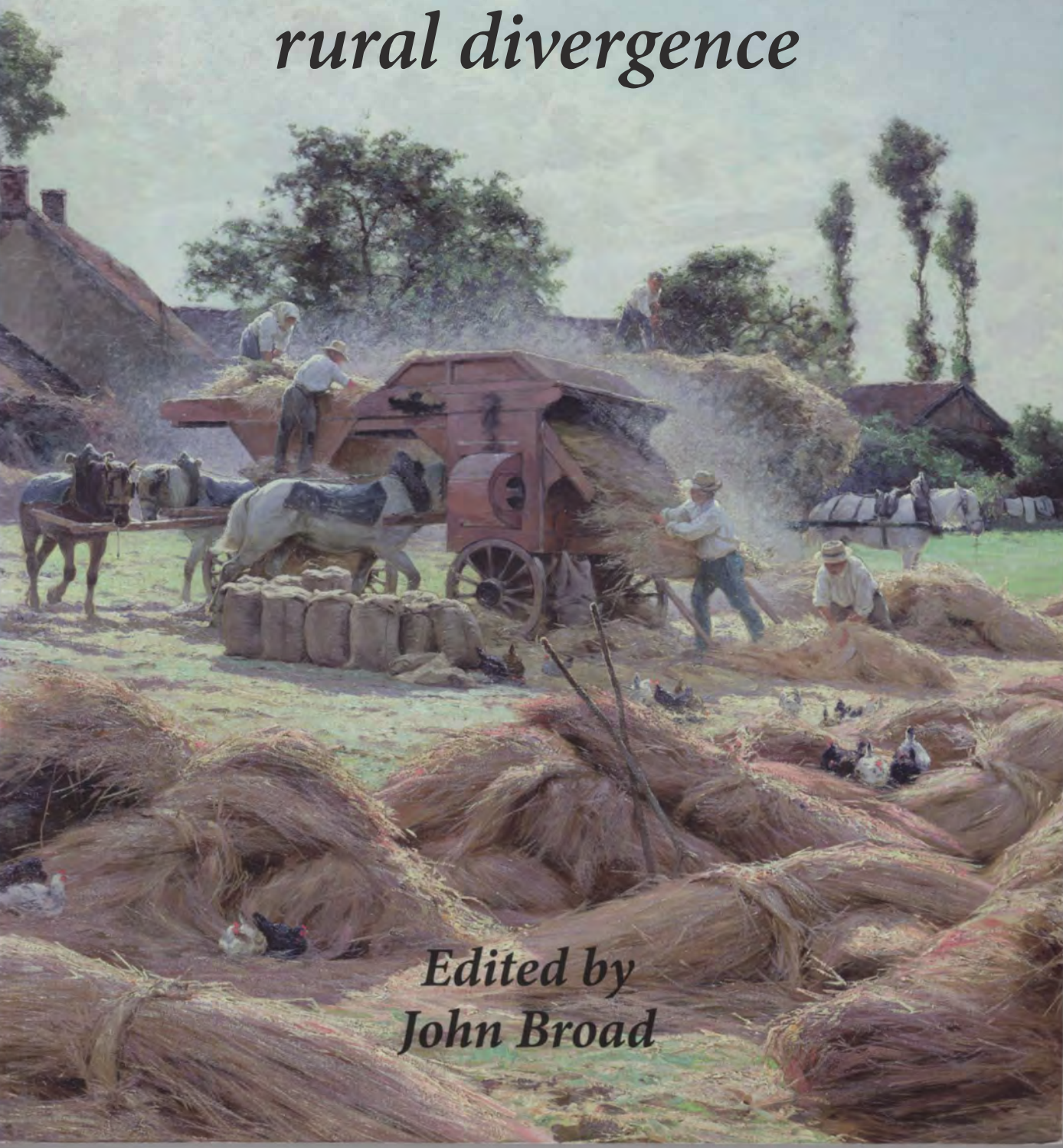


A COMMON AGRICULTURAL HERITAGE?

*Revising French and British
rural divergence*



*Edited by
John Broad*

A COMMON AGRICULTURAL HERITAGE?
REVISING FRENCH AND BRITISH RURAL DIVERGENCE



View of the King's kitchen gardens at Versailles, by Jean Aveline (engraving, late seventeenth century).
The numerous walls supported the espaliered fruit trees and helped to create the necessary microclimate.

Source: Potager du Roi, Versailles.

A common agricultural heritage?

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From time to time *Agricultural History Review* has published supplements where the history of an aspect of rural economy and society has required a longer treatment than could be achieved within the confines of an article. Previous supplements have included Hall, *Fenland worker peasants* (1992), Wade Martins and Williamson, *Roots of Change* (1999), Hoyle (ed.), *People, landscape and alternative agriculture* (2004) and Short, Watkins and Martin (eds), *The frontline of freedom. British farming in the Second World War* (2006).

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Preface

This volume is the fruit of a conference held in Canterbury in September 2005 under the auspices of the British Agricultural History Society, with assistance from the British Academy and the University of Kent. It brought together a group of French and British historians to consider themes of mutual interest across time periods from the medieval to the twentieth century. The conference followed an earlier gathering in Le Mans in 2002 hosted by L'Association d'Histoire et Sociétés Rurales from which the papers were published in 2005.¹ For both events the format has been to take a number of themes with contributions about both countries, which were not explicitly required to be comparative, but have led to a growing appreciation of the need to explore comparative elements more systematically. As some of the themes that emerge from the current publication suggest, the stereotypical view of Britain and France taking very different routes to rural development needs drastic reappraisal, and has at its roots political and social imperatives that must be seen for what they are.

In editing this volume, I also agreed to translate the French contributions, which proved a fascinating task. I must thank the contributors for their helpful comments and corrections, which I hope have resulted in a more accurate and nuanced understanding not only of the intricacies and differences that this volume will hopefully put into a context of greater mutual understanding, but also – more importantly – of much greater similarities in the process of rural change in the two countries.

I would like to thank John Chartres, who with me organized the British side of the conference, Nadine Vivier who coordinated the French offerings, but particularly David Ormrod at the University of Kent who took on the task of local organizer in such a wholehearted way that his efforts were central to orchestrating a congenial and productive event. In bringing the volume to press, Peter Jones read the text for the Society. Finally, I am most grateful to Catherine Glover and Richard Hoyle for masterminding the final editing process and seeing the book through the press at a time when I was preoccupied with other work and to Rachel Clarke of Carnegie Publishing for both her skill and patience.

John Broad

¹ N. Vivier (ed.), *Ruralité française et britannique XIII^e–XX^e* (2005).

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RICHARD BRITNELL retired in 2003 from the University of Durham, where he was a professor of History. He specializes in the economic and social history of the middle ages, with a particular interest in the development of local trade and the commercialization of social relationships, and is the author of *The commercialisation of English society, 1000–1500* (1993) and *Britain and Ireland 1050–1530: economy and society* (2004). He was elected a Fellow of the British Academy in 2005.

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JOAN THIRSK is a historian of English agriculture mainly in the early modern period, focusing on regional differences in farming specialities, by-employments, and social structures. She was Reader in Economic History at the University of Oxford, now retired. Her most recent publications have been *Alternative agriculture. A history from the Black Death to the present day* (1997) and *Food in early modern England: phases, fads, fashions, 1500–1760* (2007). She is now researching Moorish influences on English horticulture in the sixteenth century.

MICHAEL TURNER is Professor of Economic History at the University of Hull. He has published widely on British agrarian history in the eighteenth and nineteenth centuries and

is now extending his interests into the twentieth century. His current project is an extension of the chapter in this book. He is plotting the end of copyhold tenure from legislation enacted in the 1840s designed to convert it into freehold tenure, to its final abolition in 1925. He is also looking at the final disappearance of those remnants of manorial incidents associated with copyhold tenure that were not extinguished until well after 1945.

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Introduction

Reasserting the common agricultural heritage of England and France

by John Broad

This introduction draws together the four themes of the book: knowledge transfer; English farmers and English and French peasants; markets, producers and rural change; and technical innovation and rural change. Rather than explicitly taking a comparative approach, most of the authors provide a national perspective on a particular theme. Some chapters, including those by Joan Thirsk, Nadine Vivier, and Alain Belmont, offer a Europe-wide perspective, and two chapters, by Jean-Michel Chevet and Alun Howkins, are explicitly comparative. In a rather different way, Richard Britnell uses British and French material critically, to assess theoretical models that have broader applicability for medieval rural development in the European and wider world.

Even where the authors make few overt comparisons, they frequently prompt parallel equivalent work in the other country. Annie Antoine's contribution mirrors the work that Elizabeth Griffiths and Mark Overton are completing on share farming in Britain,¹ and Florent Quellier's chapter on intensive fruit and vegetable growing in the Paris regions has an obvious counterpart in Malcolm Thick's studies of London market gardens.² Peter Dewey's reflections of the progress of mechanization in British farming chimes well with Jean-Michel's Chevet's call for comparative study, as part of the process of distinguishing stereotype from reality in French and British rural change.

The themes discussed by Joan Thirsk and Nadine Vivier in the opening chapters provide a vital context for ensuring that the international flow of ideas and debates on rural issues and improvement is seen as underpinning agricultural change in both countries. Thirsk uses the modern analogy of the World Wide Web to emphasize the wide and rapid accessibility of agricultural ideas in the eighteenth centuries, both through translated writings and from travellers' reports on their visits. This was not only an Anglo-French process, but also one engaged in by German agriculturalists. Working backwards from this, she provides evidence

¹ E. Griffiths and M. Overton, *Farming to halves. The hidden history of sharefarming in England from medieval to modern times* (2009).

² M. Thick, *The Neat House Gardens. Early market gardening around London* (1998).

of an equivalent international flow of farming books, even in the sixteenth century, and of the wide range of topics they embraced. But Thirsk's chapter also makes a strong case for the importance of non-élite participation in these exchanges and, equally, the explicit evidence that seventeenth-century English agriculturalists were writing for practical farmers and not simply for the intellectual and social élite. It points to areas such as vegetable and fruit growing to show the crucial part played by internationally transmitted information and more practically, of seeds. Her examples emphasize the French connection, while acknowledging that both French and English farmers learnt from their Dutch and Flemish counterparts, an aspect of the pan-European connection that needs further research.

Nadine Vivier's chapter focuses on the shifting concerns of French agricultural writers in the century after 1750. She argues for the particular importance of the period 1750–90, when thinkers across Europe became obsessed with the idea that a single framework for the organization of land provided the ideal conditions for agricultural advance, and that the English model of agricultural revolution (seen specifically as the Norfolk system of rotations) could uniquely deliver benefits across the continent. Her argument stresses the vital part played by scientific bodies – 'academies' – as government advisors in many European countries. Jethro Tull's ideas were peculiarly seized upon because his misguided enthusiasm for repeated ploughing and cultivation to eliminate fallows, combined with a downgrading of the importance of applying dung to maintain and raise grain production, provided possibilities for experimentation and empirical verification. Enthusiasm for the 'English model' was a European rather than a purely French phenomenon, and even reached as far as Mexico. This chapter explores how governments across Europe responded to the hot topic of the day: the elimination of common rights. It demonstrates how, initially, most European countries followed the 'English model', but chose different ways to apply it. At first, the focus was on improving cereal production, but this was succeeded by solutions that shared a greater sensitivity to the social consequences of agrarian reform. Changing attitudes in international agricultural thinking are examined in detail, showing how national solutions were rejected in favour of local initiatives, despite initial fragmentation by the French Revolution of local improving societies and networks. The new trends emerged with greater attention to practical improvement, rather than the blanket adoption of English agrarian structures, and a willingness to take ideas from Germany and the Mediterranean littoral, which were more in tune with the varied climatic conditions of the French regions. This was followed by a growing professionalization of agricultural science and its institutions, which mirrors the German situation, where Thae's attention shifted from English examples to wider European comparisons. This was a world in which ideas travelled between continental countries and, indeed, to the New World.

While the opening chapters set an international dimension to the themes of Franco-British comparability, the second cluster of chapters on farmers and peasants provides a striking series of revisionist studies that stress the extent to which stereotypes of farming on both sides of the Channel need to be broken down. On the English side, Alun Howkins argues that late nineteenth- and twentieth-century English historiography, which portrayed farming as dominated by the great tenant farm, needs to be balanced by an understanding of the large numbers of smallholders and farmer-tradesmen in the countryside, whose contribution to the social fabric of rural society was enormous, but whose economic contribution has been

underestimated. Nineteenth-century French commentators were surprised at the large numbers of small farms in England. Statistically, 74 per cent of farms were smaller than 100 acres (40 hectares) and small farmers were under-reported in the census. The chapter examines this way of life, which increasingly made farming dependent on other sources of family income. Hawkins uses local data from Sussex, oral evidence, and a variety of other sources across the whole of England, to show how family labour and neighbourly reciprocity created a rural lifestyle and community very similar to his own experience of the small farmers who were his neighbours in the Orme district of Normandy in the 1990s.

The corrective to long-standing views that stress the differences in farming structures in England and France is taken up in a highly quantitative way by Jean-Michel Chevet. Beginning with an exposition of the ways in which socialist theories in the nineteenth century stressed the importance of enclosure and the expropriation of the small farmer as key to Britain's economic development in the age of the Industrial Revolution, he contrasts this with the highly political way in which French historians and commentators have used, and continue to use, the intervention of the state in rural society during the French Revolution to underscore and justify the central position of the French peasantry in the articulation of French national identity. In a bold attempt to re-think these polarities, Chevet uses statistical data on British and French landholding from the 1890s, reworking them on a comparative basis. His figures suggest that, although there were distinctly higher numbers of larger farms in Britain, when we look at farms smaller than 50 acres (20 hectares), the patterns were by no means dissimilar, neither was the structure of agricultural employment very different. His figures require difficult extrapolations because of the different kinds of land considered in the respective surveys but, overall, his comparative reconstruction goes far towards breaking down the cross-channel polarization of perspectives on agriculture. In France, for instance, Chevet provides figures that show that there was a greater acreage held in farms of over 100 acres (40 hectares) than in Great Britain. In France, although a more varied group of agriculturalists could make a profitable living for their families from very small plots of land, taking into account the considerable acreage under vines in the country, there was a smaller percentage of holders of plots under five acres than in Britain. He even argues that in terms of the numbers and proportion of farmers with five to ten hectares (12.5 to 25 acres) whose holdings were potentially self-sufficient, the proportion was only slightly higher than in Britain. It is important to note that this thought-provoking challenge to long-held orthodoxies compares France and Britain rather than France and England, but it nevertheless provides an important quantitative and national overview and support for Alun Howkins' qualitative data.

Howkins' and Chevet's contrasting methodological approaches to demolishing the myth of French peasants and British farmers, the one stressing the extent of smaller holdings in England and the importance of non-monetary local transactions, the other the importance of larger holdings in France and the false nature of the idea of peasant self-sufficiency, are complemented in the other two chapters in the section. Annie Antoine rehabilitates the share-farming *métayer* in western France, using farm accounts and inventories to show how the stereotype of *métayage* as the resort of small-scale and impoverished farmers, working in systems incapable of agricultural improvement, needs total revision. Meticulously reconstructing the relationship between the landlord and the farmer on one estate, she demonstrates both the

farmer's freedom of action and the consultative nature of the relationship with his landlord, and the extent to which, on the livestock side of the farm's operation, the farmer not only had free rein, but might hold considerable capital in hand over the course of the year, which was only accounted for at the year end. She also argues that the landlord's view of the relationship with the tenant was one of social engagement, not solely economic oppression.

Michael Turner's chapter looks at a different aspect of the relationship between landholding and increasing farm sizes in England, by considering the evidence for the survival of older 'feudal' tenures into the nineteenth and twentieth centuries and, with them, the survival of Bob Allen's 'yeomen', who Allen himself characterized as having disappeared by the late eighteenth century. Turner uses evidence from the *General views of agriculture* of c.1800, the reports of the copyhold commission in the mid-nineteenth century, and enquiries into the institutional estates of Oxford and Cambridge colleges, public schools, and the Anglican Church, to derive an estimate of the amount of land held beneficially in the nineteenth and early twentieth centuries. He concludes that something like 1.2 million acres of institutional lands remained in 'yeoman' hands in the second quarter of the nineteenth century and, by extrapolating from a detailed reworking of the copyhold commissioners' report, he argues that something like a further half a million to one million acres were enfranchised by private landlords. A significant proportion of English land remained under such beneficial tenancies in the mid-nineteenth century. The survival of archaic tenancies in England long after they had disappeared in France provides a further corrective to traditional stereotypes but, as Turner himself intends to discover in future research, also begs questions about the extent to which copyholds were farmed as units, or as part of larger farms.

The third section, on rural society and the market, opens with a wide-ranging critical analysis of the major theories underpinning the growth of the medieval and early modern economies in Europe by Richard Britnell. He analyses Malthusian and Marxist models of rural economic development, showing how each presupposes an ongoing process of commercialization, and outlines his own 'Smithian' model, with commercial development as its driving force, only to demolish its efficacy as a monocausal explanation. This is followed by a discussion of how far medieval economic history can advance without a theoretical basis, and when the implicit model, in the eclectic stance of the majority of current researchers, is itself a barrier to fruitful endeavour. He cautiously suggests that the use of biological and evolutionary analogies can provide a powerful analytical tool, partly because they allow a wider range of variables than most economic models, and partly because they allow currently competing explanations to be considered as parallel developments.

G rard B aur's chapter provides an analysis of the impact of agricultural diversification on the French rural economy in the early modern period, a time when French government policy was dominated by the need to prevent famine and harvest crisis. Starting from the widely accepted revisionist position, which denies that France had a predominantly subsistence economy characterized by market-shy farmers – who concentrated on grain production for the family, and saw livestock husbandry as a necessarily evil whose primary function was to manure the land and provide draught animals – B aur addresses the question of what market participation meant in a French context and how peasant farmers found niches to exploit in the market process. He stresses the importance of garden production as a nursery of enterprise.

He examines too the spread of new crops in France and their relationship to existing farming practice in the context of Joan Thirsk's ideas on alternative agriculture. Relating their expansion to the growth of cities such as Paris and Lyons, he also analyses the trade in livestock, the extent of long-distance animal movements, and the development of specialisms such as veal calves and dairying. While stressing the encouragement to agricultural innovation given by government, agricultural societies, and developing market opportunities, he points out the risks of adopting new ideas. Innovation diverted land and capital from the core activity of food production and fostered government ambivalence towards the expansion of alternative agricultural enterprises, which were undertaken at the expense of grain production and threatened the food supply.

