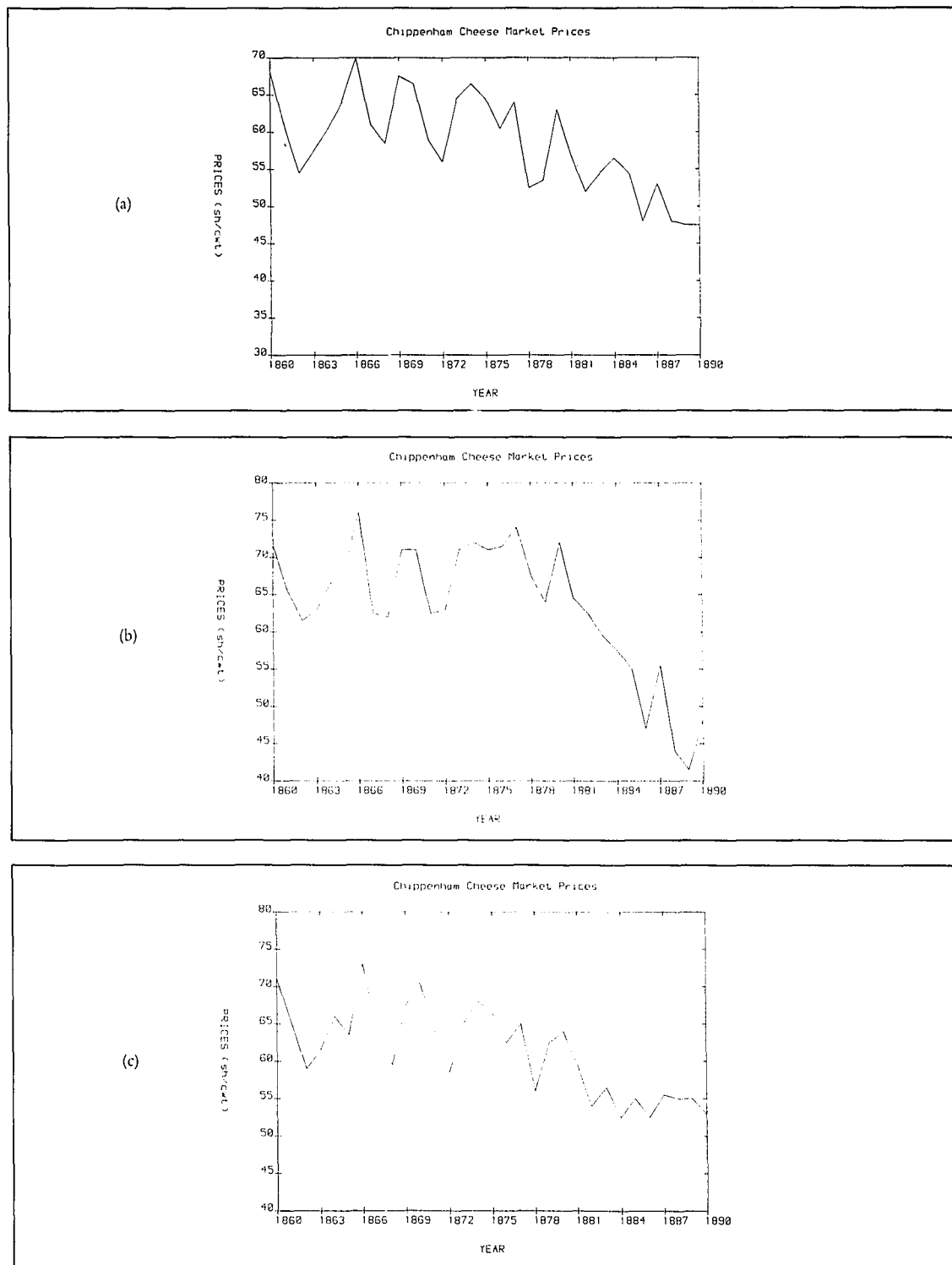


FIGURE I

Chippenham Cheese Market: Average Prices, sh/cwt, 1860-90 (a) Broad Doubles (b) Prime Cheddar (c) North Wiltshire Loaf

Source: *The Devizes Advertiser*, *The North Wiltshire Herald* and *The Swindon Advertiser*

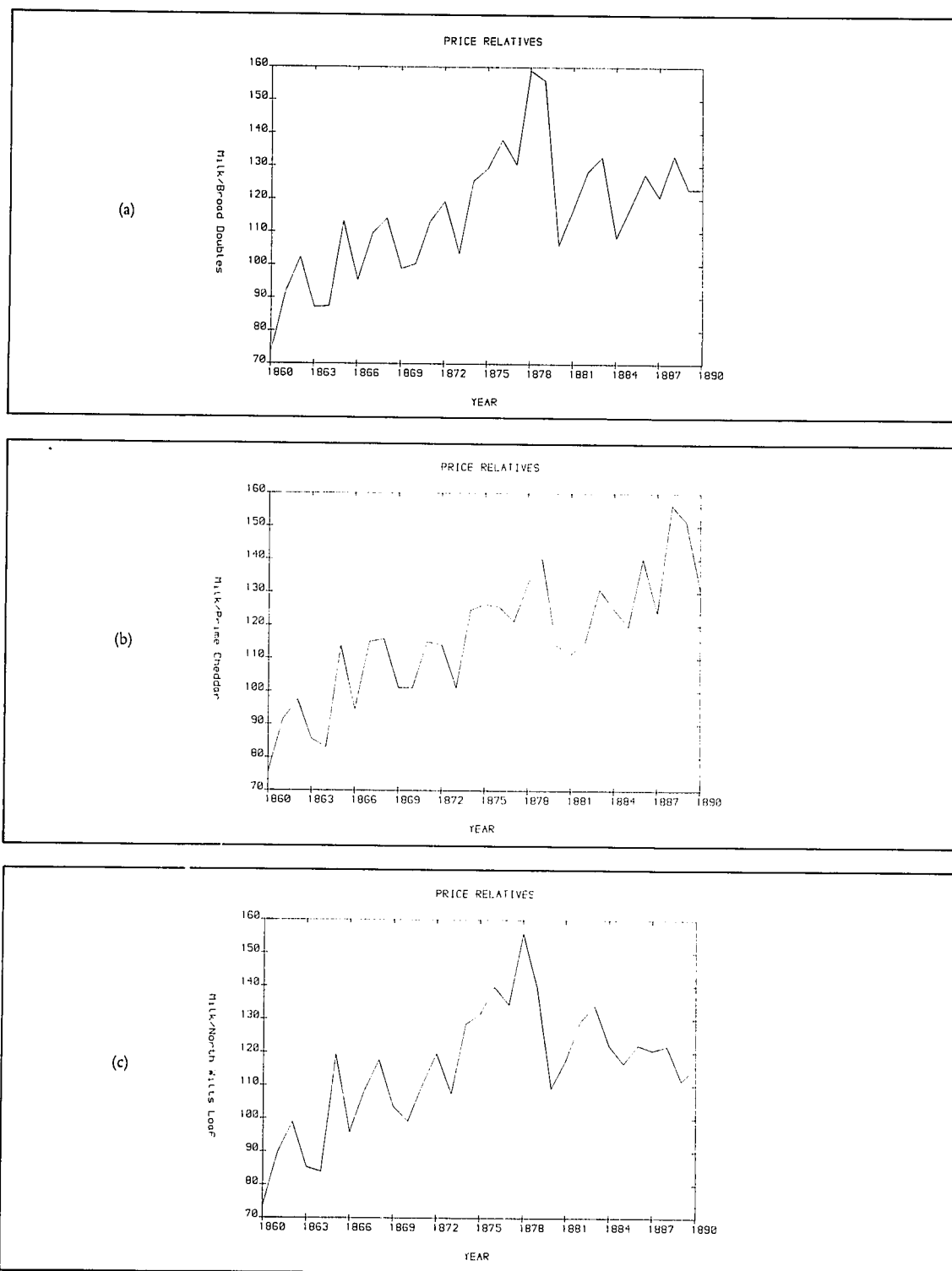


FIGURE 2

Price Relatives: Wiltshire Cheese and London Contract Milk Prices (1861-70 = 100), 1860-1890 (a) Broad Doubles (b) Prime Cheddar (c) North Wiltshire Loaf

Source: As Fig 1 and Report on Wholesale and Retail Prices, *Parl Papers*, 1903, lxviii, pp 136-7

heifers in milk or in calf in Gloucestershire declined by just under 10 per cent over the course of the 1890s whereas in Wiltshire there was an increase of some 7 per cent.

Looking at other cheese-making regions reveals a gloomy picture. Many of the local cheeses noted by Caird were no longer made by the turn of the century. This was true of Derbyshire, Shropshire, Warwickshire and Leicestershire. Some local cheeses survived. Perhaps the best known of these was Stilton. Manufactured around Melton Mowbray and in parts of Rutland and Huntingdonshire it clung to a small market. More interesting was the case of Wensleydale cheese making. Sited in the Yorkshire Dales the greatest problem was access to markets. The time-honoured practice, which persisted throughout the century, was to barter the cheese for provender and flour from nearby grocers or corn merchants, who sold the cheese twice a year to dealers from Tyneside and the rapidly growing Teesside towns. This local and largely Christmas trade flourished throughout the pre-war years, but a similar trade in Somerset, selling Caerphilly cheese to the miners of South Wales, proved less stable and had petered out by the early twentieth century. All in all, local cheeses were in decline in the last quarter of the nineteenth century. Cheshire and Cheddar cheeses dominated the English make, the latter increasing its percentage share of a declining total production.

During the 1920s the percentage of milk devoted to cheese making hovered around the 5 per cent mark, but this is not to suggest that there was any revival. On the contrary, the late 1920s and early 1930s saw the final stage in the decline of farmhouse cheese making in England as a further flood of imports swamped the market and dragged prices down to ruinous levels. In 1933/4 there were only 1324 farmhouse cheese makers holding a licence from the Milk Marketing Board, using a mere 18.8 million gallons of milk.²³ Of all the farmhouse

cheese made 52 per cent was Cheddar and 30 per cent Cheshire. Lancashire cheese accounted for a further 14 per cent and of the remainder Wensleydale accounted for 2 per cent, Caerphilly 0.8 per cent and Stilton 0.4 per cent. With the exception of Caerphilly, which was made on a larger scale than before the Great War, these figures give a reasonable impression of the importance of the various cheeses at the turn of the century.

In many respects the history of butter making follows the same course as that of cheese making. In relative terms the percentage of milk devoted to butter making fell from around 30 to less than 15. In absolute terms the quantity of milk made into butter fell by 50 per cent between the late 1860s and the end of the century, from roughly 150 million gallons to 75 million. Thereafter, there was something of a revival, though in fact it is more accurate to talk of butter manufacturing holding its percentage share of a growing total milk production. However, there were important differences between the two areas of manufacture. First, if only because anyone with a cow, let alone a herd, could make the odd pound of butter for sale at the weekly market, butter making was less confined geographically than cheese making. Thus, in the early twentieth century, while the south-western counties accounted for one-third of the butter manufactured in England, 16 per cent came from the north-east and just under 13 per cent from both the north-west and the north.²⁴ Second, for the most part production was geared to local markets, with few areas specializing in good quality butter. The large London market had been lost to foreign competition by the mid-nineteenth century, if not before, while the potential of the growing towns and cities was not realized because of the failure to produce a cheap and uniform product. Once again foreign competition was a critical factor in determining the fortunes of the butter manufacturer.

²³ *Milk Marketing Board: Five Year Review, 1933-38, 1939*, p. 37.

²⁴ *Census of Agricultural Production, 1908*, PP, 1912-3, x.