John Chartres considers the market dynamics of British agriculture in the seventeenth and eighteenth centuries, where market flexibility and adaptable land, sea and river transport systems increasingly distanced governments from fears of famine and made unnecessary their obsession with the supply of basic foodstuffs. In a wide-ranging survey, he argues that by the late seventeenth century, market integration involved Ireland, as well as Scotland and Wales, and provided a launch pad for agricultural specialization and market adaptation. The changing organization of markets in response to rising volumes of trade led to smaller markets becoming redundant as their thriving neighbours increased the number of weekly market days. Farmers' responses to grain crises in the earlier seventeenth century were rapid but, in the second half of the century, deficits were replaced by regular surpluses. Emergency grain holdings and controls on grain prices and middlemen disappeared. Britain came to rely on a combination of free trade and the Poor Law to provide food security for its population. This was aided by improvements in the design and efficiency of bulk carrier ships, and the rising role of London as an international reference market like Amsterdam.

In the eighteenth century, urban growth in the provinces, following on from London's spectacular growth up to 1650, continued to encourage specialization and intensify transport improvements. England's eastern littoral provides good examples of this process, with Newcastle's rapid growth on the back of the coastwise coal trade to London, prompting new large-scale agrarian restructuring to provision it, while being able to rely on easy access to the Amsterdam grain market as a fallback when harvests failed. Chartres argues that the long-established advanced agriculture of East Anglia, with its rotations and mixed farming régime, did not require a revolution in yields in the eighteenth century to feed England's expanding population, merely the wider adoption of its techniques across lowland England, and the effective articulation of the market. Areas of lighter soils to the east, with good access to river and coastal transport, were able to expand grain output, while those further west, on heavy clays, without access to water transport, came to specialize in dairy or meat livestock. London's immediate hinterland specialized in hay and market gardening, but the animals that ended up on its dinner tables had been reared and raised at great distances – including Wales, Scotland and Ireland – following the patterns predicted by von Thünen's model. It was a system that provided niches for both large farms and smallholdings and gardens, made possible by the absence of precisely that fear of grain shortage that Béaur sees as a continuing constraint on French agrarian development. Recent research shows similar patterns and niches around the new northern industrial cities from the later eighteenth century onwards.

Florent Quellier's chapter uses a case study of the changing taste in one soft fruit – the peach

– to show the dynamism of small-scale market gardening and fruit production around Paris in the sixteenth to eighteenth centuries. New varieties and techniques of pruning, training and grafting fruit trees saw the development of specialized peach-growing areas in the suburbs of Paris and its immediate hinterland. The building of south-facing espalier walls, intensive manuring and use of the soil, careful frost-protection methods, and the use of glass cloches and wooden frames to promote early growth, enabled a group of small producers to provide the Paris market profitably with a wide range of exotic and luxury flowers, fruit and vegetables. The market gardeners spread the risk by multiple cropping on their small plots, providing a succession of marketable goods over the year, and enabling them to tame the local climate to make a good living. Quellier convincingly shows that the adaptations of technique were largely the work of practical men who learned from each other, rather than following the dictates of the growing range of farming manuals.

Apart from the Parisian market garden area, the *marais*, there were areas along the major transport routes within 40 miles of Paris that developed specialist crops for the luxury market. They tended to concentrate on less profitable crops that needed more space, such as fruit trees and vines, often growing them in close association. The successful areas were all close to forests, which provided wild root stock for experimentation, but were also dotted with the hunting lodges and summer residences of the aristocratic élite, all with their own gardens and gardeners. Quellier argues that this was a fruitful conjunction for both élite and peasant groups, providing exchange of ideas and varieties (intended or illicit) and giving those employed in élite gardens the chance to gain knowledge of developments elsewhere. The smallholders who adopted these crops on their own holdings often used or became part of the network of middlemen who brought the produce to Paris and diversified into a variety of other trades, fully engaging with the market economy. He argues that there was also a two-way relationship between the expanding range of perishable vegetables available in Paris and the development of a new French cuisine using fresh herbs and vegetables, in place of the exotic spices of traditional cooking.

The final section of the book looks at the impact of technical change on rural society. Alain Belmont's chapter on long-term changes in milling technology is wide-ranging in every respect: in period, from the medieval to the nineteenth century; geographically, across the whole of western Europe; and taking in the implications of changes for both health and nutrition. The adoption of superior, harder flint millstones from sources that were first regional and later international in their market reach, can be seen as an indicator, not just of improved technologies and market spread, but of changes in dietary preference and health. The 'improved' millstones were particularly appropriate for grinding wheat rather than barley, rye, or grain mixtures, so the spread of new milling technology provides an indicator of the adoption of white 'wheaten' loaves. He suggests that there was always a capacity to mill white flour, but that it increased relative to the milling facilities available for lesser grains. Equally interesting are his findings that the switch into superior millstones had an additional health benefit for the mass of the population because they did not shed stone fragments. Exhumed jawbones from the medieval period and nineteenth century show markedly different characteristics in terms of the number of broken teeth: superior milling provides a much more plausible explanation than those previously expounded. Improved millstones brought higher-quality bread, but the

international trade, and the prominence of centres in France and Germany, also created large-scale production and important trading links.

Susanna Wade Martins' chapter provides an overview of that very British phenomenon, the model farm on the great estate, showing the various influences on its design and the way in which it changed over time to reflect new farming practices and building techniques. She identifies two major periods of building, one during the period of the Napoleonic Wars, when grain prices were exceptionally high, and a second between 1840 and 1870. In the earlier period, building activity was linked to profitable arable areas of eastern England but, in the second peak, it occurred in more pastoral regions, partly reflecting changes in agriculture. Wade Martins stresses the importance of the part played by super-rich landowning individuals such as Thomas Coke of Holkham, and families such as the Leveson-Gowers (Marquesses of Stafford and later Dukes of Sutherland and Bridgwater), the Russells (Dukes of Bedford), and the Grosvenors (Dukes of Westminster). The royal family, particularly George III and Prince Albert, also made important contributions to the model farm movement. The use of new materials, such as steel and concrete, shows how nineteenth-century farm buildings were at the cutting edge of modern building design technology.

Peter Dewey closes the volume with a succinct and judicious summary of his work on the adoption of farm machinery in English agriculture. Laying out the extent to which farm tasks in arable and pasture production, and those on the farmstead, had or had not been mechanized by the end of the nineteenth century, he relates this to the changes in production, productivity, and labour availability in the English countryside. Evidence for the overall rate of mechanization c.1917 suggests that simple machines made up the bulk of equipment on the farm, with the binder the most complex machine in widespread use. Estimates of investment in machinery and equipment even on larger farms of 100–300 acres in the 1930s remain as low as 18 per cent of total capital value. Most investment went on equipment designed to speed the progress of the grain and hay harvests on larger farms. He concludes with a shrewd discussion of the relationship of mechanization to the processes of labour migration from the countryside in the later nineteenth century and the loss of rural industries. Dewey's findings certainly suggest that a comparison of the adoption of machinery in France and Britain would be a fruitful project for the future and one where, again, we might be more surprised by similarities than differences over the course of the nineteenth century.

The chapters in this volume help to establish a new sense that, far from representing polarities of rural development, many features of the structures and development of agriculture in both France and Britain were part of a common process of adaptation to the market and urbanization in western Europe. The chapters treat the themes in a complementary mode rather than schematically, but it is noticeable that the French contributors often have a more overtly comparative outlook than their British counterparts. This may reflect the ways in which writing and research has been influenced by the demands of teaching the higher level masters course, the *Agrégé* in history, which over the past ten years has had a nationally determined comparative element covering, at first, British and French rural society and, more recently, the early modern societies of Britain, France and Spain. The needs of teaching, and the provision of advanced text books for that competitive examination may inadvertently have been the spur to a greater focus on that most demanding of research fields, comparative history.

England and France
in a European world of farming knowledge

The world-wide farming web, 1500–1800

by Joan Thirsk

It may seem preposterous to contemplate the existence of a ‘World Wide Web’ between 1500 and 1800, and certainly the term greatly overstates the case. But so does the same term nowadays: we most certainly do not have a truly ‘worldwide’ web; what we do have are worldwide networks of like-minded people who are able to make contact quickly and easily, and exchange information and advice on their common interests. Moreover, they are constantly astonished at what they discover and the way it facilitates cooperative action.

The same kind of networks came into existence in the early modern period, and we are now in a better position than ever before to understand their full implications. We have seen the construction of the European Union: it has promoted the need for the efficient exchange of information, and the World Wide Web has provided the speediest means. At a gentler pace, however, we have been over this ground before. It is therefore instructive to examine that earlier experience, when the first worldwide web emerged around 1500, and to explore its momentous consequences.

The first worldwide web came into existence because of the printing revolution. Over earlier centuries people had had every chance to write to each other and, if they travelled, to talk to each other. But printed books added a wholly new dimension to the spread of information. On this occasion, I confine myself to exchanges between England, Germany and France, but a large archive awaits investigation in other European countries, both eastern and western.

I have set down 1500 as the starting date for this new worldwide web, but strictly speaking, among agriculturists, it started thirty years earlier, in 1470, for in that year in Venice a compilation, *Rei Rusticae Scriptores*, was published, incorporating the writing of Cato, Varro, Columella and Palladius on farming. Eleven editions had appeared by 1504 and another six by 1521. Plainly it was eagerly read across Europe.¹ Thereafter, printed books became a valued new medium for spreading ideas about farming procedures, and the classical writers offered the first texts. Then, as every fresh farming topic came up for discussion, books in French, German, and English appeared, along with meetings of people and correspondence between them. They were all discussing the same things; the topics of their debates were actually

¹ For a convenient edition, see J. G. Schneider (ed.), *Rei rusticae scriptores* (4 vols, 1794), which lists all the early editions.

like waves of fashion, and more often than not they were prompted by what they read in books.

To secure a better understanding of how it all happened, I work backwards chronologically, starting in 1800 and moving back to 1500, because the evidence is at its shining best at the end of my period, between 1750 and 1800. It is remarkable to realize how quickly word spread between 1750 and 1800; new books were watched for, correspondents wrote asking for them to be sent immediately on publication, and people corresponded and visited each other. The British Library has eight volumes of Arthur Young's correspondence with people who read his books: letters from Italy, one from a Dane who had visited Young in 1799, another from the Czar of Russia in 1802 explaining that he wanted to set up an English farm near St Petersburg, stocking it in imitation of the King of England; he had already appointed a Mr Davidson to do the job, and the letter introduced Davidson to Young, implying that he was still in England and would visit Young before he set off to Russia. An intriguing story might result from investigating the results in Russia.²

Some of the same scenes were re-enacted in Germany, when Caspar Voght, son of a Hamburg silk and linen merchant, went to England, initially being interested in its theatre and literature. He went home in 1786 filled with the desire to engage in agricultural improvement on three farms he had bought north of Hamburg, at Flottbek. He had visited William Shenstone at Halesowen in Worcestershire and seen his model estate and farm; he went home carrying fresh ideas and English implements. Then, in 1793, he returned and stayed for two years, living in London, attending scientific lectures there, and visiting farmers who were recommended to him by Sir John Sinclair. Arthur Young's *Tour of Ireland* had been published in 1780, followed immediately by a German translation, so Voght went on almost exactly the same journey around Ireland. He attended lectures at Edinburgh University, and formed a high opinion of Scottish forestry. He got to know the Booth family in Falkirk who had a large tree nursery and he persuaded their younger son, James, to go back with him to Flottbek and look after the tree plantations there. A whole ship's cargo of trees and shrubs went to Hamburg to plant up 25 hectares, and Booth subsequently set up his own tree nursery there, and trained his son. The Booth nursery became the largest of its kind in Europe. The farmland was cultivated with English ploughs, drilled with a Lancashire-invented seed drill; Scottish two-wheeled carts were used, English horse harness, and a Scottish threshing mill. A Scottish farm manager took charge, another Scotsman set up a workshop to make the implements. A contract for street cleaning in Flottbek enabled Voght to use town rubbish to fertilize his land. English and Scottish influences were everywhere. It is an exhilarating story of foreign contacts transforming a local scene. I am sure that other examples are waiting to be retrieved from the archives.³

The correspondence of Arthur Young splendidly illustrates the wide range of his contacts, showing how people became acquainted through books, letters and meetings, and threw their contributions into a common pool. The most celebrated German to publicize English farming

² For Arthur Young's Correspondence, see BL, Add. Mss 35126–38. The letter about Davidson is Add. Ms. 35128, fo. 488. On fo. 49 is a letter to Arthur Voght, introducing Caspar Voght (see n. 3).

³ G. Ahrens, *Caspar Voght und sein Mustergut Flottbek* (1969), reviewed by Thirsk in *AgHR* 24 (1976), pp. 80–2.

among his compatriots, however, was Albrecht Daniel Thaer, who never visited England, but read all the English farming books diligently and then published in German his *Introduction to a knowledge of English husbandry* (1798). Thaer, born in 1752, came from Celle in Hanover, and was a physician (along with his father) at the Hanoverian court. English influences on him were first nurtured there. We see how he built up his interest in farming from a letter he wrote to Young in 1799. A whole set of *Annals of agriculture* had been sent to him anonymously, and he tried to discover if Sir John Sinclair was responsible. Sir John had sent no covering note and never replied to his enquiries, but Thaer was most anxious to pay for the books. His laboured letter included a cheque in payment for the *Annals*. It also showed that Sir John had previously sent some of the *General views of agriculture* as well. Thaer had also sent his own book on English agriculture to Young, but had received no acknowledgment, so he asked if it had arrived. Was this the copy, I asked myself, that found its way into George III's personal library? That royal copy now reposes in the British Library, where I used it years ago and admired the royal crest on the leather binding. But perhaps Thaer sent a separate copy to George III: after all, the king was always known as Farmer George.⁴

Thaer directed a whole stream of English influences into a river that had already been flowing strongly in Germany from 1750 onwards. I am told that there are over a hundred accounts by Germans who visited England around that time. I possess one such account relating to young Prussians who were in London from March 1765 until April 1766.⁵ Either they were staying in the house of Bartholomew Rocque outside London, or they were lodging nearby. Bartholomew Rocque and his brother John, who became a famous surveyor and cartographer, had come to England as children, as Huguenot refugees from France. Bartholomew was a farmer in touch with all the latest farming improvements, and one of the Prussian reports announced that they were sending home seeds of burnet, timothy, lucerne, and turnip, supplied by Rocque, who admitted making handsome profits from growing these plants for seed. After seed harvest, he packed the hay in sacks and sold it to gardeners round about for feeding their horses. They took their vegetable produce weekly into London, but wanted to devote all their precious land to their more valuable vegetable crops.

Rocque was in close association with the Royal Society of Arts in London which was very active at this time, spurring on trials of new farming practices by offering prizes. Rocque sent our German farmers off to visit innovative farmers that he knew, one of whom was a parson, Dr Lamb, at Ridley (Kent), who had fed burnet to his cows and sheep from February to May, and won a Royal Society of Arts prize. Before the Society stirred interest in burnet, Rocque said that it had only been grown in gardens and eaten as a salad plant. Our German visitors met another farmer who was using a plough with two shares, and they decided to buy one. Meetings like that at this time were innumerable.

⁴ For the letter from Thaer to Arthur Young, see BL, Add. Ms. 35128, fos 78–80.

⁵ Typescript (in author's possession) of a German Ms. from a Berlin archive, being the report of a visit by young Prussians to England, Mar. 1765–Apr. 1766. It is entitled 'Schreiben des nach England, um die

Landwirtschaft daselbst zu lernen, abgeschickten Herrn Neuhaus'. Messrs Borries, Reisel, and Müller also wrote some of it. In May 1766, the full text was assembled in Prussia and was passed to the State and War Minister by Von Schlabrendorff, writing from Breslau. On John Rocque, see ODNB.

Bartholomew Rocque was a key figure in the communication network. He leads me back to the French-English connection, for that was every bit as vigorous as the German. Duhamel du Monceau made English agricultural improvements known to Frenchmen in 1753, by publishing a book about Tull's principles, adding to it his own views and experience. Five more volumes followed. Then he published another work on English husbandry, the *Eléments d'agriculture* (1762), in two volumes. André Bourde attributed the many French books on improved agriculture that came afterwards to the impulse of Duhamel's work.⁶

Arthur Young, of course, visited France and published his account in 1792–4. His vilification of French farming is well known, though he would have had to change his tune had he viewed the scene in the 1880s and 1890s!⁷ But in the years between 1760 and 1800 English farming was the model. We go back a few years before Young's visit to France to read the highly informative account by François Rochefoucauld, coming to England when he was 18 years old, with his younger brother, Alexandre, and their Polish tutor, Lazowski, to study improved farming. The boys had been taught by their father, the Duc de Liancourt, how to travel observantly (he himself had spent time in England as a young man in 1768–9, but his account was confiscated during the Revolution and has never been found). His sons, arriving in 1784, took advice in London about where to start their travels.

The Rochefoucauld party was urged to go to Suffolk, and so they met Young who then accompanied them through East Anglia. They were struck by assertions everywhere that improvement had been remarkable *in the last 30–40 years*, in other words, starting in the late 1740s. Bare fallows were now deemed unnecessary, as turnips and clover had been introduced into a four-course rotation. A great transformation had been wrought, which included other benefits, starting with marl used to improve the sandy soils, and manure brought by sea from London and mixed with Kent chalk for more fertilizer. The Suffolk sandlings were growing carrots, which turned formerly useless land into gold, the carrots being fed to horses and pigs. Whole fields of cabbages were grown to feed cows in winter. Meat production had also benefited, for many cattle were being driven from Scotland and fattened there. Rabbit warrens made use of heathland. A Suffolk farmer, Richard Reeve, and a labourer went to France in 1789 to work on the Rochefoucauld estate, and two French labourers came to learn English farming in Suffolk.⁸

The Rochefoucaulds, unlike the Germans, were also struck by the fact that the English gentry were involved in hands-on farming with the result that peasant farmers were generally treated with respect, not despised as an inferior class whose purpose was to feed the rich. Farming was regarded as an honourable activity, and Suffolk farmers discussed it all very intelligently, obviously gathering their information here, there and everywhere. I dare say that

⁶ H. L. Duhamel du Monceau, *Traité de la culture des terres suivant les principes de M. Tull* (5 vols, 1753, 1757); id., *Éléments d'agriculture* (2 vols, 1762); A. Bourde, *Agronomie et agronomes en France au XVIII^e siècle* (2 vols, 1967), (i), *Les hommes et la terre*, pp. 31, 253ff.; see also id., *The influence of England on the French agronomes, 1750–89* (1953).