Although in some parts of the country, notably Lancashire, butter prices remained fairly stable until the 1890s the general trend was downward from the early 1870s onwards. From a peak of over 135s per hundredweight in the mid 1870s, London prices fell to 120s two decades later and to less than 100s per hundredweight by the end of the century. Elsewhere the position was more serious. In the Vale of Aylesbury prices fell by some 25 per cent between 1881 and 1894. Significantly, in the late nineteenth century the average price of first quality imported butter was lower than that of second quality English.²⁵

Not surprisingly, by the early twentieth century butter making was only important in those outlying areas where the liquid milk trade was impracticable. By the 1890s butter making was no longer important in the Vale of Aylesbury and the same was true of much of Somerset, though less so of Dorset. Devon and Cornwall in the south-west and the Lakeland counties of Cumberland and Westmorland were the remaining strongholds. The pattern remained largely unchanged in the 1920s with butter making being 'practically confined to small-scale production for local requirements in districts out of range of the liquid milk market. . .'.²⁶ Profitable butter making in Cornwall was very much the exception to the rule. For the most part the story was one of steady decline and the loss of markets to foreign imports.

²⁵ *Report on Wholesale . . . Prices*, op cit, pp 139-40. *Royal Commission, Minutes of Evidence*, PP 1894, XVII, QQ 46,580-1. The quality of English butter was all too often low but there was a certain economic rationality producing poor quality butter. It was estimated that the addition of water increased the make of butter to such an extent that, even though the price per lb was lower, the total income from a given quantity of butter could be raised by some 10 per cent. See *Agricultural Gazette*, xxiv, 1886, p 559. In the long run, of course, such an approach was self-defeating. The situation was further complicated by unfair competition from margarine sold as butter under such names as Butterpat, Creams, Marbutter or Milko. However, the root cause of the problem for English producers was competition from cheap and uniform imported butter. In Denmark in 1880s some 600 creameries were built. Co-operative farming supported by government credit facilities and co-operative export societies led to a flourishing trade.

²⁶ Ministry of Agriculture, *The Marketing of Dairy Produce in England and Wales*, part ii, Butter and Cream, Economic Series, 30, 1932, p 9.

As with cheese making the potential of technical and organizational advances (exemplified by the co-operative creameries of Denmark) was never realized in England. However, in neither case should this be seen as failure for there was an attractive alternative that enabled the dairy farmer to sidestep the challenge of his continental or antipodean rival. In the growing trade in liquid milk was to be found a solution that was attractive to the dairy farmer and other members of his family.

II

The decline in the traditional branches of the dairy industry was offset by, indeed facilitated, the expansion of the liquid milk trade that was geared to the growing needs of the expanding urban centres of England.²⁷ With falling production costs the liquid milk producer was in a strong position to survive and even prosper. Moreover, as the rail network expanded and branch lines opened, the sale of liquid milk became a practical proposition to an increasing number of farmers. Indeed, it can be argued that access to the railway was more important than such factors as soil type in determining the location of production.²⁸ It would be wrong to suggest that the liquid milk trade remained buoyant throughout the period but there was one great advantage, even in troubled times, namely, the speed of turnover of capital. The weekly or fortnightly milk cheque was an inestimable boon to the farmer working on limited resources and narrow margins.

Before looking in more detail at the temporal and geographical variations in the liquid milk trade it is important to stress the complexity of this sector of agriculture. Milk was produced under a wide variety of

²⁷ See E H Whetham, 'The London Milk Trade 1860-1900' *Econ Hist Rev*, 2nd ser XVII, 1964, pp 369-80 and Taylor thesis op cit chap ix for further details.

²⁸ A D Hall, 'Nor is the land particularly well-suited to dairying yet wherever the rail is not too far off a good deal of milk is produced and sent to London.' *Victoria County History of Hertfordshire*, vol ii, 1908, reprinted in 1971, p 135.

conditions. Urban and suburban cow-keepers, providing milk warm from the cow, remained important sources of supply throughout the late nineteenth century and into the twentieth. New sources of supply came from at least three distinct groups. First, there were traditional dairy farmers for whom the burgeoning liquid milk trade provided an attractive alternative at a time of growing competition in manufactured dairy products. Second, there were those farmers in pastoral or mixed farming regions who were able to increase their holding of dairy cattle within a wider context of livestock farming. Finally, there were those farmers in arable areas who could develop new enterprises to meet changing circumstances.

The advent of the railway was to prove a decisive factor in the demise of urban milk production. The development of the railway network opened up the possibility of new, external sources of supply to the ever-increasing number of town and city dwellers. As an anonymous contributor to the *Farmer's Magazine* noted in 1855:

... dairymen at the centre, from the greater expense, cannot manufacture milk so cheap or good in quality as farmers in the country who supply retail customers; hence milk-walks are fast falling into the hands of the latter, and have been doing so since the opening of numerous railways and country supply of milk through their instrumentality.²⁹

Rail-borne milk was first transported to London, Manchester and other large cities in the 1840s. The volume grew in the next decade and the basis of a supply and transportation structure was in being before the outbreak of cattle plague in 1865 which had a devastating effect on urban cow-keepers, especially London. The 1870s and 1880s saw a marked increase in the liquid milk trade. Not that this expansion was without its problems. The liquid milk trade and, in particular, the trade with London was overstocked in the late 1870s and again in the mid-1880s, especially after the collapse of cheese prices in 1879 and again in 1885. The

trade remained in the doldrums for several years. Indeed, a further collapse in cheese prices in 1895 led to a clear oversupply in the following year. The situation improved in the early twentieth century, though the problem of short-term oversupply, particularly during the summer months, was never fully resolved.