⁷ A. Young, *Travels during the years 1787, 1788, and*

1789 ... with a view of ascertaining the cultivation ... of the kingdom of France (2nd edn, 1794); to be compared with M. B. Edwards (ed.), *Arthur Young's travels in France ...* (1905), when she visited France in the great agricultural depression.

⁸ N. Scarfe (ed.), *A Frenchman's year in Suffolk, 1784* (Suffolk Rec. Soc. 30, 1988), pp. 126, 134–6, 156, 165.

the French had a different mindset from the Prussians who, while being equally interested in improving their farming, came from a culture where the peasantry were not despised. The two nationalities were seeing the same scene and picked up *some* of the same features about English practice but made other observations with a different intensity. The Rochefoucaulds were impressed by the many farmers' clubs that were a highly effective means of spreading information about new farming methods.⁹ I am sure that a closer reading of other such reports, French and German, would yield more insights on that score. But it is time to move backwards to the worldwide web in the sixteenth and seventeenth centuries.

One difference in this earlier period is immediately noticeable, namely, the direction in which foreign influences flowed. In 1800 everyone looked to the English as the exemplary agriculturists; in 1500 the movement was in exactly the reverse direction, and the English were learning from the French, Flemish, and Dutch. It was another period of exciting developments, particularly between 1560 and 1660. It is again important to discover what people were actually doing, rather than looking simply at the spread of ideas without knowing what action followed. But it soon becomes clear that the books leave the first footprints. It is positively startling to realize how the books first stirred things up, followed by the correspondence, then the trials and experiments, and gradually the wider adoption of the new procedures. Much more evidence bearing on that order of events is waiting to be revealed.

The first English books about country life printed in the fifteenth century focused on hunting and falconry, and were directed at nobility and rich gentry. In the sixteenth century, English books on practical agriculture start with two in 1523, one to help landowners, the other to help farmers, both written by John Fitzherbert, a Derbyshire farmer, who was fairly certainly helped by his younger brother Anthony, a lawyer. They made no explicit references to the classical writers in the first editions, although the text showed that Fitzherbert had read them. Fitzherbert looks at present like a prescient loner, peering further ahead than his fellows, though his books urgently need deeper comparison with early French writing.¹⁰

It is only after 1550 that a stronger wave of interest in agricultural improvement swirled over the scene, showing the French and English falling over each other to write books dealing with the same topics. It suggests strongly that, in both countries, gentlemen farmers were reading each other and were thus influenced to move in the same direction. The examples offered here betoken networks of information being built up between the two countries, among people pursuing the same lines of action.

Bernard Palissy affords the first illustration: this man was in charge of the French royal gardens by 1570 and was writing on agriculture, in 1563 publishing *Récépte veritable* and, in 1580, *Discours admirable*. One example from the second book contains a fine account of marl, and its value in fertilizing the arable. At just about the same time, the English too were reviving their interest in marl. Fitzherbert referred to disused marlpits. We in England have a superbly detailed text on marl by Gervase Markham, himself a farmer who had read Palissy. Now, in 1625, some years after he had promised it, Markham edited a treatise that had been written

⁹ Ibid., pp. 126, 146, 188–90.

¹⁰ Books on hawking appeared as early as 1486 in both France and England, see J. E. Harting, *Bibliotheca*

accipitraria (1891); J. Fitzherbert, *Booke of husbandry* (1523); id., *The book of surveying* (1523).

earlier by someone else. It explained the four different kinds of marl, grey, blue, yellow, and red, and their use. It showed much detailed practical experience in Kent; and in the British Library we have a manuscript consisting of the notes of someone who around this time collected all the information he could find about marl. So he put together Markham's treatise, a long quotation from Palissy, a long piece from Fitzherbert, and more; it was a hot topic.¹¹

I am fairly confident that I know who wrote Markham's treatise: someone having land in the Kent parish where I live, where we have old marlpits. In fact, I have actually dug into one with my local farmer, and we have documentary evidence that marl was used there once when they turned old pasture into arable.¹² In other words, the books *are* intimately related to actual practice. (Incidentally, Gervase Markham was more than familiar with French husbandry for he revised the English translation of Estienne and Liébault's *La maison rustique*. Surflet had translated it very faithfully in 1600, and Markham revised it in 1616.¹³) Innumerable other English readers at the same period mentioned *La maison rustique* in their writing; they had read it carefully.

Another significant theme in both French and English writing was the growing of woad. Estienne and Liébault published *La maison rustique* in 1564 and 1570 (with many later editions). They named woad among the industrial crops for which the Toulouse region was famous. Our first evidence of woad cultivation in England comes from the Southampton area in 1548, started by a partnership including Henri Bretayne (plainly a Frenchman), and by the 1580s the crop had become all the rage in England. Our documentary evidence, moreover, is quite specific about the many *small farmers* engaged in growing it by then, though they had not themselves read the books. Gentlemen landowners were also growers. The craze for woad-growing in England had been precipitated by the shortages of woad from Toulouse; the expertise arrived in England from France; a woadmill was imported from France by one Englishman, Benedict Webb. Woad spread so rapidly in the south of England as to cause alarm to the English government, who actually banned the growing of it for a year or two, but then allowed it under restrictions.¹⁴

Another theme in both French and English writing was poultry-keeping. The French author was Prudent Choyselat, who published a treatise on poultry in 1567, showing a highly commercial attitude towards the production of eggs and meat, far in advance of the skills shown in England. It was translated into English in 1580. Then an English author on the subject appeared, Leonard Mascall, who published *The husbandlye ordning and gouernmente of poultrie*

¹¹ B. Palissy, *Oeuvres complètes*, ed. P.-A. Cap (1844); on marl, see id., *Resources: a treatise on 'water and springs'*, transl. E. E. Willett (1876); G. Markham, *The enrichment of the Weald of Kent* (1625); Markham referred to Palissy in his *Farewell to husbandry* (p. 31 in a later edition of 1676); BL, Sloane Ms. 1607.

¹² J. Thirsk (ed.), *Hadlow: life, land and people in a Wealden parish, 1460–1600* (2007), ch. 13, 'The Rivers family'.

¹³ C. Estienne and J. Liébault, *Maison rustique or The cuntry farme: compyled in the French tongue by Charles Stevens and John Liebault. And translated*

into English by Richard Surflet. Now newly reuiued, corrected, and augmented, with diuers large additions, out of ...Serres ...Vinet ...Albyterio ...Grilli ...and other authors ... By Geruase Markham (transl. Surflet 1600; rev. Markham 1616).

¹⁴ J. Thirsk, *Alternative agriculture, a history from the Black Death to the present day* (1997), pp. 79–96; also R. W. Hoyle, 'Woad in the 1580s: alternative agriculture in England', in Hoyle (ed.), *People, landscape and alternative agriculture: essays for Joan Thirsk* (Agricultural History Review Supp. Ser. 3, 2004), pp. 56–73.

in 1581, having been prompted by the wife of James Woodford, chief clerk of Queen Elizabeth's kitchen. Mistress Woodford said she wanted to know 'how to govern poultry and order strange wildfowl'. Mascall wrote his book for her, quoting a great deal from Columella and from *La maison rustique*; some of his passages cite *La maison rustique* word for word.¹⁵

Before I ever explored the books on poultry, I had been assembling for a long time scattered clues found in probate inventories suggesting the more commercial production of poultry in England, notably in East Anglia. I suspected foreign, especially Flemish influences, because the inventories that showed poultry on a larger-than-usual scale were often of people with foreign-sounding surnames. I also noticed the frequency with which buckwheat was grown in eastern England; before this time it was not a common crop in England; and I knew that buckwheat was used to feed poultry. In fact, Choysselat mentions buckwheat for poultry. I now firmly believe that French and Low Countries influence inspired the more commercial development of English poultry-keeping.

Another possibly significant match can be made between French and English books on the subject of farming implements. A French author called François Béroalde de Verville published a work called *Théâtre des instrumens mathématiques et mécaniques* in 1578, showing an illustration of a three-share plough. It hints at new trains of thought on agricultural implements; in 1601 we have two English works by Edward Maxey and Hugh Plat about a board for setting corn in rows. It economized on seed (not on labour, you notice), but then seed was the problem in the forefront of farmers' minds, following the European famine of 1595–96.¹⁶

In yet other directions, we can identify books about setting up plant nurseries, grafting fruit trees and, most important of all, books on growing vegetables, herbs, and fruit. Horticulture was the subject that absolutely forged ahead of all others in the seventeenth century; and it had perhaps the greatest impact, for it expanded the food supply, with lasting consequences for diet. Historians know well how horticulture came to dominate publications on agriculture in the seventeenth century. But they have not fully recognized all its dimensions. André Bourde wrote two very well-researched volumes on the French agronomes, but he treated the interest in horticulture as an extravagant indulgence *by the rich* for adorning their gardens and their meal-tables with beautiful objects and foods. He did not pay attention to two prime lessons that horticulture also taught, first, the rewards of careful hand cultivation and, second, the foods it could yield for the benefit of the whole population.¹⁷ The gardens, after all, were cultivated by working men and women. They were observant people, some used their brains and took seeds and cuttings for themselves; the arts of gardening spread widely.

The full consequences of fine gardening seem to me to have been underrated through the emphasis on horticulture as an upper class indulgence. It ultimately had far-reaching effects throughout society, and some of the consequences were not slow to make an impact. Many English parsons took a deep interest in horticulture; a multitude of orchards are listed on their

¹⁵ P. Le Choysselat, *The discours oeconomique of Prudent Choysselat*, ed. H. A. D. Neville (1951); L. Mascall, *The husbandlye ordning and gouernmente of poultrie* (1581).

¹⁶ F. Béroalde de Verville, *Théâtre des instrumens*

mathématiques et mécaniques (1578, also 1582); Bourde, *Agronomie*, I, p. 47, n. 3; E. Maxey, *A new inst[r]uction of plowing and setting of corne* (1601); H. Plat, *The newe and admirable arte of setting of corne* (1600 and 1601).

¹⁷ Bourde, *Agronomie*, I, pp. 59ff.

glebe land. It is also startling to find parishes in which herbs and fruits were actually tithed, signifying the fact that parishioners grew enough to sell. The household accounts of nobility and gentry are full of references to village folk, often described as poor women, bringing delectable fruits, vegetables, and herbs *of their own growing* to the doors of manor houses. Even more suggestive of humble people's skills with vegetables and fruit are the household bills showing local growers delivering vegetables and fruits (weekly or twice weekly) to the Sackville family at Knole, near Sevenoaks in Kent, a grand house near my own home. Artichokes, fresh peas (delivered on Thursday night, followed by another delivery by the same person, of herbs, on Friday), spinach, lettuce, tarragon, sage, strawberries, gooseberries. These were local growers.¹⁸

Sweet cherries were a fruit that made remarkable progress in southern England, once improved varieties were introduced, three from France and two from Flanders: already by 1600 English growers were protesting at the competition they had to face from Dutch imports when they felt that they were offering a sufficiently bountiful crop of their own. The farm account of Robert Loder, a gentleman farmer in Berkshire in the 1620s, shows us a bumper harvest of such cherries, picked for him by village women. It prompted him to calculate exactly how much they ate as well as how much they picked!¹⁹ In short, horticultural expertise percolated into many places in the kingdom, and spurred the botanists to undertake a diligent search for new varieties all over the world. One of the most revealing of those accounts comes from John Parkinson, giving in one of his books in 1629 an impressive list of all the varieties of fruits that were then growing in England. Then, in 1640, he offered another book, *Theatrum botanicum*, naming more fruit varieties and explaining how he had engaged a Frenchman, Guillaume Boel, to search out more on his behalf in France and Spain. I wish that French scholars could discover more about Guillaume Boel! Parkinson was paying Boel's expenses, but there was considerable competition between botanists, and when Boel found some chickpea plants and gave them to an Essex collector, Parkinson was bitter at being cheated of the fame of making the first trials in England. 'I beat the bush', he wrote sourly, 'while another catcheth and eateth the bird'.²⁰

A third theme, by way of conclusion, has been winding its way almost in silence through this worldwide network of information on farming, and it draws attention to the contribution of labouring people, small farmers, smallholders, working men and women, to long-term agricultural improvement, alongside the well-publicized agronomes. I refer to it briefly, but attach great importance to it. The seeds of improvement through fine cultivation were planted in the fourteenth and fifteenth centuries, but they grew very slowly because they were being nursed by ordinary folk who toiled on the land, did not read books, and had no money to take risks. But ordinary folk excelled at growing some crops, such as hops, mustardseed and

¹⁸ Thirsk, *Alternative agriculture*, pp. 36–7; ead., *Food in early modern England: phases, fads, fashions, 1500–1760* (2007); Centre for Kentish Studies, Mss U269, A474–5.

¹⁹ G. E. Fussell (ed.), *Robert Loder's farm accounts*,

1610–20 (Camden Soc., Third Ser., 53 1936), pp. 148–9, 185.

²⁰ J. Parkinson, *Paradisi in sole, paradisus terrestris* (1629), *passim*; id., *Theatrum botanicum* (1640), pp. 1063–4.

roots, which rewarded careful hand cultivation, and these began to be nursed into commercial production.

Such humble people command respect for their shrewd intelligence in linking ends and means, spotting and exploiting the opportunities that suited their circumstances. References by foreigners to fine cultivation by individual farmers and gardeners are scattered all through the eighteenth-century literature. Not all were concerned with the four-course rotation and enclosures. In my own work on alternative crops, I noticed how quickly small growers took up woad that was set and gathered by hand, though that plant proved in the end to be better grown by specialists who knew how to season it through the next stage. But they also quickly spotted their chance with tobacco, and that spread very quickly across the counties. It started in England in 1618, it was growing in many counties by the middle 1620s and, although the government forbade it and in the 1650s actually sent in troops to stamp down the crop, the authorities could not stop it: tobacco was still growing in 1690.²¹

We are unlikely ever to find a contemporary account of the way labouring men recognized what a commercial future lay before them through that kind of intensive hand labour. But it would ultimately give them a market for many food crops and afford some of them an independent livelihood, freed from working for the bigger farmers. We pick up only a few clues to the growth of this rewarding occupation. Gervase Markham wrote his books for those simple men and said so, knowing that ‘studious husbandmen’ did exist. He constantly commended spade cultivation, and more widely it became quite a subject for thoughtful comment because the digging of ‘a garden mould’ before planting was seen to be so highly productive. Flemish settlers in Sandwich in Kent in the sixteenth century demonstrated the same lesson, earning fame for their Sandwich carrot. The gardeners in Sevenoaks, delivering to the Sackvilles, shed more light on small men’s gardening skills in the 1630s. Other places with highly suitable soils became precocious vegetable and fruit growing centres by the later seventeenth century, around Evesham in Worcestershire, and around Sandy in Bedfordshire; Malcolm Thick has published a fascinating account of another gardening enclave by the Thames, just about where Victoria Coach Station stands now, the Neat House Gardens in Westminster, where highly skilled market gardeners established themselves and served the rich people around Westminster with asparagus, cauliflowers, pompions, etc. We can be sure that a worldwide web of gossip, was quietly spreading the know-how, depending in their case not on books but on workaday chat. In the eighteenth century men’s clubs impressed foreigners as most effective channels of communication.²²

Increasingly, people commented on the virtues of hand labour, which was so publicly visible in market gardens. Markham had seen whole farming families, wives, children, and servants ‘at times of best leisure’, pulling out a bundle of wheat ears from the stack and sorting out the biggest ones for the seed to use when planting. So while Markham dismissed the idea of

²¹ J. Thirsk, ‘New crops and their diffusion: tobacco-growing in seventeenth-century England’, in Thirsk, *The rural economy of England* (1984), pp. 259–85.

²² G. Markham, *The English husbandman* (1613), pp. 102–3, 14; J. M. Martin, ‘The social and economic origins of the Vale of Evesham market gardening

industry’, *AgHR* 33 (1985); F. Beavington, ‘Early market gardening in Bedfordshire’, *Trans. Inst. British Geographers* 37 (1965), pp. 91–100; M. Thick, *The Neat House Gardens. Early market gardening around London* (1998).

a seed board for planting grain in the fields, he admitted seeing splendid results in gardens. Working men slowly but surely learned how and where garden cultivation would assure them a good living. Above all, they learned that they had to be working near towns where demand for their wares was assured. By 1800, this class had found a niche, and those foreigners who stayed with Bartholomew Rocque, like the Prussians I mentioned, saw plenty of them in the London suburbs, carrying their produce weekly to London. Parisian market gardeners drew the same attention.²³

When discussing the vigorous periods of conspicuous agricultural change, whether in the sixteenth or the eighteenth centuries, we have tended to focus attention on the larger farmers as though they alone were the improvers. But at the same time the humble people were digesting lessons from practical experience, much more slowly, and certainly not everywhere, but effectively in places that had the favoured gardening soils or appropriate economic conditions, and a social structure that gave them the critical mass of encouragement that they needed. Garden cultivation won much commendation around London, as contemporaries recognized its success wherever town markets were close at hand. It was so effective in Kent that visitors were astounded at how totally weed-free was the ploughed land on farms in Kent. It eliminated the need for a fallow year, they said. One of the reasons was the generous hoeing of the fields, and another was explained to them by a Kent farmer: he never put any animal dung on his land until the dung was one year old and the weed seeds had died; it was very rich stuff, consisting of street manure brought by barge from London, mixed with ox, cow, and horse dung from the farm, plus lime and sludge from ponds.²⁴

Improved farming in 1800 was a mingling of experience drawn from the farming and gardening not only of the substantial farmers but of the humble people as well, and by separating agriculture and horticulture into separate compartments we lose sight of practices that improved both, and represented a contribution by all classes of workers to an agricultural revolution.

²³ Markham, *English Husbandman*, pp. 18–19, 14–16.

²⁴ The German report of 1765–6 contains many references to fine cultivation in England. Two examples are: a comment on ‘innumerable beanfields excellently weeded at great cost in labour’ and ‘one must give the English great praise for their relentless diligence in destroying weeds both in the fields and in their gardens, and their care is correspondingly rewarded by heavier

crops.’ Such words match some English accounts. See, for example, John Evelyn in 1672 on Kent fields ‘so trim and rarely husbanded’, ‘the best cultivated of any that in my life I had anywhere seen, every field laying as even as a bowling green’, cited by Thirsk, ‘Agriculture in Kent, 1540–1640’, in M. Zell (ed.), *Early modern Kent, 1540–1640* (2000), p. 103.