Not surprisingly, there were clear geographical variations in the growth of the liquid milk trade. No county was more closely associated with the new rail-borne trade in liquid milk than Wiltshire. From the 1850s it was realized that 'the railways open for the farmer the markets of London, Oxford, Bristol, Bath, Cheltenham and Gloucester'.³⁰ Milk was exported out of the county in increasing volume but it was in the north-east of the county, in the area around Swindon, that the earliest and greatest change took place. In 1870 something like 80 per cent of the 570,000 gallons of milk that left the county went from Swindon. A small quantity of milk, just under 10 per cent of the county total, was exported along the Vale of Pewsey from Westbury in the south-west. By 1885 the volume of milk carried by the Great Western Railway in Wiltshire had grown by more than a factor of three. The greatest volume of milk still flowed through Swindon but it now accounted for only 25 per cent of the trade. Further down the line, Wootton Bassett and Dauntsey together were responsible for a similar volume. Even more striking were the developments along the Vale of Pewsey from Devizes through Pewsey to Great Bedwyn from where some 25 per cent of the milk exported from Wiltshire originated. Places such as Corsley, lying to the west of Salisbury Plain, were transformed from arable to pasture parishes during the 1870s and milk, rather than wheat, became their mainstay.³¹

³⁰ Kelly's *Directory of Wiltshire*, 1855, p. 2.

³¹ British Transport Commission *Historical Record Office*, GW4/33 and 36. Davies *op cit.* For an impressively detailed analysis of the London trade see P. J. Atkins, 'The Milk Trade of London c1790-1914', unpublished PhD thesis, Cambridge University, 1977.

²⁹ *Farmer's Magazine*, 2nd ser., VII, 1855, p. 309.

Better known were the exploits of S W Farmer and F Stratton who built up a highly profitable enterprise centred on liquid milk sales to London. Frank Stratton was but one of a highly successful farming family in the county. James Stratton, son of the famous agriculturalist, Richard Stratton, entered farming in the 1860s. At Salthrop and later at Alton Priors and Alton Barnes he concentrated upon dairy farming. In the 1870s and 1880s some 5500 acres were converted from arable to pasture and a large dairy herd provided milk for sale to London. Similarly, William Stratton, farming at Kingston Deverill, was at the forefront of change in the south-west of Wiltshire.³² The Strattons were exceptional. More typical was the Woods family of Church Farm, Wingfield near Trowbridge. First class cheese makers, the Woods were able to ride the difficulties of 1879 but by the end of the 1880s there were real problems and for the first time liquid milk was being sold. By 1895 the old system of dairying was abandoned for good.³³ It is likely that less able cheese makers found refuge in the fortnightly milk cheque at an earlier date. Certainly by the early twentieth century milk selling dominated as both traditional dairy lands and arable areas had been transformed.

Looking at the neighbouring counties of Oxfordshire and Berkshire one sees a similar early involvement in the liquid milk trade. In 1870 Berkshire supplied London with almost a quarter of its rail-borne milk, while Oxfordshire accounted for just under 40 per cent. Although the relative importance of Oxfordshire had diminished by the mid

1880s, the absolute volume of milk transported from the two counties had grown markedly. The Vale of White Horse in Berkshire was one of the major milk producing areas in the country, while from around Thame in Oxfordshire through Princes Risborough to Beaconsfield there was a further heavy concentration on milk selling. In Buckinghamshire traditional dairying persisted longer, but by 1894 Aubrey Spencer reported that in the Vale of Aylesbury butter making, once the mainstay of the district, had 'gone out of favour and the majority of farmers sell milk'.³⁴

The move into the liquid milk trade also came later in the counties of Dorset, Gloucester and Somerset. Although there is evidence of milk being sent by train from Gloucester as early as 1850 there was no major move away from traditional dairying. The Blackmoor Vale in the north of Dorset was at the forefront of change with access to the railway once again being critical.³⁵ The shift from traditional dairying was evident here as early as the 1870s but this was not typical of the county as a whole. London was a crucial market and Weymouth and Bournemouth were important local centres of demand. Again, however, the rate of change must not be overstated. Henry Rew, reporting in 1895, noted that almost all of the dairies that were let still persisted with butter and cheese making.³⁶ In Gloucestershire cheese making remained the major outlet, with the sale of milk being limited to comparatively few farmers. On the Wiltshire border milk-selling had come to predominate by the early twentieth century but in the Vale of Severn, notwithstanding

³² Report of Mr R Henry Rew on the Salisbury Plain District of Wiltshire, *Royal Commission*, PP, 1895, xv, p 28. See also Frank Stratton, *An Account of a Wiltshire Farmer's Career*, and typed notes in the possession of Mr A G Stratton, Manor Farm, Alton Priors, Wiltshire, *Wiltshire Cuttings* xiv, p 15 (kept at Devizes Museum) and R Stratton, *Account of Farming History of the Stratton Family*, nd Reading University Farm Records, W.I. 6/8, 1. I am also grateful to Mr R F Stratton, of Manor Farm, Kingston Deverill, Wiltshire, Mr M Stratton and Mr J Houghton Brown, both of Codford St Mary, Wiltshire all of whom, along with Mr A G Stratton, provided me with considerable amounts of information relating to Wiltshire farming in general and the Strattons in particular.

³³ Reading University Farm Records, Wil 9/1, 1, 2, 3.

³⁴ *Royal Commission, Minutes of Evidence*, PP, 1894, xvii, QQ. 46,580-1. See also J T Coppock 'Agricultural Changes in the Chilterns, 1875-1900' *Ag Hist Rev*, 9, 1961, pp 1-16.

³⁵ J Bravender, 'Farming of Gloucestershire', *JRASE*, XI, 1850-1, pp 173-4. There is some evidence of an increase in milk selling to the large towns after the collapse of cheese prices in 1879. See the evidence of Mr H S Heywood, *Royal Commission, Minutes of Evidence*, PP 1881, xv, QQ 34168-72. It would not appear that Heywood was typical of the dairy farmers of the county.

³⁶ Report of Mr R Henry Rew on the County of Dorset, *Royal Commission*, PP, 1895, XVII, p 7. Rew did, however, note that milk selling was taking over where the railways permitted.

the demand for milk from Gloucester and Cheltenham, cheese was still made in the neighbourhood of Berkeley and Gloucester.³⁷ In Somerset, the growth of Bristol and Bath was an important stimulus to the liquid milk trade in the north-east of the county. However, it is clear that although there had been major problems in 1879, the manufacture of cheese remained the major concern of dairy farmers in the county as a whole. Even in the early 1890s only a small percentage of the milk produced in the county was sold in liquid form. Opposition to the new trade was often vociferous but in little over a decade the situation had changed markedly. Both butter and cheese making were in decline and 'the bulk of the milk from the eastern and southern part of the county goes to London'.³⁸ By the outbreak of war in 1914 Somerset had become as important as Berkshire in terms of London's milk supply.