European agricultural networks, 1750–1850: a view from France*

by Nadine Vivier

European intellectuals have exchanged ideas intensively across national boundaries since time immemorial, but the period from 1750 to 1790 was very special in several respects. The creation of agricultural societies spurred active networking. Agricultural writers based much of their thinking on experiments and on the knowledge of changes that took place in England, particularly in Norfolk. These improvements became known through the publications of English agricultural writers, and through the journeys and tours made by overseas visitors to see English estates. However a sharp brake was applied to this process by the Revolutionary wars, and the early years of the nineteenth century were characterized by a return to more pragmatic approaches. Though the English model remained dominant, the contribution of German, Flemish, and Italian agriculturalists was also considerable.

Although the main strands of agricultural thinking are well known, the subject has usually been treated within national straitjackets, though noting external influences. This chapter concentrates essentially on the French experience, but also tries to illuminate the networks that existed right across Europe, and thereby open up new lines of research. The starting point is the same as for Joan Thirsk's chapter, and should provide a comparative perspective on these European networks from both sides of the channel.

I

The century of the Enlightenment ranked the different sciences, and considered economics to be the most important. The German cameralists argued that the eighteenth century was the century of economics, a title supported by the huge expansion of published works on the subject. On one count, 2264 titles were published during the second half of the century alone.¹

In the first half of the century mercantilist doctrines were at the centre of the debates. For the mercantilists (Colbert in France and William Petty in England), the wealth of a state and

* The author's research funding reference is CERHIO, UMR CNRS 6558.

¹ J.-C. Perrot, *Une histoire intellectuelle de l'économie politique, XVII^e–XVIII^e siècles* (1992).

the foundations of its power emanated from its holdings of precious metals. This meant that it was necessary to prevent the outflow of gold and silver, an imperative that led states to intervene to control trade and introduce protectionism. However, even from early in the century, Pierre de Boisguilbert challenged this theory, proposing instead that agriculture was the fundamental source of a country's wealth: it had a central place in economic mechanisms because it produced both income from land, and commodities and raw materials ready for processing by industry.² Although de Boisguilbert recommended free trade and a fairer tax system, these ideas did not circulate widely. Nevertheless, Richard Cantillon, a great traveller of Irish origins, well versed in French and English cultural values, was moving in a similar direction: he saw wealth derived from both land and work.

From the 1740s onwards, debate flourished in this area, but a further element emerged in Montesquieu's idea that population decline had set in.³ Fear of falling population led to a search for both political and economic remedies, including the need to estimate economic growth, increase agricultural production by more intensive farming, and expand cultivation.

In different European countries, in all of which agriculture was an important component, this conjuncture brought about the simultaneous appearance of new ideas and theories: amongst the cameralists in Germany, liberal agrarians in Spain, and the physiocrats in France. The physiocrats who clustered around Quesnay put forward a general theory of society that rested on two essential ideas. One was the idea of a 'natural order', which enjoined governments to respect liberty and property. The second idea was, their conception of the economy, that the fundamental wealth of a society flowed from the consumption elements of production, which could only be provided by agriculture. Because this theory was fairly abstract in nature, it could be seen as valid in different countries, which helps explain the wide audience it gained across Europe between 1755 and 1770. But it was also much criticized, particularly by the Abbé Galiani in Naples, and by Adam Smith.⁴

Because these theories gave a pre-eminent role to agriculture, there emerged a close linkage between 'political economy', as developed by the 'agricultural philosophers', the physiocrats, on the one side, and 'oeconomy', that is to say the prudent management and rationalization of élite estates, on the other. The word *agronomie* was introduced into the French language in this period to describe those who had scientific approaches and skills in agriculture. Even though André Bourde has clarified the distinction between physiocrats and agronomists, these technical experts worked side-by-side with agrarian theorists, particularly those who were drawn towards the political establishment.⁵ Even some ministers and their advisers were agronomists, men such as Bertin, Turbilly, and Turgot. This particular feature makes the period 1750–90 a unique moment when agronomists did not confine themselves to studying agricultural techniques, but thought more widely about the way the world was organized, and what structural reforms were needed. All these men were part of an élite that was open to the interplay of ideas internationally, which helps explain why ideas spread so rapidly. This tendency was accentuated by the creation of 'academies'.

² P. Boisguilbert, *Le factum de la France* (1706).

³ Montesquieu, *Esprit des lois* (1748).

⁴ B. Delmas, T. Demals, and P. Steiner, *La diffusion*

internationale de la physiocratie (1995).

⁵ A. Bourde, *Agronomie et agronomes en France au XVIII^e siècle* (2 vols, 1967), I, Introduction.

Academies of arts and, later, academies of science began to be established in the late sixteenth century: the Accademia della Crusca in Florence in 1582; the Académie française, 1635; the Royal Society of London, 1662; the Académie des Sciences in Paris, 1666. Leibnitz attempted set up an academy in the Holy Roman Empire: the academy of Berlin was created in 1700, on his advice. But it was after 1720, and particularly after 1740, that new academies were born. In the German-speaking world, Frederick II of Prussia opened the 'Royal Academy of Sciences and Arts of Prussia' in 1744, then each major German town set up their own: Göttingen in 1751, Munich, Mannheim, Erfurt, and so on.⁶ In Portugal, the Lisbon society dates from 1779. Spain lagged behind, having no national academy.⁷ Besides these academies of science, there were specialist societies devoted to agriculture, founded in Italy in 1753, in Germany in 1764, and in France between 1756 and 1763. The French minister, Bertin, under physiocratic influence, decreed the setting up of agricultural societies all over France: almost every province had its own, and they devoted their energies to the great agricultural concerns of the time. All over Europe these societies followed similar patterns of activity. They held regular discussion sessions, and offered annual prizes for essays on a set problem of social importance or agricultural techniques. The essays entered for the prizes were discussed and short-listed before the prize was awarded, and the prize-winning entries were then published. Information was exchanged between societies at an intense rate. Each had its own correspondents in other provinces and abroad, and used them as consultants. So, for example, Duhamel du Monceau was a member of agricultural societies in Paris and Leyden; of the Royal Society in London; and of the academies of sciences in St Petersburg, Stockholm, Edinburgh, Palermo and Padua.⁸

As this model spread right across Europe, the publication of 'economics' books and pamphlets expanded. To appreciate the fascination for agricultural science in this period, we should also note the existence of societies not just at the provincial level but more locally. In France, 'rustic societies' came into being.⁹ They were made up of landowners and inquisitive men who wanted to increase their income. The members of such societies kept abreast of the most recent research by reading and discussing the journal publications they received. These journals were the forum to which results of farming experiments were sent, publications such as the *Gazette du commerce, de l'agriculture et des finances* (1765–83), the *Ephémérides du citoyen* (1765–72), and the Abbé Rozier's *Journal de physique* (1773–93).

There was, then, a vibrant European agrarian network during this period. In addition, there was an exchange of ideas at governmental level. Governments in most parts of Europe adopted the views of the economists that there needed to be land reforms, prioritizing agriculture in the search for ways of increasing farm production. They did not launch into this project blindly: they tried to gather information about agricultural experiments in neighbouring countries. And the model that the agronomists frequently suggested they adopt was the English one.

Interest in things English was a growing fashion in the eighteenth century. In France, Montesquieu and Voltaire played a key role because they heaped praise on the English political

⁶ H.-H. Müller, *Akademie und Wirtschaft im 18. Jahrhundert* (1975), p. 45.

⁷ A. L. Ballesteros, *Entre el vapor y el arado romano: élites, instituciones y difusión del cambio técnico en la*

agricultura, Córdoba, 1780–1870 (2004), p. 135.

⁸ E. Justin, *Les sociétés royales d'agriculture, 1757–93* (1935); Müller, *Akademie*.

⁹ Bourde, *Agronomie*, I, p. 366.

system. In mid-century, English agriculture was discovered simultaneously by travellers and through the availability of translations of agricultural books. The Grand Tour journey across the Channel was in great vogue after 1750. One of the first visitors, the Abbé Le Blanc, published his assessment in *Lettres d'un français* (1745):

I am replying speedily to tell you how satisfying you will find it in England: everything conspires to make it as enjoyable as it is productive, and the climate and industrious people ... you only have to open your eyes to be struck by the beauty of the countryside, the care with which it is cultivated, the richness of the grasslands, and numbers of herds and flocks maintained on them, and the sense of plenty and wholesomeness in the smallest villages.

The peasants were better fed than in France: 'the English peasant is rich and has easy access to all the needs of life'. Finally, he did not hold back in his praise for the Royal Society:

It is this Fellowship that has honoured agriculture, its interest, researches and experiments have brought to the English knowledge of the potential wealth the plant kingdom could bring ... we should do justice to so many illustrious scientists who have brought the society into such high esteem across all Europe.¹⁰

After this, enthusiasm for English agricultural techniques grew rapidly. In particular, the 'Norfolk system' attracted attention because it improved wheat yields. Enclosure there had been completed at an early date, and Norfolk benefited from the proximity of the London market. 'Turnip' Townsend's successful integration of root crops into rotations was widely adopted. A journey to England was becoming a compulsory part of the education of the élite, and many accounts of such trips were published. Those of Dangeul and his cousin Veron de Forbonnais made the greatest impact. Dangeul published his *Remarques sur les avantages et désavantages de la France et de la Grande-Bretagne, traduites de l'anglais du chevalier John Nickolls*, in 1754. François Véron de Forbonnais wrote the *Encyclopaedia* article on crop growing in the form of a letter from an English correspondent describing agricultural improvement in Norfolk. This progress was based on a system of large landed estates let out to farmers on leases. It introduced new methods such as marling to improve the soil, and new crops such as turnips, but above all it brought about enclosure and the reduction of communal rights and practices.¹¹

At the same time, a wide range of English agricultural writing was either adapted and used in French publications (for example the articles on 'Enclosure' and 'Ploughs' in the *Encyclopaedia*) or simply translated into French. Tull's *Horse-hoeing husbandry* (1733) contrasted 'old husbandry' with a new more productive system, based on the introduction of new plants, clover, sainfoin and lucerne. Tull criticized the use of dung, and believed that dispensing with fallows and instead fertilizing the soil by continuous ploughing would produce more wheat. These were the two reasons why this work caught the French imagination: it both reasserted the primacy of wheat, and solved the problem of obtaining manure. When Duhamel du Monceau

¹⁰ Cited by Bourde, *Agronomie*, I, pp. 285–6. See also id., *The influence of England on the French agronomes* (1953).

¹¹ cf. Jean-Pierre Jessenne, 'Les études rurales britan-

niques et françaises: histoires comparatives, échelles territoriales et chronologiques', in Nadine Vivier (ed.), *Ruralité française et britannique* (2005), pp. 15–42, which provides text and commentary.

was asked to make a revised translation of the book, he decided to experiment with these principles himself, and the result was his *Traité de la culture des terres* (1750), which further popularized Tull's ideas. Even though they became the subject of a long controversy and were subsequently shown to be completely wrong, they were received by a growing audience in France thanks to the seal of approval given them by du Monceau.

Germany suffered from the same infatuation with things English. English works were translated into German, and German agricultural thinkers took up ideas from them. The analysis of such publications by Hans-Heinrich Müller shows that the diffusion of these ideas began around 1720, but that it was particularly after 1750 that the number of translations rose sharply. While it took twenty years for Tull's work to be translated, Arthur Young's works gained rapid popularity and were translated much more quickly: *A six months tour through the North of England* of 1770 was translated in 1772–5, but *The tour of Ireland* was translated in 1780, its year of publication.¹²

Although texts about Dutch and Flemish agriculture, describing systems based on the importance of grass and fodder crops, were not ignored, they were relegated to a back seat and considered less important. Even so, the French had direct contact with the husbandry of French Flanders and borrowed from it techniques that used manure intensively (eliminating the need for fallows) fed livestock on artificial grasses, but above all, enclosed land and used high labour inputs.

II

This broad-brush general survey pinpoints a specific period when we can talk of an agricultural mania. It involved the existence of a highly active European network, which was thinking about the general organization of agriculture. It advocated the reform of agrarian structures in ways devised by economic theorists as well as agricultural specialists, and the predominant influence over the network was the English model. The need to intensify production, particularly wheat production, led to a belief that the crucial factors were the enclosure of open fields and the cultivation of fallows and wastelands. In the space of a short chapter, it is impossible to deal with every aspect, so here I concentrate on the issue considered central to agricultural modernization, the elimination of common rights. The aim is to show both the universality of the idea in agricultural thinking, and how it was put into practice in each country.

The idea that collective use rights over private property were impediments to the freedom of landowners, a pernicious pillage, and a cause of low farm output, seems to have overtaken the whole of Europe. From Sweden to Spain, from France to Austria, the whole of continental Europe sought to follow the English example. There, enclosure was supposed to have brought about the disappearance of use rights on private land, particularly common grazing.

In Germany, in the mid-eighteenth century, a flourishing agricultural literature encouraged debate on the kinds of technical improvements that should be introduced – the so-called *Hausväterliteratur*. But the one uncontroversial aspect was the cameralist-inspired structural reform that was seen as a precondition of progress, in particular the privatization of common

¹² Müller, *Akademie*, p. 298.

lands. Gottlob von Justi's work of 1761 was iconic.¹³ The idea of dividing common land was greeted by the élite as a reform that would stimulate agricultural improvement. However, contrary to what happened in England, where the timing of enclosure was in the hands of landlords, German thinkers believed that state intervention was needed, because they were convinced of the total ignorance of peasant farmers, and their inability to initiate improvements. The sole contrary view is found in the works of Dr Hirzel of Zurich, who, between 1760 and 1785, introduced the character of a philosopher-peasant, Kleinjogg, who was full of common sense and the capacity to adapt. He was not influential enough, though, to challenge the fundamental feeling that reform had to be imposed from above. The members of the élite who met at agricultural society meetings hoped that enclosure and the division of common lands could take place without any fundamental changes in the working of society, and that they would be the main beneficiaries. Legislative instruments were introduced in most German states, and commissions set up to oversee the implementation of land reform.¹⁴

In Italy, political economists and legal thinkers wrote in support of those agricultural writers who considered common land a constraint on production, on trade, and even a threat to the public peace. The upholders of liberal-physiocratic points of view wanted the abolition of all kinds of collective rights. In Tuscany, the Grand Duke Leopold and his adviser, the physiocrat Neri, decided between 1776 and 1778 that common lands should be sold off and turned into land for rent. The same happened in Lombardy. But, parallel to this thinking, which prioritized the widespread production of wheat, there was an alternative view that attached much greater importance to the social consequences of such changes; the fear that depriving the poor of their usage rights would encourage them to migrate to towns. That was why common land in the Kingdom of Naples was divided up between villages in 1792.¹⁵

Similar movements can be found on the Iberian peninsula. The Royal Academy of Science of Portugal, founded in 1779, made the impediments to property rights, and common rights, part of its agenda for discussion. The physiocrats who undertook the research for the project of dividing up the commons saw peasant discontent as no more than an indication of their backwardness. In Spain, the enlightened monarchy began the process of eliminating community-owned land. In 1769–70 it was decided to divide up the *baldios*, the land that belonged to the village inhabitants. Simultaneously, tax levies were sharply increased on lands traditionally belonging to town and village authorities, the *propios*, in such a way that they were obliged to exploit them economically, or even sell them. The Spanish examples provide a good illustration of how the very different theories of economists and agricultural writers were aligned to support the need to suppress collective rights. The élite adopted liberal agrarian policies. Government ministers took up these ideas to the exclusion of other influences. Campomanes, who was above all a pragmatist, came under the influence of the physiocrat,

¹³ G. von Justi, *Abhandlungen von der Vollkommenheit der Landwirtschaft und der höchsten Cultur des Länder* (1761).

¹⁴ S. Brakensiek, 'Das Feld der Agrarreformen um 1800' in E. J. Engstrom, V. Hess, U. Thoms (Hrsg.), *Figuretionen des Experten. Ambivalenzen der wissenschaftlichen Expertise im ausgehenden 18. und frühen*

19. Jahrhundert (2005), pp. 101–22.

¹⁵ P. Grossi, *Un altro modo di possedere. L'emersione di forme alternative di proprietà alla coscienza giuridica post-unitaria* (1977); B. Sordi, *L'amministrazione illuminata. Riforma delle comunità e progetti di costituzione nella Toscana leopoldina* (1991).

Turgot, and opened up free trade in grain. Other close advisers of Charles III, when he was king of Naples, were more influenced by the German cameralists, while Gaspar Melcher de Jovellanos was closer to Adam Smith's brand of liberalism.¹⁶

This widespread unanimity resulted in laws that suppressed communal property, but did this viewpoint pass unchallenged? The French experience provides a detailed case study.

III

In France, the physiocrats directly influenced plans to reform property rights, but there was little debate on the issue.¹⁷ François Quesnay described the poor state of communal lands, and proposed their division: 'If they were divided, by household, they would be cared for'.¹⁸ Turgot was also concerned about uncultivated waste but took no action while in government even though, a few years earlier, when he was intendant at Limoges, he had worked towards dividing them. All the French economists condemned communal property and wanted it divided up in the name of economic efficiency. Henry Pattullo, Victor Riquetti, Marquis de Mirabeau, and the Abbé Roubaud all foresaw the division of common land followed by enclosure. They feared the break up of holdings into small plots and supported the idea of large estates on English lines even more than Quesnay.¹⁹

Agricultural writers hardly ever disagreed with the political economists when they wrote on this subject, but were simply more specific. They described in full detail the catastrophic state of neglect of such lands, and their low fertility resulting from the lack of care that went with communal use. For them, common rights and common pasture were the key bottleneck preventing agricultural transformation. All the agricultural works published between 1755 and 1770 dwelt on this idea at length.²⁰ In 1766 Marcandier declared 'we should force common land to rise from its obscurity by dividing it between all the individuals resident in the village' and this idea circulated widely.²¹ Then, after 1770, several agricultural works were devoted to common lands, such as those of the Count d'Essuiles, the Viscount de la Maillardière, and Cretté de Palluel. The idea that common rights were harmful was well established and further disseminated by the Abbé Rozier in his *Cours complet d'agriculture ou Dictionnaire universel d'agriculture*, in which he summed matters up in a strident manner: 'Are common lands any use? They were, but are no more. The division of common land alone can bring about not plenty but the well-being of that large body of indigent families'.²² In this way, Rozier was close to

¹⁶ P. Luna, 'Property, dominium, and the Hispanic Enlightenment on both sides of the Atlantic in the second half of the eighteenth century', in G. Béaur, P. Schofield, J.-M. Chevet and M.-T. Perez-Picazo, *Property rights, land market and economic change in Europe* (forthcoming).

¹⁷ N. Vivier, *Propriété collective et identité communale. Les biens communaux en France, 1750–1914* (1998); G. Weulersse, *Le mouvement physiocratique en France* (1910).

¹⁸ F. Quesnay, *Essai sur l'administration des terres* (1759), p. 200.

¹⁹ H. Pattullo, *Essai sur l'amélioration des terres* (1758); V. Riquetti, marquis de Mirabeau, *L'ami des hommes* (1760), part V; the Abbé Roubaud published in the journal of the physiocrats: *Les éphémérides*.

²⁰ Quesnay, *Essai sur l'administration*; marquis de Turbilly, *Mémoire sur les défrichements* (1760); H. L. Duhamel du Monceau, *Eléments d'agriculture* (2 vols, 1762).

²¹ Article published in *Journal de l'agriculture, du commerce et des finances* (1766).

²² J.-F. Rozier, *Cours complet d'agriculture* (12 vols, 1781–1800), III (1783), pp. 443–52.

adopting the method of dividing commons advocated by the intendant of Caen, François-Jean Orceau de Fontette, and the permanent secretary of the Academy of Caen, Arthur-Richard Rouxelin, who believed they 'could engender a love of work in people's hearts' by giving the poor a small plot of land. These examples show unanimity on the necessity of breaking up new land to grow wheat and, equally, the different ways in which agricultural writers proposed to bring about these important structural reforms: but should the beneficiaries be the great landowners or poor families?

This question was the subject of lively controversy in three specific arenas: the competitions run by agricultural societies, government enquiries, and the Comte d'Essuiles's propositions.

The new agricultural societies identified 'the abuse of common pastures and the usefulness of breaking them up' as a major research topic. They pursued the topic beyond its economic implications, and asked questions about the social consequences of such changes. The question of rural poverty became the subject of an essay prize competition for the societies at Caen and Orléans in 1763, and again at Châlons-sur-Marne in 1777: 'the means of destroying begging in France and making beggars useful to the state without making them unhappy'. The Abbé Malvaux published a summary of the 118 essays submitted and concluded that common lands should be divided between the landowners, dispossessing the poor with the aim of making them work on large farms.²³ His main preoccupations were to increase the wealth of France, increase the population, and feed it adequately.

When Bertin was chief minister he became interested in the same problem, and launched an enquiry to find out about practice abroad, particularly in the German principalities such as Bavaria, and in Great Britain. He received a very detailed memorandum from the French ambassador in London, the Chevalier d'Eon in March 1763. It gave a well-balanced overview of the state of agriculture, setting out the ongoing debates in England.²⁴

Enclosure added value to land:

What to the English is an overriding advantage from the consolidation the land, is that each individual has the freedom to follow whatever pattern of cultivation the owner wants without being obliged to follow cropping patterns in the way they are forced to in France, and in the un-enclosed parts of England. A holding which is hedged about is worth twice what an open field estate of the same size and quality would fetch for that reason alone.

But Bertin could also see the negative aspects of enclosure. Often, enclosed lands were put down to pasture so employed few labourers and the poor were injured by the disappearance of the commons:

The right of common existing in most English parishes in a fair world assured the poor of rights and an inalienable interest in their community. In dividing up the commons, the fraction given to the poor could never compensate for the advantages they gained from their rights over the whole common.

So, 'what in England is called improvement, would, in another age be described as depopulation'.

²³ Abbé Malvaux, *Les moyens de détruire la mendicité* (1780).

²⁴ Paris, Archives nationales H 1495.

One may conclude from this analysis that enclosure should only be undertaken after much thought and that in no way should it make possible the destructive monopoly of large farms, even though in France our commons are neither universal, nor as large as in England. Although we look at our commons in a different light, it would be very imprudent to divide them up and allow the poor the right to sell their allotments. Any wise government would seek to gain the loyalty of its poorest subjects by ensuring their inalienable property rights. If needs be the state should devise new forms of property holding, for the strength of a country depends less on the number of individuals than on the number of those with reason to defend it.

The government was well aware of these difficulties. One of the agricultural advisers to the ministry, the Count d'Essuiles, proposed a solution in his treatise on the subject that summed up the compromise adopted by the French crown. It discussed a division of communally owned lands. A life interest in a plot of land was assigned to each resident household in the village provided they bring it into cultivation, preferably with grain crops. And so that the reform could be acceptable to all, it had to be seen not as a revolution. The seigneurial lords had to have their own slice: they would receive up to one third of communal lands. In France, as in Germany, the ruling élite wanted structural land reform that would not change the existing social structure. But for the small occupiers, the suppression of their common rights seemed a profound change. Marc Bloch has written of 'agrarian individualism', but the protagonists at the time probably preferred to describe it as 'liberty': a liberty for the landowner to enclose and to farm as they wanted to.

These ideas spread at a striking pace. The negative influence of common rights, the need to fence in private land, and to privatize and bring into cultivation open field lands following the English examples, particularly the Norfolk system, were general principles rapidly accepted across the whole of western Europe between 1750 and 1770. There were arguments about the precise way in which common lands and rights should be eliminated, but the general principle remained inviolate.

This pan-European agreement is all the more surprising in that it was applied to very different local circumstances, both in terms of social conditions – different property structures and population densities – and different climatic and soil conditions. The Spanish crown even exported the idea to its American colonies, so that the bishop of Michoacan in Mexico made proposals for a thoroughgoing reform of agrarian structures there.²⁵

IV

From 1750 to 1770, experiments to introduce new crop rotations and bring waste lands into cultivation multiplied, carried forward by the conviction – which had reached euphoric levels – that science would revive agriculture. This frenzy died away in the 1770s, before picking up again, though in rather more measured ways, between 1780 and 1790.

²⁵ R. M. Martínez de Codes, 'Les propriétés collectives au Mexique', in M.-D. Demélas et N. Vivier (eds), *Les propriétés collectives face aux attaques libérales en Europe occidentale et en Amérique latine, 1750–1914* (2003), pp. 229–248.

Many attempts to put the new theories into practice received setbacks. By the late 1770s or at the latest, the 1780s, the effects of some reforms were proving to be much more limited than their advocates claimed and, in some cases, had plainly failed. In the case of ploughing waste lands, the work done by the Marquis of Turbilly on his Anjou estates and promoted in his *Mémoire*, was given a fairly negative report by Arthur Young, damning because of the size of Young's audience and the weight his opinions carried. The underpinning theories also lost support. Physiocratic ideas were criticized and those of Adam Smith began to exert the greater influence. Smith's theories gave agriculture a place in the economic order as a source of wealth, but without special pre-eminence amongst other forms of human work.

Wherever they were tried, structural reforms turned out to be very expensive to implement. Enclosure and the division of common lands required high levels of investment, for legal costs, the construction of fences, and the alteration of rotations. Reform also carried significant moral and social costs, as the break-up of traditional social and agrarian systems sparked conflict between winners and losers. So, in France, at the beginning of the Revolution, numerous social groups dreamed of dividing up communal lands but, once the process was agreed, those who felt aggrieved by the division, opposed it. Some small regions of Germany, Italy, and Spain, as well as France, carried through reforms: they had symbolic importance, but relatively limited impact. From 1800 onwards the idea that communal lands poisoned the agrarian system was universally accepted, and legal writers described collective property as a monstrosity, or as the Spanish called it 'imperfect property'. But prudence dictated that local initiatives would be more effective than a frontal assault. In France, the departmental prefects were ordered to put pressure on town and village assemblies to lease out their communal lands for an economic return. Prussia established general commissions in each county to complete agrarian reforms, which had to take into account their knowledge of local conditions.²⁶

V

Revolutionary turmoil broke up the networks based on agricultural societies both in France and in countries affected by the wars. The Revolutionary government ordered the French societies to close in 1793, but the leading members continued their activities and maintained their contacts with agriculturalists abroad. After François de Neufchâteau became minister in 1799, agricultural societies were encouraged once again. The international network was reorganized and became more widespread during the first half of the nineteenth century.

However, the objectives of agricultural improvement that the revived network envisaged were no longer those of the pre-Revolutionary network. Whereas in 1750 the aim had been to maximize the area of land under cultivation, it was soon understood that it would be better to concentrate on improving the more productive land, than to plough up too much waste land. In the section on 'Clearing new ground' in his *Cours d'agriculture* of 1785, the Abbé Rozier wrote 'we are ploughing up too much ... We need to plough less and grow crops better'. Little by little people began to realize that a cereal régime was not necessary the best use of land,

²⁶ Demélas and Vivier (eds), *Propriétés collectives*, see particularly contributions by S. Brakensiek, N. Vivier and M. T. Perez Picazo.

particularly in the Mediterranean region. Greater attention was paid to other crops: forage crops, potatoes, and others. Italian agricultural methods began to gain attention, especially after the publication of *Tableau de l'agriculture toscane* by Sismondi in 1801, and the *Letters of Lullin de Chateauvieux* in 1812. Agricultural thinkers concentrated more on specialized crops in Italy, such as silk and olive oil, and on their potential for innovation, somewhat diminishing the dominance of the English model.²⁷ Greater attention was paid to forest conservation and management, taking as a starting point Duhamel de Monceau's thoughts on the subject in the 1750s.²⁸ It came to the fore in the 1820s when the French turned to German forestry for a model. The English example remained a very important source of inspiration, but it was no longer the only one.

Moreover, after 1790, a period that had been characterized by the application of theoretical solutions was replaced by one of practical experiment. Agricultural thinkers continued their debates but came to no fixed conclusions on the question of the reform of agrarian structures, and their solutions were no longer taken up wholesale. They needed to support their theories with successful examples that could be replicated elsewhere. The next generation of agricultural scientists published the results of long-term experiments.²⁹ They moved away from an interest in changing agrarian structures, and dedicated themselves to improving tools, manures, and soil fertility. The questions set for agricultural society competitions no longer addressed great theoretical issues but practical problems. For example, during Napoleon's reign, the Paris agricultural society offered a prize for the best plough. This shifting focus did not reduce the international nature of agricultural networks: that particular competition brought an entry from Thomas Jefferson, then president of the United States.³⁰

The new generation of agricultural scientists who came to prominence in the first half of the nineteenth century were different in that they were a larger and more professional group. It included men such as Lavoisier, Thaer, and Boussingault who used experiments in physics and chemistry to address production problems on the farm, and others such as Mathieu de Dombasle, who improved tools. These men became professionals and specialists in new agricultural areas such as pedology and zoological ecology.³¹ They developed an enormous network of international exchanges and their discoveries were diffused through numerous publishing outlets.³² One of the great discussion points in the first half of the century related to the nourishment of plants and where they derived it from. The theory of humus was much discussed, and the hypothesis presented by the Swede, Wallerius, in 1761 that plants receive nourishment entirely from humus (the product of plant decomposition), later developed by Thaer in Germany in 1809, and by Davy in England in 1813, was disproved in 1826 by Theodore de Saussure, Carl Sprengler, and several others. But it remained current until, in 1840, Justus von Liebig showed that plants could be directly fed mineral salts, chemical compounds derived

²⁷ G. Postel-Vinay and M. Aymard, 'La perception de l'agriculture et de l'agronomie italiennes dans la première moitié du XIX^e siècle' in R. Finzi, *Fra studio, politica ed economica: la società agraria dalle origini all'età giolittiana* (1992).

²⁸ H. L. Duhamel du Monceau, *De l'exploitation des bois* (1764).

²⁹ This began with Rozier, *Cours complet*.

³⁰ J. Boulaine, *Histoire de l'agronomie en France* (1996), p. 240.

³¹ Pedology is the overarching study of soil types and formation, including branches such as soil chemistry and soil physics.

from mining operations with no organic origins. The English adopted this finding very quickly, but the French, particularly Jean-Baptiste Dumas and Boussingault argued about it for years.³³

This generation of agriculturalists extended their range as well. Landowners experimented on their estates and home farms. They followed in the footsteps of English landlords and French seigneurs of the late eighteenth century such as the Duke of Béthune-Charost (1738–1800), Lavoisier (1743–94) and the Duke of Rochefoucault-Liancourt (1747–1827). Their activities were acknowledged at the time despite the many setbacks suffered by lesser landowners, and they were highlighted even more by the agrarian writers of the late nineteenth century and, later, by those historians who re-examined their writings.

On the fringes of this scientific movement we should perhaps add two groups. Firstly there was the expanding number of farmers who used a reflective approach to their own production methods to improve them. We could also postulate the considerable influence exerted by agricultural educators in the German universities, the practical school at Cordova in Spain, and on French farm schools. Perhaps we should also add the many published technical reviews, the almanacs full of farming advice, or the stimulus to experiment instilled by the agricultural prize competitions offered from the 1840s onwards. From these practical experiments came incremental changes adopted by farmers without any publicity.³⁴

VI

There was a very active network of agriculturalists who intensively exchanged ideas right across Europe. Two periods can clearly be distinguished. The period between 1750 and 1780 was a heady one for agricultural scientists, with rapid progress simultaneously in scientific agriculture and in agrarian reform. The English model of enclosure and arable rotations was paramount in their thinking. Their realization that reform did not invariably deliver the expected benefits in increased productivity engendered a more sober approach. After the revolutionary turmoil was over, agriculturalists became pragmatic again. They became more pragmatic in the paradigms they adopted. They abandoned their theoretical approaches and projects of structural reform and returned to a role of scientific research and experimentation. But even after the relative failure of the first generation of reform, they retained their faith in the possibility of decisive progress in the field. These long-term trends seem to be found in every European country, but this general outline, based essentially on the French experience, may perhaps be the starting point for more detailed future research.

³² For example, A. E. Gasparin, *Cours d'agriculture* (1846).

³³ M. Blondel-Mégrelis and P. Robin, '1800 et 1840, physiologie végétale et chimie agricole. Liebig, une fondation à questionner', in A. Belmont (ed.), *Autour d'Olivier de Serres. Pratiques agricoles et pensée agronomique du Néolithique aux enjeux actuels* (2002), pp. 275–294.

³⁴ A. Paillet, 'Une "pratique de l'agronomie": expérimentations et innovations agricoles dans le Centre de la France au XIX^e siècle', in Belmont, *Olivier de Serres*, pp. 145–172; N. Vivier, 'Les élites dans les communes rurales de la Sarthe au XIX^e siècle', in F. Pitou (ed.), *Elites et notables de l'Ouest, XVI–XX^e siècle. Entre conservatisme et modernité* (2003), pp. 45–57.

Redefining the tillers of the soil:
English farmers, French and British peasants

Reconsidering a rural myth: peasant France and capitalist Britain^{*}

by Jean-Michel Chevet

According to traditional historiography, which itself largely reflects the views of economic observers at the time, Britain and France travelled by separate paths to economic development in the eighteenth and nineteenth centuries. As a result of enclosure, Britain took the capitalist path, with large farms, while France remained a land of small peasant farms. The physiocrats, envious of English commercial success, portrayed large-scale English farming as part of a causal chain leading to this success. This 'Radiant Future' was to be set out in the works of Arthur Young, Jean Michelet, Karl Marx (in his celebrated chapter on primitive accumulation in *Das Kapital*), Karl Kautsky, and Lenin. The list of those who have adopted the idea of English and French separateness seems endless.

More recently, these contrasting models of economic development have reappeared in different historical contexts. We need only offer a couple of examples. Let us begin with Gordon Mingay, who clearly expressed the role of enclosure as a cause of the expropriation of the peasantry and thus as a driving force in industrialization. He wrote,

Traditionally, the context for enclosure has always been linked to the expropriation of the peasantry. Following Marx, historians on the left considered that enclosure provoked the disappearance of the small owner-occupier and forced peasant farmers to leave their land, thus contributing to the provision of a workforce for expanding industry.¹

On the French side, D. Faucher wrote,

All who have studied French agriculture have been struck by the predominance of small and medium-sized farms. There is no doubt one could find such relatively small holdings, usually commensurate with the available family labour, in other parts of western Europe.

^{*} I would like to thank the organizers of the Canterbury conference for their invitation to talk on this subject, which I have been working on for ten years or more. I would also like to thank John Broad for his constructive suggestions and his translation. The author's research funding reference is INRA, UMR ADES 5185.

¹ G. Mingay, 'Histoire rurale de la Grande-Bretagne', in M. Bodiguel and P. Lowe (eds), *Campagne française, campagnes britannique* (1989), p. 64.

But in neither Italy, nor Spain, nor Germany, and certainly not in England, can one find such a high percentage of farms of such small size.²

Thus Faucher – and many others – basing their observations only on the large number of small and medium-sized holdings, postulate that French agriculture was, at heart, dependent on family labour, thus labelling the agricultural sphere as ‘a world of the peasant farmer’.