Elsewhere in the country one can discern similar responses. In Derbyshire there was a move into milk-selling dating from around 1860. The cattle plague of 1865 was a major short-term stimulus. The 1870s saw a major change-over, given a further boost by the collapse of cheese prices in 1879. By 1881 it was estimated that over half, and possibly as much as three-quarters of the milk produced in the county, was sold in liquid form. By the end of the decade the vast majority of dairy farmers had abandoned traditional manufacturing, but such was the rate of change that the milk trade was depressed, often severely so, in the late 1880s and early 1890s.³⁹ A similar pattern developed in

Staffordshire where cheese making was all but finished by the early 1880s.⁴⁰ Both counties sent considerable quantities of milk to London but it would be wrong to neglect the importance of more local markets. Nowhere was this more the case than in Lancashire. Particularly in the south of the county, where transportation was no problem, there had been a steady shift into the liquid milk trade from the late 1840s.⁴¹ Even neighbouring Cheshire, very much a cheese-making stronghold, could not escape entirely the effects of the growing urban demand for milk. As early as 1845 Palin noted that he could find no butter or cheese manufacturer in the dairy farms between Runcorn and Manchester. Twenty years later, W H Heywood, who farmed at Dunham Massey, Altrincham, demonstrated that milk selling was more profitable than cheese or butter making. However, one must not overstate the extent of change in these years for one reference to Cheshire farming in the 1880s could talk of 'railway milk . . . being almost unknown'. Sadler, seeking to explain this, emphasized the psychological barriers to change.

. . . any man who had the temerity to relinquish cheese-making and send his milk away was regarded with something approaching suspicion: it was surmised that either he was getting near the rocks financially or else that his people could not make good cheese.⁴²

Increasingly, in that part of the county lying to the north of a line from Chester to Crewe, milk selling became the major concern. By the end of the century there had also been a change in the east of the county with farmers choosing to sell milk to the Potteries rather

³⁷ *Agricultural Gazette*, XXV, 1887, p 226. *Victoria County History of Gloucestershire*, vol II, 1907 reprinted 1972, p 252.

³⁸ Gibbon, *op cit*. Wallace, *op cit*.

³⁹ In a supplement on Derbyshire it was noted that 'For twelve years previous to 1881 a revolution in the milk traffic of the county had been gradually taking place. Cheese making . . . had greatly diminished . . .' *JRASE*, 2nd Ser, XVII, 1881, p 43. See also Report of the Judges on the Derbyshire Prize Farm Competition. *JRASE*, 2nd Ser, XVII, 1881, p 460. S B L Druce in his report on the county asserted that he 'had no doubt that this comparatively happy state of things was caused to a great extent by the milk trade to London and other large towns'. *Royal Commission*, PP, 1882, XV, p 275.

⁴⁰ *Royal Commission, Minutes of Evidence*, PP, 1881, XVI, Q.34, 465. However, the *Agricultural Gazette*, XXXI, 1890, could still refer to Staffordshire as an important cheese manufacturing area.

⁴¹ G Beesley, *Agriculture in Lancashire*, 1849, p 8.

⁴² W Palin, 'Farming of Cheshire', *JRASE*, 1st Ser, V, 1844-5, pp 57-111. W H Haywood, 'Comparative Profits from making Cheese and Butter or selling Milk or Grazing', *JRASE*, 2nd Ser I, 1865, pp 338-43. Haywood reckons to get £18 per cow from milk-selling compared with £16 and £15 per cow from cheese and butter making respectively. The figures are the same as those given by Carrington see note 12 above. Sadler, *op cit* p 183.

than manufacture cheese.⁴³ However, as in Somerset, there was greater resistance to change than in other counties.

The transformation in dairying districts was supplemented by the development of milk production in other pastoral areas with established livestock husbandry skills. In Leicestershire, for example, there was a move into the liquid milk trade in the late 1880s and 1890s.⁴⁴ Milk was sent to London and also to Newcastle. In Nottinghamshire, Shropshire and Warwickshire, similar patterns can be discerned, though the milk trade remained relatively limited in the latter.⁴⁵ Similarly, in many eastern counties milk selling became important as either land was converted to pasture or as arable dairying was developed. Essex best exemplifies both cases. The collapse of arable farming in the county and the influx of migrants from south-west Scotland led to a marked shift in farming practice as milk-selling to London became a major concern.⁴⁶ This new trade was largely responsible for the 50 per cent increase in the county's dairy herd between 1882 and 1892. The 'Scotch' system involved a considerable substitution of labour for capital but it was essentially a low pressure system with low costs and low yields. However, this was not the only avenue to success. Perhaps more striking were the achievements of Edward Strutt who farmed the estate of his brother, Lord Rayleigh in the Chelmsford/Maldon district of Essex. The estate was predominantly arable when Strutt took it over in 1876. Detailed accounts have not survived for the

first decade but by 1886/7 milk already accounted for one-third of gross output, though corn accounted for some 40 per cent. By the end of the decade these figures had been reversed and by the mid 1890s milk accounted for around 50 per cent of gross output and corn less than 30 per cent.⁴⁷ With the exception of 1892/3, a profit was made in every year. Unlike the Scots, Strutt's system was intensive arable dairying. Pasture was kept to a minimum but large acreages of roots were grown for winter feed. At the same time an extensive building programme was completed and attention was paid to the production of high quality clean milk.