In his *Conférences sur l'Angleterre* of 1942, Marc Bloch further developed this perception of the history of our two countries. So, in his view, the dispossession of the English peasantry was indeed a result of enclosures, while the absence of enclosures in France helped sustain the peasantry. To explain these different paths, Bloch provided an analysis in which the state played a key role. In England, royal justice was never able to effectively oppose manorial jurisdiction and thereby provide a buffer between tenant and manorial lord, as happened in France from the thirteenth century onwards. As a result, English manorial lords were able to increase their feudal powers, whereas in France, the hereditary succession of tenancies was defended by the royal courts. Even worse, from the sixteenth century onwards, under manorial law, the central English courts reinforced the landowner's expropriation of peasant land. No doubt the Marxist concept of the state as superstructure played a strong part in this. At the same time, we see economic determinism turned upside down by political determinism and the overthrow of jurisprudence, since for Bloch, the survival of the French peasantry certainly derived from the regulatory role of the national state, making it an the essential role of the centralized state to put itself on the side of the ‘little man’. There is not enough space here to assess how far Bloch's theories really mean this or to provide a critique of them, but Bloch was probably falling back on his personal philosophy of history rather than providing a plausible explanation of the differences between England and France. Perhaps he had taken insufficient account of the similarities in the histories of the two countries, and did not find the time to differentiate those elements relevant to the economic sphere. He provided statistics to show that ‘persons employed in agriculture’ represented 5.3 per cent of the total population of England and Wales in 1934, as opposed to 35.5 per cent in France, and that the ‘ratio of large farms to the total number of farms’ was 15 per cent in England, for farms above 60 hectares (150 acres); while, in France, the figure was 3.5 per cent, based on farms over 50 hectares (125 acres) around 1930. In this chapter I intend to demonstrate that these figures are an illusion.³

I will first consider whether, leaving aside economic determinism, this vision of a ‘peasant democracy’, is not simply the continuation of an ideology peddled since the Enlightenment, one of whose functions was to feed into theories about the causes and results of the French Revolution, and create French national identity in a political democracy rooted in the peasantry. This seemed to be Jules Michelet's view when he wrote:

The land of France belongs to fifteen to twenty million peasants who farm it; the land of England has an aristocracy of 32,000 people who have others do their cultivation for them. The English people do not have the same roots in the soil, choose either to emigrate, or to farm it for profit. They say ‘the country’; we say ‘*la patrie*’. Here at home, man and soil are

² D. Faucher, *L'homme et la machine* (1954), p. 221. M. Bloch, *L'Histoire, la Guerre, la Résistance* (Paris,

³ M. Bloch, ‘Conférences sur l'Angleterre’, in 2006), p. 731.

bound together and will not be separated; theirs is a solemnized marriage for life unto death. The Frenchman has married the land of France. France is a land of equity. In unclear cases, she has usually found in favour of those who work the land. England, on the other hand, has delivered judgement in favour of the manorial lord, and driven out the peasant. Only day labourers work the land now ... randomly pluck from this crowd a day labourer who owns a tiny plot (a twentieth of an arpent), then you won't ever find the feelings of a hired labourer; he is a landowner, a soldier (he has been a soldier, he may be one again tomorrow); his father fought in Napoleon's Grand Army.⁴

For many historians, the perceived French backwardness, demonstrated by the slow growth of agricultural and industrial production in France, and also of labour productivity, was largely explained by the existence of this peasantry. For Rondo Cameron, for example, it lay in the large number of small farms, which limited the significance of 'viable economic units'. This thesis raises the problem of economies of scale in agriculture, an idea often put forward, but never effectively proved. G. Desert modified the idea: he acknowledged the basic argument, but argued that it alone could not account for the French backwardness. He added the low levels of population shifting out of agriculture and linked this to the idea of the expropriation of the peasantry. Falling labour supply would render mechanization necessary but because labour supply did not decline, mechanization did not happen and so labour productivity did not improve in France. This might be a good hypothesis but it rests on the false assumption that farm mechanization was adopted much more quickly in England than in France.⁵

This approach to the interpretation of the history of our two countries has also been adopted by English historians. For J. Morley, 'the history of France from Louis XV's time to the Second World War can be expressed as a delayed and slow evolution compared with that in Great Britain. In contrast, the British experience is depicted as a history of success'.⁶ The vision of divergent development in our two countries has also had damaging political effects, perhaps providing advice to government based on misleading ideas of economic growth. It is apparent in statements by prominent political advisers today in France, for instance in the emphasis on protectionism by M. Tracy and Cl. Servolin.⁷ Very recently J.-L. Mayaud, a popular essayist, wrote a book on the subject.⁸ This just shows how old notions die hard.

Against this general consensus, only a few writers have expressed doubts about the reality of the two contrasting paths to agricultural development.⁹ Comparative studies of French and English agriculture are so rare that one wonders whether the consensus is not just the repetition of the myth. That myth was put in place in the wake of physiocratic writing and

⁴ J. Michelet, *Le peuple* (1974), pp. 80–5. For a critique of this idea see J.-M. Chevet, 'Le Marquisat d'Ormesson. Essai d'analyse économique' (unpublished third cycle thesis, EHESS, Paris, 1984), pp. 406–66.

⁵ G. Désert, in *Histoire de la France rurale* (3 vols, 1976), 3, pp. 464–7.

⁶ P. K. O'Brien and C. Keyder, 'Les voies de passage vers la société industrielle en Grande-Bretagne et en France, 1780–1914', *Annales ESC* 6 (1979), p. 1284.

⁷ M. Tracy, *L'état et l'agriculture en Europe*

occidentale. Crises et réponses au cours d'un siècle (1986); C. Servolin, *L'agriculture moderne* (1989); H. Mendras, *La fin des paysans* (1970).

⁸ J.-L. Mayaud, *La petite exploitation rurale triomphante* (1999).

⁹ I am thinking particularly of Jean Meuvret whose works include numerous statements critical of this interpretation, but also of L. de Lavergne, who noted the overstatement and P. Flavigny whose *Le régime agraire en Angleterre au XIX siècle* (1933) is too little known.

is dominated by the distortions of nationalism and national identity. The myth has retained its potency because it is repeated without ever returning to the sources, or undertaking new research. It has simply supplied recycled apologetics.

This chapter re-opens the subject by examining the statistics produced at the time, and critiquing and correcting them in the light of their deficiencies. It will concentrate on the late nineteenth century, beginning with a comparison of a breakdown of farm sizes in Britain and France from a national perspective.¹⁰ The study of farm size will be undertaken by defining the thresholds which separated the world of agricultural workers or, if you prefer, the agricultural proletariat, from that of employers, farmers and entrepreneurs. Further analysis of the level of agricultural employment will also take account of the relative population density of the two countries. Putting French and British statistics head-to-head suggests that we need to question the notion of two very different paths to development, showing that the supposed differences between agriculture in France and Britain are more a matter of nuance and degree than a fundamental difference.

I

The usual explanation for France's economic retardation compared to that of Great Britain pinpoints the structure of landownership, and particularly the structure of farms, which concentrated agricultural land to a much greater extent in Great Britain than France. At the end of a very long process, and in contrast to Britain, France was characterized by a large number of small and medium sized farms.¹¹ Before testing this assertion and making a true measure of Anglo-French differences, we need to compare the structure of farming in the two countries. Because of numerous differences in the available statistical record this comparison is not easy before the end of the nineteenth century.

Returns from Great Britain give 520,000 farms in 1895 compared with 5.7 million farms in France.¹² In the light of these figures, France appears as a land of small farms, with eleven times as many holdings as in Britain. This difference can be put into perspective, firstly by the fact that the land area of France is 2.6 times greater than Great Britain's. Given the same agricultural area, Great Britain would have had 1.36 million farms, and France only 4.2 times as many.

Before analysing these farms by size, we need to consider some of the statistical difficulties which must be taken into account when comparing Great Britain and France. A first difficulty is that the categorization of types of farmland differs between the two countries. British statistics take into account only arable and grassland, whereas in France vineyards, market gardens and woods are accounted for, a difference that leads to an overestimate of the numbers and importance of small farms in France.¹³ British statistics only include 'true' farms, whereas

¹⁰ Although the debate has previously been expressed in terms of England and France, the data used in this statistical study necessarily covers Great Britain rather than England.

¹¹ Bloch, 'Conférences sur l'Angleterre'.

¹² This study compares BPP, 1895, LXVII, Agricultural

Holdings with Ministère de l'Agriculture, Direction de l'Agriculture, *Statistique agricole de la France. Résultats généraux de l'enquête décennales de 1892* (1897).

¹³ In certain parts of the country, for example mountain areas, the inclusion of woodland areas in farm sizes leads to an overestimate of farm sizes.

in France every tiniest plot and garden, urban or rural, was included and given the status of a farm. In Great Britain, it was the practice to only count farms of more than one acre (0.4 hectares) whereas in France those smaller than 0.4 hectares (one acre) were included and naturally there were more of them. Finally, allotments in Britain did not have the status of farms whereas their French equivalents were included.¹⁴

To demonstrate that these figures overestimate the number of farms in France, we first assume that farmers' families contained on average 4 to 4.5 persons. Using the figure of four, we find a population of 22.8 million peasants, so that farming families formed 59 per cent of the total population in 1892. If instead we use 4.5, we get a figure of 25.7 million, or 67 per cent of the total population. To these figures we also need to add agricultural workers who had no garden or plot of land. If we compare these figures with the 44 per cent of the population employed in agriculture who are found in the census in the same period, we have to reckon that these two estimates are undoubtedly much too high. It must be that a large number of the 5.7 million farms should not be considered part of the agricultural economy.¹⁵ An equivalent process for Great Britain suggests the population engaged in agriculture was between 20.0 and 22.3 per cent of the total population, well above the figure of 10.5 per cent given in the 1891 census. This is even more surprising because British censuses did not take into account all holdings, as we shall see.¹⁶

To put the British figures on a basis that allows a somewhat fairer comparison between the two countries, we must add allotments, field gardens, cow runs, railway workers' plots, and cottage gardens. These varied agricultural holdings mainly involved plots of less than 0.4 hectares (one acre) although some were as large as 1.6 hectares (four acres). As there is no figure for the total area of such holdings, we have boldly estimated it. Looking at the national figures, we find 1.3 million agricultural holdings in Great Britain, which when corrected to provide an equivalent area to that in France for comparative purposes, rises to 3.6 million. After this reworking, France appears to have no more than 60 per cent more holdings than Great Britain. As for average holding size, it is six hectares (15 acres) for France, as against 10 hectares (25 acres) in Britain.¹⁷

At this level of analysis, although there are plainly differences in the number of agricultural holdings in Great Britain and France, it is clear that they are not so large as to provide a basis for a model of two roads to rural development, one peasant, one capitalist. This is all the more true because holdings were not equally distributed in each country. We now need to consider this problem.

II

We have said that Michelet's vision of the French people was essentially political, and he saw the peasant as having at the very least, a patch of land or a garden. To make this myth of the

¹⁴ Flavigny, *Régime agraire*, p. 45.

¹⁵ A regional study would be needed to refine the evidence for this.

¹⁶ See Table 3.5.

¹⁷ BPP, 1890, LVII, Allotments and Small Holdings; BPP, 1895, XCII, Agricultural returns for Great Britain.

French peasantry a viable one, he needed at all costs to gloss over any social divisions in the countryside. This line has been taken up by a school of historiography which followed Michelet and which is best described as populist, although it is not without internal contradictions.¹⁸ So, when we try to re-evaluate the contrasts between a Britain under the thumb of capitalist farmers and a France forever peasant, we challenge one of the founding myths of French nationhood, one which retains its power at a time when nationalistic tendencies are reviving across Europe.

I propose that, instead of taking an economic view of capitalist and peasant farming, we define the fundamental differences in the structure of farming in the two countries. Capitalist agriculture is loosely defined by the existence of two classes, the farmers controlling the means of production while the agricultural labour force has only the strength of numbers. The idea of the peasant in this context is difficult to discern because of its varied meanings. Michelet defined the peasant by his ownership of land, whether it amounted to a pocket handkerchief-sized plot or 100 hectares (250 acres), with no distinction based on farm size. His peasant was a worker on the land, owner of his means of production, a man who lived relatively independently, with little recourse to the market.

However, the economic profiles of farms differ, and not solely because of their sizes. We need to define the contours of different rural social groups by using various farm-size thresholds to distinguish them. In terms of yields, about two hectares (5 acres) was the minimum farm size that could produce enough wheat to feed the family. To be completely independent – defined as members of the household being able to get a living without going to work on another farm or taking up another type of work – the minimum farm size was 10 hectares (25 acres).¹⁹ In the context of this study these two thresholds could vary in different periods and in different climatic and geological conditions.²⁰ This simple idea of the peasant also becomes problematic when it takes account of regional specialization. In wine-growing regions, such as Bordeaux and Burgundy, some very small holdings turned to vine growing as their main activity and, because of this, needed to involve themselves in the market to make such a small area support a family. A similar situation may apply in stock-rearing areas.

The use of the thresholds defined above enables us to construct a picture that illustrates the extent to which France was truly a peasant country compared with Great Britain. It has been impossible to divide farms in the two countries into precisely equivalent categories, as the statistics in France cover holdings between one and ten hectares (2.5 and 25 acres), while the equivalent band in Great Britain is two to eight hectares (5 to 20 acres). But this mismatch in categories does not prevent us from reaching conclusions from the analysis (Table 3.1).

A detailed analysis of small agricultural holdings, those under 2 hectares (5 acres) in Great

¹⁸ For a questioning of this so-called peasant France, see R. Hubscher and J.-C. Farcy (eds), *La moisson des autres* (1996), pp. 6–7.

¹⁹ For the definition of such a threshold for the Paris region see Chevet, 'Le Marquisat d'Ormesson', pp. 406–23.

²⁰ In Brittany, for example, at the end of the nineteenth century, farms of nine hectares (22.5 acres)

needed two full-time farm servants in addition to the farmer. This significantly increased the number of independent farmers, and helped squeeze the peasantry. The threshold defining the peasantry is lower than in the arable areas. Significant demand for labour arises from the cultivation of the furze that had to be crushed and given to the cattle.

TABLE 3.1. Farm sizes in Great Britain and France at the end of the nineteenth century (in hectares).

	France					Great Britain			
	Number	%	Hectares	%		Number	%	Hectares	%
Less than 1	2,235,405	39.20	1,143,300	3.29	Less than 2	976,838	71.12	232,570	1.77
1 to 10	2,617,558	45.90	9,375,100	27.00	2 to 8	148,806	10.83	667,060	5.09
10 to 40	711,118	12.47	11,349,200	32.69	8 to 40	148,864	10.84	3,100,070	23.63
40 +	138,671	2.43	12,852,600	37.02	40 +	98,937	7.20	9,117,160	69.51
Total	5,702,752	100	34,720,200	100		1,373,445	100	13,116,860	100

Source: BPP, 1895, LXVII, Return of Agricultural Holdings; returns of the number of Allotments; Ministère de l'Agriculture, Direction de l'Agriculture, *Statistique agricole de la France. Résultats généraux de l'enquête décennales de 1892* (1897).

Britain, and under 1 hectare (2.5 acres) in France, shows that they were more numerous in Great Britain, where they represented 71 per cent of all holdings, than in France, where they only represented 39 per cent. Using a common threshold of one hectare (2.5 acres) in both countries would make little difference, for 61 per cent of British holdings were of less than this size. The average size of these was 0.55 hectares (1.375 acres) in France, and 0.24 hectares (0.6 acres) in Great Britain. Nationally, the share of land cultivated by this group in the two countries is very small, amounting to 2.39 per cent, and 1.77 per cent. Furthermore, our calculations undoubtedly tend to underestimate the number of holdings of this size in Great Britain.

Analysis of slightly larger holdings shows the position reversed, with a mean holding size of 4.48 hectares (11.2 acres) in Britain by 11 per cent of farmers, while 45.9 per cent of farmers in France held an average of 3.64 hectares (9.1 acres). It emerges from this that the proportion of the land area cultivated by this group in France (27.1 per cent) is more important than the five per cent in Great Britain. A regional breakdown allows us to take into account the smallholdings in winegrowing regions, where there is a significant difference between France and Great Britain. Nevertheless we need to set in context the importance of this group, particularly for France. On the French side it is possible to split this group into two. So 32 per cent of the whole, that is 69.5 per cent of holdings from one to ten hectares (2.5–25 acres), are between one and five hectares (2.5–12.5 acres) and 11.2 per cent of the land surface, that is 49.3 per cent of the group as a whole. Only 13.82 per cent of the farms belong to the group size from five to ten acres (12.5–25 acres), that is to say 30.1 per cent of the larger group of one to ten hectares holdings, and they held 11.66 per cent of the land area, or 50.7 per cent of the land of the larger group. The mean holding size for each group is 2.53 hectares (6.325 acres) and 6.03 hectares (15.075 acres) respectively.

Let us assume now, for convenience, that British holdings of less than 8 hectares (20 acres) are those worked by wage earners and agricultural workers, the rural proletariat described by Marx. We should note that this group undoubtedly included a large number of specialist small farms, whose numbers are difficult to pinpoint, and which lay outside this category, or at least partly so. We also need to take account of the plots of land and gardens that were cultivated by non-agricultural workers. Even allowing a considerable margin of error, around 82 per cent

of all British holdings were small plots held by agricultural workers, a fact that is unsurprising in a country whose agriculture is acknowledged to be dominated by large farms. How does this affect our understanding of 'peasant France'? There, 71.3 per cent of farmers held less than 5 hectares (12.5 acres), a figure that would be comparable to the British one if we could eliminate holdings of five to eight hectares (12.5 to 20 acres) there. Let us make a rough estimate that half the smallholders with holdings of five to ten hectares (12.5 to 20 acres) form this group, a figure probably greater than in reality, since the mean size of holdings in this category is 6.0 hectares. Using this figure, then the total figure is transformed to 78.2 per cent. From that we conclude that the number of agricultural workers (part- or full-time) who held land was about the same on both sides of the channel. 'Peasant France' turns out to be a myth.

An immediate objection to this line of argument is that the proportion of the cultivated land in the country worked by these agricultural workers is more significant in France than in Britain, and that each smallholder had a higher mean area of land. But let us recap the figures: in France, smallholders with between one and five hectares (2.5–12.5 acres) of land, held a mean figure of 2.5 acres as against 1.2 hectares in Great Britain, that is to say about double. Can we deduce from this that such smallholders were more independent in France than Britain? Were they less dependent on paid work in France than Britain?

These questions only make sense within the framework of the peasant ideology, one that peasants themselves did not live by, since they needed to make money from every possible source to scratch a living. These figures show that the differences on each side of the channel were only a matter of degree and not of principle, and that all families in this category needed other sources of work to survive. At the end of the seventeenth century, Vauban remarked that farm workers worked their small plots in the evening, or that their wives and children worked them when they were capable of it and the man was working at a distance.²¹ French smallholders did perhaps have some advantage, since with the same wage income they had alternative income potential that was significantly greater than that available to British agricultural labourers. Furthermore, ownership of a small plot of land was considered by many contemporary observers a brake on urban migration. Was this not the reason why British farmers provided their labourers with a plot on which to grow potatoes?

At this point, we can see that the differences between the two countries are tenuous, and certainly not sufficient to continue with the polarities of capitalist Britain and peasant France. As for those smallholders with between five hectares (12.5 acres) and ten hectares (25 acres), who may have been closer to economic independence than those in the previous group, there is good evidence that they too took on additional employment to provide for their families' needs, and they needed help from neighbours, or hired workers at harvest time, particularly for intensive crops such as vines.

Let us now turn to holdings larger than ten hectares (25 acres), where the farmer used one or more plough teams, and employed wage labour as and when needed. This category represented 14.9 per cent of farms in France, and 18.04 per cent in Britain, that is to say three per cent more. In France such holdings took up 70 per cent of the cultivated area, compared with 93 per cent in Britain, so the 23 per cent great figure in Britain is considerably larger.

²¹ Chevet, 'Le Marquisat d'Ormesson', p. 460.

Nevertheless, the difference would undoubtedly narrow if the same threshold figure was used on both sides of the channel, and if the amount of land cultivated in tiny holdings in Britain was not an underestimate. If we subdivide the category, we see that holdings of ten to forty hectares (25 to 100 acres) in France represented 12.47 per cent of all farms, and 32.7 per cent of the land area; in Britain holdings of eight to forty hectares (20 to 100 acres) made up 10.84 per cent of the number of holdings, and 22.63 per cent of the land area. The mean holding sizes were 16 hectares (40 acres) and 20.8 hectares (52 acres) respectively. Usually those who farmed this category of farm had their own plough team and worked the land themselves. But it was not a homogenous group. The largest farms in this group used farm labourers all the time and were more independent, while the smaller farmers looked to earn income from other activities, for instance ploughing land for those without their own teams. It was this group of farms, together with those towards the upper limit of the five to ten hectare (12.5 to 25 acres) group that warrant the title 'family holdings'.²² The above analysis shows that family holdings are only a little more important, certainly no more than two or three per cent, in France than in Great Britain. True, French farms in this category did amount to rather more than eight per cent more of the cultivable land area. But this difference was not great enough, however you look at it, to turn France into a paradise for family farmers, any more than it turned Britain into a hellish world of agrarian capitalism.

The second category, farms of more than 40 hectares (100 acres), represents 2.4 per cent of all farms in France, working 31.1 per cent of the land area. Their counterparts in Britain represented 7.2 per cent of farms and 69.5 per cent of the land. The mean size of such farms was very similar, at 93 and 92 hectares (232.5 and 230 acres). The group made up of big farms using wage labour, which can be defined as capitalist, made up only 4.8 per cent more farmers in Great Britain. However, they farmed 32.2 per cent more of the land area. If we take into account the fact that arable land took up 75 per cent of the cultivable area in France compared with only 43 per cent in Great Britain, and that pasture ground made up 14 per cent and 57 per cent of the cultivable area, and that pasture farming required lower labour inputs than arable, it seems that big farms in France actually made greater demands on wage labour than their British counterparts, and were thus just as capitalistic. This is what we would expect as a result of our analysis of farm size structures in France.

The French figures, unlike the British, include woodland and uncultivable land such as wastes, scrubland, and unimproved grazing for livestock. To compare the share of cultivable land taken up by British and French farms, we have first reworked the figures, which has the effect of reducing the figure for the mean size of French farms. In Table 3.2, the mean area covered by each type of farm has been calculated by farming type in order to bring out the true size of French farms.

The exclusion of woodland and uncultivated wastes alters the figure for mean French farm size, and the proportion of the national land area farmed by each category of farms. It is immediately apparent that the woods and uncultivated wastes made up a disproportionate

²² A more precise comparison, which employed a regional analysis, would take into account, in respect of the establishment of appropriate thresholds for the different farm-size groups, the proportion of ploughed land, grassland and, in general, the farming systems. On this, see n. 20.

TABLE 3.2. Mean area (in hectares) of farms by farm type according farm size for France.

Farm size (ha)	Cultivated		Woods		Uncultivated		Total	
	ha	%	ha	%	ha	%	ha	%
Under 1	0.51	3.3	0.04	1.2	0.04	1.35	0.59	2.7
1 to 5	2.53	13.3	0.26	5.6	0.21	6.27	3.00	11.1
5 to 10	6.03	13.7	0.68	6.3	0.60	7.57	7.30	11.7
10 to 40	15.96	32.7	2.25	18.9	1.92	21.96	20.13	29.0
Over 40	92.68	37.0	41.30	67.9	28.22	62.86	162.21	45.6
Total	6.09	100.0	1.48	100	1.09	100.00	8.66	100.0

Source: *Statistique agricole de la France, 1892.*

part of the figures for 'large farms', over 60 per cent in both cases. It can be deduced from the column for percentage cultivated in Table 3.2 that the percentage for the four lower farm size categories for the table fall slightly, as can be seen. As a result, their mean farm size increases only a small amount. The same cannot be said of farms of more than 40 hectares (100 acres), as the mean size of farms in this category rises from 92.7 to 162.2 hectares (231.75 and 405.5 acres), and their share of the cultivated land rises from 37 per cent to more than 45 per cent. Thus when woods and uncultivated waste are taken into account, the differences between Britain and France are further reduced. It seems legitimate to exclude woods and wastes for at least two reasons. First the value of woodland in Britain seems to have accrued to the great landowners, whereas in France they were often part of the land area of farms, and therefore of their income. The second, more important, reason relates to regional differences, since these two land types are highly concentrated in certain regions, such as mountain areas. Even though farms were undoubtedly more extensive than elsewhere, it is also true that arable was much less common, to the extent that mean farm sizes of more than 40 hectares (100 acres) became inflated for other regions. Only detailed regional analysis will make greater precision possible.

To define the differences between Britain and France better, these two types of land have been integrated into a comparative table based on the number of farms and their size, by farm size category, and adjusting to give Britain and France equal surface areas. The results are given in Table 3.3.

To some extent these new results are resonant with those extrapolated previously. As previously they show that differences did exist between Great Britain and France. Above all, this estimate shows that the differences were least evident in those farm-size groups usually linked to the idea of family farms: in the group from 8 or 10 to 40 hectares (20 or 25 to 100 acres). By the end of the nineteenth century, France was no more a country of peasant farms than Britain was, because the differences between the two countries were greatest amongst the smallest and largest farms, not between the 'family farms'.

Does the existence of a plethora of holdings between 8 or 10 and 40 hectares (20 or 25 to 100 acres), owning plough teams, in both Britain and France, prove the existence in both countries of a peasant economy on the fringes of a capitalist society? To show this, it would be necessary

TABLE 3.3. Relative differences in the importance of each farm size category in Britain and France.

<i>British size bands</i>	<i>French size bands</i>	<i>Number^a</i>	<i>Area^a</i>
Under 2 ha (5 acres)	Under 1 ha (2.5 acres)	+64.5	-34
2 to 8 ha (5-20 acres)	1 to 10 ha (2.5-25 acres)	-78.6	-77.7
8 to 40 ha (20-100 acres)	10 to 40 ha (25-100 acres)	-21.2	-18.5
Over 40 ha (100 acres)	Over 40 ha (100 acres)	+168.6	+52.6
Total	Total	-9.3	0

Note: ^a A positive figure indicates the size band was more important in Britain; a negative figure indicates the size band was more important in France.

Source: Calculated from Table 3.1.

to show that such farms used little or no wage labour. Before taking up this new question, we need to make the assumption that at the end of the nineteenth century about thirteen workers were needed on a farm of 100 hectares (250 acres).²³ Thus a ten hectares (25 acre) farm would use 1.3 workers, and the work of husband and wife would be enough except perhaps at harvest time. Except in harvest time, household members on farms of this size had free time to engage in other activities, working on garden plots, carting, and allied trades such as inn-keeping. At a threshold around 20 hectares (50 acres) 'independence' became more tenuous, because the farm required 2.6 workers. During the harvest the family would need to bring in outside assistance, perhaps in the form of mutual aid. In fact the threshold between being an employee and becoming an employer was largely a theoretical one, since as farm size increased, so did labour requirements (Table 3.4).

In order to understand the differences in employment requirements for each farm size group in France and Britain, it has been necessary to make estimates (albeit fairly rough ones) of the number of farm labourers necessary to cultivate the land using the coefficient of 1.3 workers per ten hectares (25 acres). Two estimates of the proportion of work done by the farmer and his family have been calculated. The first (marked (1) in Table 3.4) assumes that the farmer himself provided all the family labour; the second (marked (2) in Table 3.4) assumes that his wife and children added work inputs equivalent to half an additional labourer. It shows that those who worked farms of five to ten hectares (12.5 to 25 acres) in France had surplus labour that could be used for other work, particularly labouring on larger farms. The work requirements of farms of ten to forty hectares (25 to 100 acres) in France, and eight to forty hectares (20 to 100 acres) in Britain were largely provided by the family group with a slightly greater use of wage labour in Britain but a difference between the countries that was minimal. This new estimate shows the fragility of the idea of a family farm. It shows once again that France and Britain found themselves in almost identical situations. The results for holdings over forty hectares (100 acres) are very similar.

²³ To be more precise about this in the future, it would be necessary to take into account both the adoption of mechanization and the specialization of farms between arable or livestock production. It would be further necessary to test whether such a calculation could be applied right across the regions studied in this research.

TABLE 3.4. Theoretical requirements for wage labour on different sized farms in Britain and France.^a

<i>Hectares</i>	<i>Number of farmers</i>	<i>Number of farm workers</i>	<i>(1) % of farmers (assuming farmer alone employed)</i>	<i>(2) % of farmers (assuming family provide additional 0.5 person employed)</i>
France				
5 to 10	788,299	102,480	+769	+1150
10 to 40	711,118	1,475,400	-48.2	-72.3
Over 40	138,671	1,670,840	-8.3	-12.4
Over 10	849,789	3,146,230	-27	-40.7
Great Britain				
8 to 40	148,864	403,009	-37	-55.4
Over 40	98,938	1,185,231	-8.3	-12.5
Over 10	247,801	1,588,340	-15.6	-23.4

Note: ^a A positive figure indicates that the farmer is not fully employed on his farm, a negative sign is a mean percentage of additional wage labour required on the farm.

Source: Calculated from Table 3.1.

As with the earlier case studies, this estimate shows that the differences in farm employment structure were minor: more a matter of different emphasis than of contrasting basic types, because above a farm-size threshold of around twenty hectares (50 acres), farms on both sides of the channel made use of wage labour. These calculations are theoretical. Reality is always more complex than theory, and it is necessary to demonstrate its practical applicability using examples from farm accounts. To some extent we aim to show this in the next section.

III

Comparisons of farm size structure in Britain and France have shown few marked differences between the two countries. As it is usually said that France remained a profoundly rural country, we need to show this really was the case. Was France really a country of peasant farmers? Why, did it not experience a rural exodus like Britain? Even if French agriculture was not peasant based, did it remain backward? These are the questions we now need to consider.

In 1891, France had a total population of 38 million, compared with 33 million for Britain. The active population was 18.9 million and 14.6 million respectively – 49.6 and 44.4 per cent of the respective populations (Table 3.5).²⁴ This is not terribly different, except that a slightly higher proportion were active in France, which in itself may seem surprising.

Looking at this from another point of view, there were over 1.5 million workers in the agricultural sector in Great Britain, 10.4 per cent of the active population, compared with 8.4 million in the French agricultural sector, 44.4 per cent of the active population. Agricultural

²⁴ The active population is defined as men and women aged between 18 and 60. These two thresholds are approximations but it should not alter the analysis.

TABLE 3.5. Proportion of active population and agricultural population in Britain and France at the end of the nineteenth century.

	<i>Great Britain</i>	<i>France</i>
Population	33,028,200	38,269,000
Active Population	14,664,200	18,943,200
Active agricultural population	1,531,700	8,421,300
% of the population economically active	44.44	49.65
% of active population in agriculture	10.44	44.4

Source: BPP, 1891, CVI, Census of England and Wales; BPP, 1891, Tenth Decennial Census of the Population of Scotland; Ministère du Commerce, *Résultats statistiques du recensement des industries et professions (dénombrement général de la population)* (1896).

workers are four times as numerous in the French economy than in the British. From this perspective, Britain seems a much less agriculturally based country than France. This seems to make even better sense when we remember that there were ten times as many holdings in France as there were in Britain.

As the surface area of France is approximately twice that of Britain, and the population roughly the same in the two, it follows that population density stood at 144 persons per 100 hectares in Britain, but only 72.5 persons in France. This makes one question whether the proportion of active workers to the total population is a good indicator of the differences between the two countries. If at that time France had had the same population density as Britain, there would have been 76 million French people and the proportion of the population actively engaged in agriculture would have been no more than 22.4 per cent. The number of active agricultural workers relative to the economic position of agriculture would not in this respect have increased. From the British perspective, if Britain had the same population density as France, the proportion of the population actively involved in agriculture would have been 20.7 per cent. It turns out that the density effect hides the real place occupied by the agricultural workforce in the two economies.

This approach gives a false impression of the economic efficiency of the agricultural workforce in the two countries. The importance and effectiveness of the agricultural workforce cannot be judged in relation to the economically active population as a whole, but rather in relation to the total national product, or even better in relation to our approach, in relating the number of agriculturally active persons to an equivalent agricultural area. The comparison of proportions and densities of agricultural workforces does not in itself introduce distortions in making comparisons between the two agricultural economies. However, a new difficulty does arise because the two countries do not use the same production systems and do not grow the same crops. The latter is major influence on labour use: different crops and farming types require different amounts of labour.

Let us look at those factors differentiating the two countries in terms of crops. First of all, agricultural land makes up 91 per cent of the French surface area, and only 84 per cent of Britain's. The difference in itself is negligible, but the amount of land represented by that

proportion does not receive the same attention in each country. Thus much rough pasture, lightly stocked, requires a tiny labour input, and the same of true of grassland that bears only one hay crop in a year. Woods and forest, too, require hardly any labour inputs. At the opposite end of the scale, vineyards require between three and four times the labour input of arable land. This leads us to define the proportions of intensively cultivated land, which amount to 69 per cent in Britain, and 72 per cent in France. Finally we need to input into our calculations the fact that arable land made up 34.1 per cent of the usable agricultural area in Britain as against 52.7 per cent in France, and that this land required higher labour inputs.

In the absence of figures that allow us to make calculations about agricultural employment on both sides of the channel that take into account the relative importance of different crops and regional differences,²⁵ an enquiry relating to the countryside of eastern Great Britain in the late 1920s (unfortunately a period when tractors were already in use) can help us be more precise. It appears that between 50 and 58 work days were required to grow 1 hectare (2.5 acres) of sugar beet or potatoes, while wheat needed only 9½ days. It therefore follows that sugar beet, the most intensively cultivated crop, received the greatest number of different labour inputs. From these figures we can estimate that one hectare of land following a four-course rotation required 30 days of work, excluding the work days required for managing the livestock, spreading dung and a share of the general farm maintenance. The amount of labour required is much higher than the 5.4 days needed for one hectare of hay on meadow.²⁶ From this it follows that the 52.7 per cent of French land under the plough (to which must be added land under vines, which needed three or four times the labour input of arable) needed much more work than its counterpart in Britain. The overall figure for arable land in France required five times as much labour input in France as in Britain. However, as the active agricultural population is 5.7 times greater in France than across the channel, labour density remains an important factor.

As it is currently impossible to construct an overall labour index that can take into account the different labour requirements of different crop régimes, we need to use the available statistics despite their imperfections. Using census figures for the active agricultural workforce, population densities have been calculated for the different agricultural regions defined above. The density of active agricultural population per 100 hectares (250 acres) is 7.9 in Britain, compared to 18.1 in France, so about 44 per cent. The figure for arable lands works out at 46 per cent (Table 3.6).

Britain's superiority over France lies in the smaller number of agricultural labourers required for a given area of land and, consequently, a higher labour productivity for the farm workforce. These results are quite contrary to those we derived earlier, and there is nothing to explain this in terms of technical differences.²⁷ We therefore need to make a critical assessment of the census data.

²⁵ Population censuses do not give a precise overview of agricultural employment, because, for example, they do not take account of the seasonality of agricultural employment, nor of multiple occupations. Only farm accounts allow us to repair this omission and allow the true volume of labour on the farm per unit of output to be measured.

²⁶ W. H. Kirkpatrick, *The seasonal distribution of farm labour requirements* (1930).

²⁷ Comparisons of the progress of mechanization of French and British agriculture will be made at a future date. We suspect that it will prove very similar on both sides of the channel.

TABLE 3.6. The density of the active agricultural population in Britain and France in relation to farming type (people per 100 hectares).

<i>Land</i>	<i>Great Britain</i>	<i>France</i>	<i>Proportion</i>
Total land area	6.7	16.5	0.40
Agricultural land	7.9	18.1	0.44
Arable land	11.5	25.1	0.46

Source: BPP, 1895, XVII, Agricultural Returns for Great Britain; *Statistique agricole de la France*, 1892.

We have seen that the economically active proportion of the population was higher in France than Britain, at 49.6 per cent compared with 44.5 per cent. Since population structure in Britain had a younger age profile than in France, this is not what one would expect. The difference can be better understood when we look at gender differences in the economically active population. Overall in Britain, the percentage of women in the workforce was 31.1 per cent against 34.6 per cent in France, which suggests that the statistical reckoning took less account of them. However, by contrast, only 4.0 per cent of women were classed as agricultural workers in Britain, compared with 32.7 per cent in France. Do the small numbers of women apparently engaged in British agriculture therefore account for the differences in percentages of economically active population?

Gender differences in agricultural population density in different agricultural regions, as defined above, do indeed provide an answer to our question. For all agricultural land and for arable land, the density of active male French agricultural workers is only about 50 per cent greater than in Britain, compared with a figure for all agricultural land that is more than double, because women's work on the farm was considerably less in Britain than in France. For regions of highly intensive agriculture, the overall agricultural labour density is only 50 per cent higher in France than in Britain, and for men, the figure is very similar on both sides of the channel. These calculations are only approximate because of lacunae in the available statistics, the effects of seasonal work, and the different labour demands of different cropping patterns, all of which are difficult to take into account. They do allow for a comparison that takes into account different cultivated areas, and different agricultural type weightings on the two sides of the channel, as the earlier reworkings have done.

When this result – which suggests that 13 farm workers per 100 hectares (250 acres) were used in both Britain and France²⁸ (see also Table 3.4) – is applied to the figures derived above, for the number of workdays necessary to bring into cultivation a standard land unit for a given crop type, we propose (with some trepidation) to set out an overall index of agricultural work density (Table 3.7). A surprising result of these new figures is that the density of male agricultural workers is markedly similar on both sides of the channel, and it is the under-registration of women's agricultural work in Britain that makes the French figures seem much higher.

²⁸ Undoubtedly valid for cereal areas in general, this index is bound to overestimate employment in livestock regions, and may under-estimate for some cropping systems, for instance in Brittany where furze-cutting makes high demands on labour. On this see note 20.

TABLE 3.7. The density of the active agricultural population by land-use type and gender (people per 100 hectares).

	Great Britain			France		
	Men	Women	Both	Men	Women	Both
Agricultural land	7.6	0.3	7.9	12.2	5.9	18.1
Arable land	11	0.5	11.5	17	8	25
Intensively cultivated land	22.3	0.9	23.2	23.1	11.2	34.3
Overall	16.5	0.7	17.2	16.3	7.9	24.2

Source: BPP, 1891, CVI, Census of England and Wales; BPP, 1891, Tenth Decennial Census of the Population of Scotland; BPP, 1895, XVII, Agricultural Returns for Great Britain. Ministère du Commerce, *Résultats statistiques du recensement des industries et professions*; *Statistique agricole de la France*, 1892.

Why do women appear to have worked so much less in late nineteenth-century British agriculture? Was it because they did less work in the fields than their French sisters, or because the British census picked them up much less than in France? An excellent recent book demonstrates irrefutably that the problem is one of under-registration.²⁹ Agricultural labour for a constant land area is therefore no more important in France than in Britain. The picture of France as teeming with superfluous agricultural workers, the corollary of the idea of a peasant France, disappears as well.