Elsewhere in the eastern counties milk selling was expanded. In 1881 it was reported that there was virtually no dairying in Norfolk, whereas in 1895 Henry Rew noted an appreciable increase.⁴⁸ In Cambridgeshire and Lincolnshire milk was sent to London and, in the case of the latter, to the Yorkshire towns. In some areas land was converted (with some difficulty) to pasture, as in the Isle of Ely. In others arable dairying was developed. Further north, in the East and North Ridings of Yorkshire and in County Durham, there was a similar expansion especially around the industrial centres, not least of which was the rapidly growing iron and steel town of Middlesbrough.⁴⁹ Much was said at the time about the growth of milk production in the eastern counties, but there is a danger of overstating its significance. Total numbers remained low in comparison with the traditional dairying counties and the contrast was even more stark when stocking densities are compared. Nor should this occasion any great surprise. Animal husbandry required special skills that were not easily acquired. Likewise, grassland management, especially where land had been recently converted to

⁴³ Ministry of Agriculture, *The Marketing of Dairy Produce in England and Wales*, part I, *Cheese*, Economic Series, 22, 1930, p. 12. W. B. Mewrer 'Two Centuries of Cheshire Cheese Farming', *JRASE*, 3rd Ser, XCVIII, 1937, pp. 61-89.

⁴⁴ *Royal Commission, Minutes of Evidence*, PP, 1894, XVI, pt 1, QQ. 13,314-5, and 17,323 and *Minutes of Evidence* PP, 1894, xvi, pt 2, Q. 21,006.

⁴⁵ W. Irons, 'Agriculture in Warwickshire' *JRASE*, XCI, 1930, pp. 39-49. H. G. Robinson 'Dairying in Derbyshire, Leicestershire and Nottinghamshire', *JBDFA*, X/IX, 1939, pp. 26-37. R. E. Turnbull, 'Farming in Shropshire in 1875 and 1895', *JBWES*, 4th Ser, VII, 1896-7, pp. 85-105.

⁴⁶ P. McConnell, 'Experiences of a Scotsman on the Essex Clay', *JRASE*, 3rd Ser II, 1891, pp. 311-25. More generally see E. L. Smith, *Go East for a Farm: a Study of Rural Migration*, Oxford, 1932.

⁴⁷ Sir W. Gavin, *Ninety Years of Family Farming*, 1967, p. 85.

⁴⁸ Report of Mr R. Henry Rew on the County of Norfolk, *Royal Commission*, PP, 1895, XVII, p. 31.

⁴⁹ Report of Mr R. H. Pringle on South Durham and Selected Districts of the North and East Ridings of Yorkshire, *Royal Commission*, PP, 1895, XVI pp. 553 and 563.

pasture, posed real problems to the would-be dairy farmer. Arable dairying proved even more difficult, especially when capital was not available. On top of all this were the psychological barriers to be overcome, not least of which was the belief that dairying was an inferior form of farming.

To summarize, in broad terms the development of the liquid milk trade was discernible in the 1850s and 1860s but it was in the following decade that the changeover first caught the attention of agricultural commentators.⁵⁰ In subsequent years there was a steady move to milk selling in traditional dairying areas, livestock and mixed farming regions and even in arable counties. However, behind the general pattern were important variations between and within counties. Of the traditional dairying counties Lancashire, Derbyshire, Wiltshire and the West Riding of Yorkshire were at the forefront of change. In contrast, Cheshire, Somerset, Dorset, Gloucester remained longer with the old ways. In other pastoral areas, the milk trade developed more rapidly in Leicestershire than in Warwickshire. Similarly in the east of England there was a patchy response to the new opportunity afforded by urban demand for milk.

It is easy to overstate the success of the new trade compared with traditional dairying. There was always a market for fine quality cheese and butter. Further, by the end of the century the liquid milk trade was over-supplied. Although one cannot speak with precision, because of the absence of reliable data, it would appear that, especially in the 1890s, liquid milk production was attractive, not because of the inherent profitability (as was the case in the 1870s), but because of

its rapid rate of turnover and the limited capital needs. Finally, it is important to stress the problems involved in the transition to the milk trade. Even for the traditional dairy farmer there were additional costs, chiefly involving the transportation of milk to the nearest railway stop and rail charges themselves. For farmers extending dairying enterprises the problem of laying down and monitoring pastures (or developing forms of zero grazing), erecting new buildings and ensuring an adequate supply of skilled labour for milking could be major obstacles. Given these problems, the pre-war progress of dairying was steady rather than spectacular.

III

The years prior to the advent of the Milk Marketing Board saw considerable changes in the dairy industry, but, with the exception of the war years, they were essentially a continuation of the trends that had developed during the late nineteenth century. The problems of the war years were, however, real enough. For some years there had been a shortage of milkers in certain parts of the country but the demands of war greatly increased the problem, causing difficulties in some of the leading dairying counties.⁵¹ Moreover, the situation was further complicated by the growing scarcity, and therefore, rising cost of artificial feed. Intensive producers and dairymen in the eastern counties tended to be worst affected. The number of cows and heifers declined in thirty-five counties in 1915. In Essex and Hampshire, numbers were down by some 5 per cent, in Hertfordshire, Kent and Sussex by some 8 per cent while in Cambridgeshire the fall was 20 per cent. In the following year there was a fall in numbers in twenty counties, eighteen of which had experienced a decline in the previous year. However numbers began to recover in 1917 and by the end of the war

⁵⁰ For example, R Bannister, 'Our Milk, Butter and Cheese Supply', *Journal of the Society of Arts*, XXXVI, 1888, pp 965-97 and 1001-16; G Murray 'The Building and Equipment of a Dairy Farm', *JBDA*, I, pt III, 1881, pp 50-4; and especially J P Sheldon, 'Some Thoughts "on Milk and Cows"', *JBDA*, II, pt I, 1885, pp 9-15 and 'Dairy Farming Fifty Years Ago and Now', *JBWES*, 5th Ser, II, 1907-8, pp 86-101.

⁵¹ T H Middleton, *Food Production in the War*, Oxford, 1932, p 108.

herd numbers had regained their pre-war levels. However, if numbers recovered, yields did not. Over the course of the war years there was a significant fall, probably in the region of 20 per cent, in average yields.

These problems soon became apparent but it would be misleading to suggest that this was the only effect of the war years on the dairy industry. On the credit side was a new awareness of the potential nutritional value of milk. The failure of large numbers of men to pass the army fitness test created something of a scandal. As a result more attention was paid to the diet of the nation and the relative value of different foodstuffs. The value of milk was seen but official thinking was complicated by the fact that the German blockade made it essential to support as many people as possible from home agriculture. In terms of quantity, the best way to do this was to convert land to arable. The ensuing ploughing policy necessitated the destruction of old pasture land, much of which had been devoted to dairying. The possible contradiction in policy was resolved by fixing prices in such a way as to encourage milk production and positively discourage the making of cheese and butter. Thus, it was the manufacturing side of the dairy industry that bore the brunt of wartime upheavals and, as a consequence, the long-term decline in traditional dairying was further accelerated.

However, the new awareness of the dietetic value of milk was not translated into a significant increase in demand during the 1920s. In contrast, the supply of milk increased markedly. The high price of milk was an obvious attraction and many dairy farmers rushed in. It was not simply a question of restocking, or even of increasing the stocking density on old pasture lands, though both happened. Supplies were augmented from new milk producing areas. However, it was in the traditional dairying county of Gloucester that the greatest increase in dairy herd size took place. By 1930 there had been an increase of 40 per cent

over the pre-war level. No other county could compare with this. Nonetheless, in Wiltshire, Hampshire and the established dairying county of Shropshire there were increases of between 25 and 30 per cent. Similar increases were recorded in the newer dairying areas of the south and east, notably Norfolk, Kent, Suffolk and Sussex. Increases of between 20 and 25 per cent (compared with a national average of 14 per cent) were achieved in a further nine counties, of which Berkshire, Oxfordshire and Staffordshire were already established dairying areas. In the Midlands, stimulated by the industrial growth of Birmingham and the Black Country, Nottingham, Warwickshire and Worcestershire took the lead. Two other eastern counties – Rutland and Huntingdonshire – saw similar increases as did the northernmost county in England, Northumberland.

In contrast, and reflecting the industrial depression afflicting much of the north, dairy herds grew by a mere 5 per cent in Derbyshire and the West Riding of Yorkshire while in Lancashire the increase was less than 1 per cent. Most striking, however, was the decline in Cambridgeshire. Numbers there picked up in the mid 1920s but declined thereafter, so that by the end of the decade the county dairy herd was 2 per cent smaller than it had been before the war.

Overall the national dairy herd grew steadily through the 1920s. Equally, the volume of milk produced for sale increased. Cheese making in the Berkeley Vale was abandoned as road and rail transport opened up urban markets. Likewise, butter making in Dorset was abandoned, especially as prices collapsed in the late 1920s, and dairy farms moved into the liquid milk trade. In Cheshire and north-west Shropshire there was a similar decline in cheese making. The final 'shake-out' from traditional dairying was completed by the early 1930s. The 1920s also saw the extension of milk production in the midland and eastern counties. In north

Warwickshire, in Northamptonshire (especially in the Nene and Welland valleys) and in Leicestershire there was an upsurge in milk production. In the chalk uplands of South Wiltshire and Hampshire and in the Cotswolds there was a marked shift from arable farming to milk production while in central Norfolk, west Sussex and south-east Suffolk milk production developed rapidly after the war.⁵²

The rise of new supply areas in the Cotswolds and on the downlands of the south-west was one of the most striking features of the 1920s. The development of the milking bail by A J Hosier opened up new possibilities for low cost production on land that had previously been devoted to arable or sheep farming.⁵³ The advantages of road transport were also exploited. As a result the old milk exporting areas found themselves faced with powerful young competitors, well versed in the advances of the post-war years.

However, the position of the dairy farmer during these years was not as serious as that of some of his fellow farmers. In fact, taking the period as a whole he suffered less than most from the general problems of farming. Messer, writing on the agricultural depression of 1931, summarized the overall situation in terms of the

two features most consistently mentioned in the present circumstances of agriculture . . . the stability of dairy farming generally and the extension of this type of farming wherever it is possible.

⁵² J P Maxon (ed), *Regional Types of British Agriculture*, 1936, *passim*.

⁵³ E H Whetham *The Agrarian History of England and Wales*, VIII, 1914-1939, 1978, provides an authoritative survey of the period. See also A J and F J Hosier, *Hosier's Farming System*, 1951. Farming at Wexham, Wiltshire, Hosier had 1000 acres of chalk land up to 750 feet above sea level in elevation, and a further 700 acres in the vale. A milking herd of some 300 cows was run on downland. Five milking bails were used, each operated by one man and one boy. On a normal farm in a district a herd of 60 cows would require seven to ten men as well as boys. Not surprisingly Hosier's production costs were appreciably lower than those of his neighbours. However, the impact of the milking bail can be overstated. A survey carried out in 1932 found only 102 in use of 86 farms (excluding those owned by Hosier) of which roughly one third were in Wiltshire. For details see R N Dixey and M Messer, *Open Air Dairying*, Oxford, 1932.

He continued,

There is no record of any serious difficulty among dairy farmers, except, perhaps, in Dorset . . . There are no signs of hardship where milk is sold for liquid consumption, and even where a considerable proportion of the milk is manufactured, as in Wiltshire and Somerset, there is a very ready demand for farms. Every town has its fringe of producer-retailers, and though sometimes cases are mentioned of industrial depression being reflected in a smaller demand for milk, or in difficulty in 'getting in money', there is no question of such farmers being in serious trouble.⁵⁴

Thus, the overall effect of these changes was to confirm the position of liquid milk as the most important single branch of agriculture in England. By 1930, at least 75 per cent of all milk sold off in the country was in the form of liquid milk for the urban market. All parts of northern England (as well as parts of south-west Scotland) sent milk to Tyneside. The north-western industrial area centred on the Liverpool/Manchester axis was supplied by dairy farmers in the counties of Lancaster, Chester, Stafford and Derby. The West Riding centres, such as Leeds, Sheffield and Bradford drew upon local supplies as well as tapping adjoining Derbyshire. Similarly, the industrial complex centred on Birmingham received its milk from Warwickshire, Shropshire, Worcestershire, Gloucestershire, Staffordshire, and Derbyshire. Lastly, the capital drew most heavily upon the south-western counties of Wiltshire, Somerset, and Dorset, the midland counties of Stafford, Derby, and Leicester, as well as upon the more local supplies from Surrey, Essex and Sussex.

IV

In sum, therefore, one can see that between 1860 and 1930 there were important structural changes within the framework of English agriculture in general, and within the dairy industry in particular, brought about by the complex interaction of the

⁵⁴ M Messer, *The Agricultural Depression of 1931*, Oxford, 1937, p 13.

pressures of changing domestic demand on the one hand and increasing foreign competition on the other. The upshot was the emergence of liquid milk as the most important single item produced on the farms of England. By 1930 milk contributed roughly one-quarter of gross agricultural product.

This is not to say, however, that structural change took place smoothly or without difficulties. The natural hazards of weather and disease could bring ruin.⁵⁵ The burden of rail costs was a constant source of complaint. Labour scarcity, the difficulties of getting good milkers, restricted developments in certain parts of the south-west.⁵⁶ Technical and financial constraints limited change in the east particularly. Finally, there were the problems of an unregulated trade: marked short-term fluctuations and periodic

glut. These were very real problems that hampered the smooth transformation of agriculture. Moreover, the interplay of factors varied considerably from region to region. Consequently, change took place at different times and at different speeds across the country. However, the complexities of the process of change and the difficulties encountered by the dairy farming community cannot, in the final analysis, obscure the success of the liquid milk trade in these years. Indeed, appreciation of these complexities and difficulties adds to, rather than detracts from, the achievements of the oft-despised 'dirty boot farmers'. Without the liquid milk trade the plight of English agriculture in the late nineteenth and early twentieth centuries would have been dire indeed.

⁵⁵ Historians, preoccupied with long term trends, often overlook the impact of short term factors. While it would be wrong to blame the difficulties of agriculture solely upon the vagaries of the weather or the accident of disease one should not minimize the impact. For example, the cattle plague of 1865/6 caused large-scale casualties in London and the major 'dairying counties' of England. Between 1869 and 1894 rinderpest is estimated to have been responsible for over 100,000 fatalities. Foot and mouth disease broke out in every year from 1869 to 1886 and was particularly serious in 1869/71, 1874/5 and 1876/7. Pleuro-pneumonia was rampant in 1865/6 and again in 1870/1. Dairy cattle were also afflicted by contagious abortion, milk-fever and mastitis. The latter was commonplace and almost accepted as part of the natural order. Further milk yields and production costs were adversely affected by severe winters

in 1879/80, 1880/1, 1886/7 and 1895/6: by cold and wet summers in 1877, 1878 and especially 1879 as well as in 1903; and by severe summer droughts in 1887, 1892, 1893, 1895, 1896, 1901 and 1911, it was not without reason that farmers were much concerned with such 'accidentals'!

⁵⁶ This had been a problem in Oxfordshire as early as the 1860s and 1870s and also affected parts of Somerset and Dorset in the late nineteenth and early twentieth centuries. There were also shortages of good cheese and butter makers. Interestingly, several commentators argued that there would have been a return to cheese- and butter-making in the 1890s had it not been for the lack of skilled labour. It is not clear whether women had lost their skills or simply refused to return to the drudgery involved in traditional dairying.

Early Modern Agriculture: a new harvest gathered in

By E A WRIGLEY

[Review article of, J Thirsk (ed), *The Agrarian History of England and Wales*, CUP, 1984-5, V, 1640-1750, 2 parts, xxxi + 480; xxx + 952; 168 text figures; 28 plates; £35, £55.]

IT is sometimes said of a particular work that it is impossible to do justice to it in a review, usually for reasons of space. Composite works of exceptional length, such as the fifth volume of the *Agrarian History*, pose especially acute problems. Even in a comparatively lengthy review, individual consideration of the contributions of nineteen different authors is scarcely feasible, especially when between them they have penned about 700,000 words, or their equivalent in tables, etc, at a rough count. But another feature of this work causes a greater difficulty if justice is to be done to it. The preface, written in early 1983, refers to the work having been ten years in the making. In a sense, however, since the planning of the series as a whole began in January 1956, the work must reflect decisions taken over a thirty-year period. Moreover, individual authors finished their contributions at different dates, so that even if each volume is treated in isolation, it must be exceedingly difficult to avoid unconscious injustice in writing of a given author's contributions. Perhaps, therefore, it is as well to begin this review by stating unambiguously that it is certain to be unjust since I shall write both of its organization and content from a 1986 vantage point. To do so may be manifestly unfair to an author who may for good reason have laid down his pen in the later 1970s (as appears to have been the case in at least one instance). Similarly, in writing of the organization of the book, it is absurd to make the implicit assumption that

it was clear in 1973 what direction research would take over the next thirteen years. Not to do so, however, would make for an excessively tortuous exercise in which the wish to be fair might prove hopelessly at odds with clarity.

The work is divided into two parts which appear as separate volumes, the first devoted to 'Regional Farming Systems', the second to 'Agrarian Change'. About two-thirds of the total text is to be found in the second part. The first part is a triumphant vindication of one aspect of the grand design of the series. No scholar could hope to achieve the detailed knowledge of a particular region which can be attained by a local specialist. Collective work is imperative, and yet Joan Thirsk has exercised editorial control with such judgement and discretion, and has received in turn such intelligent collaboration from her contributors, that the penalties usually paid for collective work are seldom evident and never severe. The agricultural ecology of each region is explained; the constraints imposed by factors such as distance to markets and transport facilities are described; topics such as field systems, holding size, and ownership and tenancy characteristics covered. Above all the detailed nature of local farming technology and practice is reconstructed and its often bewildering variety is exposed.

In this connection it is striking how heavily all the authors depended upon probate inventories as a prime source of information. Other local sources were, of