IV

In stark contrast to traditional historiography, whether that set out by contemporary authors at the dawn of modern economic growth, or those writers such as Marx who have adopted their approach, British peasants were not evicted from their land to any greater extent than their French counterparts. The number of agricultural plots and holdings was scarcely less than in France. The percentage of the active agricultural workforce in France does not seem higher than in Britain relative to land area. A Britain based on that much admired and envied phenomenon, agrarian capitalism, can no longer counterpoint a peasant France, which has evaporated under closer analysis, even if we still acknowledge differences between the two rural economies. New studies are needed to confirm some of the hypotheses put forward in this chapter, but they will not bring into question the view it advances.

There have been ideological reasons why the agrarian history of our two countries has been obfuscated by the use of statistical series that have too often been taken at face value. Where has been that spirit of criticism that historians so prize? Without it, we become as much the dupes of history as the man in the street who reads life as an open book. We should not forget how there is a tendency still today to write history by borrowing existing representations of the past rather than returning to rational consideration of the evidence. Without Quesnay, Young and, above all, Marx – in other words, without the idea of an English model

²⁹ N. Verdon, *Rural women workers in nineteenth-century England: gender, work and wages* (2002).

of agricultural progress – would there have been agricultural collectivization, collective farms and gulags?

Let us set out the consequences of this analysis. Classic historiography has made the expropriation of the peasantry the engine of agricultural growth and industrialization in Britain. The peasant was hounded from his land to become a proletarian as if the whole evolution of society depended on a single causal element. Is it reasonable to see things in this way when we know that Britain, with only five million inhabitants around 1700, had 8.7 million around 1800, and 33 million in 1900, while at the same time French population rose from 22 million to 24 million and then to 38 million? In the light of such massive population growth, how important were a few peasant farmers who suffered through the enlargement of farms? Britain's industrialization arose out of population growth, a fact that can no more be denied than the contemporaneous bringing into cultivation of fallow land stimulated a demand for agricultural labour on both sides of the channel.³⁰

Confronted with this explosion of population, it is understandable that rural exodus was much more important in Britain. This thesis about British industrialization logically needs a complementary hypothesis for France. It was necessary for those farmers who remained on the land to become more productive than in France, and for this to be possible, the introduction of mechanization should have been more rapid and important. This is an often-postulated thesis, based on the use of deductive logic that has been put forward by historians but never shown to be a fact. We will challenge it and postulate that the movement to introduce mechanized processes into agriculture was identical on both sides of the channel.

This research has shown that comparing the number of workers per surface area unit provides a new and better way of confronting the problem of agricultural labour productivity. How does it compare with the hypothesis argued by Greg Clark?³¹ According to his table (Table 3.8), production per acre is only 18 per cent greater in Great Britain than in France, though English labour productivity is double that of France. Our results indicate that the worker's productivity should be roughly the same as the acre productivity. We know our results are derived from approximate data but this is not a unique problem. Output price measurement may have economic meaning even if it does not reflect soil output because of price distortions.³² The measurement of labour productivity is uncertain as well. In fact, at a macroeconomic level, we do not have any reliable data giving the real labour output levels, either in Great Britain or in France.³³

There are two ways to get round these difficulties to support our hypothesis. First we can compare the work done to accomplish various agricultural tasks. Two examples will

³⁰ For a discussion of this problem, see J.-M. Chevet, 'Quelle "révolution agricole" en Angleterre? À propos de deux livres récents sur l'agriculture anglaise du moyen âge au milieu du XIX^{ème} siècle', *Histoire et Mesure* 11 (1997), pp. 389–410.

³¹ G. Clark, 'Too much revolution: agriculture in the industrial revolution 1700–1860', in J. Mokyr (ed.), *The British Industrial Revolution: an economic assessment* (sec. edn, 1999), pp. 206–39.

³² M. Overton and B. M. S. Campbell, 'Production et productivité dans l'agriculture anglaise, 1086–1871', *Histoire et Mesure* 9 (1995), pp. 255–97; J.-M. Chevet, 'A new method of estimating land productivity', in E. Thoën (ed.), *Land productivity and agro-systems in the North Sea area (middle ages – twentieth century). Elements for comparison* (1999), pp. 339–56.

³³ Chevet, 'Quelle "révolution agricole" en Angleterre?', pp. 400–4.

TABLE 3.8. Acre and worker productivity in Great Britain and in France.

	<i>Output per acre</i>	<i>Output per worker</i>
Great Britain	100	100
France	82	44

Source: G. Clark, 'Too much revolution: agriculture in the industrial revolution 1700–1860', in J. Mokyr (ed.), *The British Industrial Revolution: an economic assessment* (sec. edn, 1999), p. 211 and table 4.2.

demonstrate where the problem lies. At the beginning of the nineteenth century, it seems that the area ploughed per day was similar in Great Britain and in France.³⁴ The same labour inputs per surface unit were also needed for the harvest.³⁵ As we have seen, an alternative measure of productivity can be calculated from the work quantity per surface unit derived from farm accounts.

Why then did France not achieve the same agricultural productivity as its long-term rival, Britain. It is not because the use of agricultural labour on an equivalent plot was the same on both sides of the channel that productivity was lower in France. It was enough that average output per acre was less, for reasons of natural advantage, to make the use of labour not proportionate to output in the agricultural sector of the economy. We will demonstrate how this occurs in a future paper.

The agricultural history of our two countries has been woven with similar threads, and the relatively small differences have been outrageously clouded by political baggage over the last two hundred years. In the twenty first century we need to work together, and this process would be much assisted by recognizing that the similarities in our rural pasts far outweigh the differences.

³⁴ For example, J. Billingsley, *General view of the agriculture of the county of Somerset* (1794), p. 94; J.-M. Chevet, 'L'évolution de la productivité de l'attelage au cours du XIX^e siècle dans les régions de l'Île-de-France' (unpublished).

³⁵ About six workers per hectare, threshing included, in Great Britain and in France. The calculations are based on Kirkpatrick, *Seasonal distribution*, pp. 25 and 40 and J.-M. Chevet, work in progress.

An English peasantry, revisited, 1800–1900

by Alun Howkins

It was for many years a truism of English agrarian history that by the middle of the nineteenth century English rural society was divided into what James Caird, writing in 1851, called ‘the three great interests connected with agriculture – the landlord, the tenant and the labourer’.¹ Against this, in the last twenty years, a number of pieces of work, most notably the pioneering study of parts of West Sussex by Reed and later by Hall, Donjargrodski and Howkins, have raised the question of whether, in many areas of England, there existed a group of small farmers and farmer-tradesmen, playing an important part in rural social structure, whose economic and social position looked much more like the ‘peasants’ of mainland Europe than any of Caird’s three ‘great interests’.² This view has, in turn, come in for criticism in recent work by Leigh Shaw-Taylor and others working on the current ESRC-financed project at Cambridge, looking at occupational structure in England from 1700 to 1850.³ This chapter looks again at this material to see to what extent the notion of a peasantry in nineteenth-century England is of use or interest to the rural social historian.

We begin with the vexed issue of definitions. It is another commonplace that, by the mid-nineteenth century, English agriculture and agricultural prosperity were based on ‘large farms’ yet, even in 1880s, according to the agricultural statistics, 74 per cent of agricultural holdings were under 100 acres in size and, more importantly, 58 per cent were between 5 and 50 acres. Indeed, the small size of farms was often noted by contemporaries. Leonce de Lavergene, the French agriculturalist who visited Britain in the early 1850s, was surprised to find just how small many English farms were:

The agricultural prosperity of England is generally attributed to large farming; but ... ideas on the subject are much exaggerated ... No doubt there are very large farms, just as there

¹ J. Caird, *English agriculture in 1850–51* (1852; sec. edn, 1968), p. 520.

² M. Reed, ‘The peasantry of nineteenth-century England, a neglected class?’ *Hist. Workshop* J. 18 (1984); A. Hall, *Fenland worker-peasants. The economy of smallholders at Rippingdale, Lincolnshire 1791–1871* (Agricultural History Review Supp. Ser. 1, 1992); A. J. Donajrodski, ‘Twentieth-century rural England:

a case for peasant studies’, *J. Peasant Studies* 16 (1989); A. Howkins, ‘Peasants, servants and labourers: the marginal workforce in British agriculture, c.1870–1914’, *AgHR* 42 (1994).

³ For early material from this research see L. Shaw-Taylor, ‘Family farms and capitalist farms in mid-nineteenth century England’, *AgHR* 53 (2005).

are very large estates; but these form by no means the majority. There is a multitude of farms under the middle size, which would pass for such even in France; and the number of small tenants is infinitely greater than the number of small proprietors.⁴

Those primarily interested in 'farming' rather than broader questions of socio-economic relationships have all argued the need to set an acreage below which farming ceases to be the sole source of income for a family. Grigg, Mingay and Sheppard have all argued for 20 acres as the minimum here.⁵ Leigh Shaw-Taylor has recently argued for self-ascription as a key element. Using the 1851 Census data he states that:

the term 'farm' was used to mean an agricultural holding from which the occupiers derived their primary employment and the term 'farmer' was restricted to those whose primary occupation was farming.⁶

This description was derived from the completion of the household schedule by the householder, which was then checked by the local enumerator and entered into the Census Enumerator's Book, which was then further checked by the district registrar.

At one level this argument has many virtues, not the least of which is simplicity. However, at another, it requires a considerable leap of faith (based on the analysis of the Census Enumerators' Books for only one county) to accept that the majority of farmers, let alone those involved later in the enumeration process, were capable of producing an accurate account of their occupation or even willing to do so. This is particularly so, given the problems with rural occupational descriptors encountered elsewhere in the census.⁷

This problem is made worse if we ask what is meant by 'farmer', even if we ignore multi-occupations, which are considered below. There is no doubt that, while in some areas self-ascription seems to have been used, in others it is certain that the enumeration process militated against very small landowners or farmers being entered as such at the census. At one extreme, George Jones of Kiddington in Oxfordshire is described in 1851 as 'a farmer of 1.5 acres employing no labourers', while at the other, Peter Penfold of Lodsworth in West Sussex is described in the census as a 'ropemaker' when the tithe schedule shows him as holding 80 acres of mixed farming lands, an acreage near average for a 'proper' farm in that area.⁸ In the same area, the self-ascription 'farmer' was used for holdings from 6 to 300 acres. While this may not be problematic – in the sense that it is possible to define a small farmer, as Shaw-Taylor does, as somebody who employs no labour or, as others have done, by size of holding – none of these broad descriptors recognizes the complexities of rural social and economic life.

⁴ L. de Lavergne, *The rural economy of England, Scotland and Ireland* (1855), p. 108.

⁵ D. Grigg, 'Small and large farms in England and Wales', *Geography* 48 (1963); G. E. Mingay, *Enclosure and the small farmer in the age of the Industrial Revolution* (1968); J. A. Sheppard, 'Small farms in a Sussex Weald parish, 1800–1860', *AgHR* 40 (1992).

⁶ Shaw-Taylor, 'Family farms', p. 165.

⁷ For farm servants and labourers, see A. Howkins and

N. Verdon, 'Sustainable and adaptable: the persistence of living in farm service in midland and southern counties 1850–1920', *EcHR* 61 (2008), and particularly the work of Eddie Higgs, for example, 'Women, occupation and work in the nineteenth-century census', *History Workshop J.* 23 (1987).

⁸ M. Reed, 'Social and economic relations in a Wealden community: Lodsworth 1780–1860' (unpublished MA thesis, University of Sussex, 1982), p. 41.

Following on from this analysis, for the numbers of small farmers, Leigh Shaw-Taylor produces from the 1851 census a very different set of figures from those derived from the agricultural returns produced after 1866. These new figures suggest that the number of 'true' small farmers was much lower than has previously been argued. While this is clearly so in the national figures as a whole, it is less clearly the case in the key peasant farm group of between five and fifty acres. Here, his census data for 1851 shows that 39.5 per cent of all 'farms' were in this group, while the returns for 1870 show that 44.6 per cent of all 'holdings' were in this group – not a huge difference. The great difference is found in holdings of below 5 acres. Here, the 1851 census showed only 3.4 per cent of farms, according to Shaw-Taylor, but the 1870 returns showed 25 per cent of holdings.⁹ However, even accepting the 1851 census figures from Shaw-Taylor, 43 per cent of 'full-time' farms were less than 50 acres, while in 1871 the figure was still 35 per cent. By any measure this is a considerable percentage, even if less dramatic than the one derived from the agricultural returns.

As Reed pointed out, size is clearly not the only criteria for deciding if these were 'peasant' holdings. It could be argued that many of these holdings were 'leisure' farms held by the wealthy. However, in 1912, the agricultural statistics estimated that only 6 per cent of Britain's half-a-million farm holdings were not farmed for business. More difficult still is the notion that one farmer could hold more than one of these holdings. This is a very real problem, because the statistics we have do not allow any real estimate of this practice, even at local level. But again, in 1912 the agricultural statistics suggest that only 4000 to 5000 holdings were held in this way.¹⁰

A simple size criterion is also a problem in other ways. A farm of 100 acres (Reed's figure for a 'peasant' or family farm) in the very good lands of East Norfolk in the 1850s or 1860s was a fully developed capitalist enterprise. Similarly the dairy farms of the Midlands and even the West of England produced for the market on much lower acreages. The growth in importance of dairying also points to important changes over time in the agricultural sector as a whole. For instance, by the 1880s, around most great cities and even large towns, there were many acres of market gardens producing, often under quite sophisticated systems, fruit, salads and vegetables for the market. Around Worthing in West Sussex, for example, by the 1860s, table grapes were produced under glass for the London market. By the 1890s, this area switched to producing salads and especially tomatoes in sufficient quantity for special wagons to be added to early morning London trains. The Vale of Evesham in Worcestershire produced fruit and vegetables for Birmingham, Bristol and the industrial areas of South Wales as well as selling locally in a market that F. E. Green said in 1912 gave the feeling 'that you are no longer in England but in some provincial town of southern France'.¹¹ Yet, even with these examples removed, we are left with a large number of 'holdings' that wholly or partly supported a family unit by farming.

There is also the question of regional variation. In 1851, Caird divided England into two areas: the south and east, and the north and west, roughly a division between highland and lowland England. According to Caird, it was in the north and west where the small farmer survived. Here, Caird found 'the farms are of small extent, and held by a numerous class of tenants, who live frugally, and, in many cases, assist, with their families, in the labours of

⁹ Shaw-Taylor, 'Family farms', Table 2, p. 165.

¹⁰ Reed, 'Peasantry', p. 72.

¹¹ F. E. Green, *The awakening of England* (1912), p. 55.

the farm'.¹² This is supported by Grigg, who identifies the main areas of small farms in the nineteenth century as being 'the south-west ... the industrial counties of the Midlands and the north-west'.¹³ This regional variation is also broadly supported by Shaw-Taylor's work.¹⁴ While this regional distribution is certainly the case, it seriously distorts the picture. As we noted earlier, in 1885, 74 per cent of all agricultural holdings in England were under a hundred acres in extent (Reed's definition of a family holding). However, even if we take 50 acres – which I have argued elsewhere is a more realistic figure – as a 'peasant' holding, we still have 58 per cent of holdings under that size while using Mingay and Grigg's definition we have 21 per cent between 20 and 50 acres. In Norfolk, the archetypal lowland county and the apogee of English high farming in many accounts, 56 per cent of farm units were between 5 and 50 acres in 1885 and 21 per cent between 20 and 50 acres.

A key feature of this group, as Caird noted in 1851, was its reliance upon family labour. This accords closely with Theodor Shannin's definition of the modern peasantry: 'In the views of a majority of contemporary analysts who accept peasantry as a valid concept, it is the family farm which is the most significant characteristic of the peasantry'.¹⁵

It is difficult to get precise figures on family farms from the censuses or from the agricultural statistics, but Reed's analysis of the 1831 census shows that 40 per cent of landholdings in England employed no labour in that year and were therefore entirely reliant on the family work group.¹⁶ In 1851 there was very little change with 39 per cent of farms employing no workers. Once more there were important regional variations, a division between the north and west, and the south and east. As Dewey writes:

... at the 1871 census of population the ratio between male farmers' relatives and hired male labour was only about 3 per cent in southern and eastern counties of England, but rose to 12 per cent in south-west England [and] almost 18 per cent in the north.¹⁷

Shaw-Taylor's figures using the census definition broadly bear this out with quite striking regional differences in farms employing no labour on census night.¹⁸

Dewey continues that, in 1871, 'the labour of the farmer and his family must have dominated the work of the farm under 100 acres, and especially the farms of less than 50 acres'. This is clearly even more so when women relatives are included. Afton and Turner estimate that, in 1908, 406,000 relatives, male and female, were employed on 430,081 holdings of over one acre in England and Wales – which means that 41 per cent of the permanent farm work force were relatives of farmers.

It is difficult, beyond the national figures available towards the end of the nineteenth century, to get beyond the broadest of generalizations about this family labour. The census, until 1871, gave for each person describing him or herself as a 'farmer' an acreage and the number of workers employed – although, in 1861 and 1871, for only a sample of counties. They also allowed

¹² Caird, *English agriculture*, p. 482.

¹³ D. Grigg, 'Farm size in England and Wales, from early Victorian times to the present', *AgHR* 35 (1987).

¹⁴ Shaw-Taylor, 'Family farms', pp. 189–90.

¹⁵ T. Shanin, *Peasants and peasant societies* (new edn, 1988) p. 5.

¹⁶ Reed, 'Peasantry' p. 55.

¹⁷ P. Dewey, 'Farm labour' in E. J. T. Collins (ed.), *The agrarian history of England and Wales*, VII, 1850–1914 (2 vols, 2000), (i), p. 825.

¹⁸ Shaw-Taylor, 'Family farms', p. 183.

the category 'farmer's relative' to describe a family member working on the farm. This material is inherently difficult to deal with on a large scale. For example, how can we know with any accuracy if the named member of the household was actually working on the farm rather than simply living there? Shaw-Taylor deals with this by using data on male relatives only, which clearly does not fit with the qualitative accounts from farmers' memoirs, in which the work of farmers' wives and daughters is central to the success of the farming household. On the other hand, we could assume that very large and wealthy farmers would not employ daughters or perhaps even sons on their farm unit.

If we take the 1851 Census Enumerators' Books for the West Sussex parish of Kirdford, we find 53 farming households headed by people (49 men and 4 women) whose primary self-ascription was farmer. Their holdings range in size from 6 to 318 acres. In 1851 these farms had 116 people living on them whose only description was 'farmer's relative' and who were over the age of 14. Strikingly, 74 of these were women while 42 were men. Neither of these figures is anything like that produced by Shaw-Taylor, which suggests one relative to every two farmers as a national average. There does not appear to be any real relationship between size of holding and number of 'relatives' except at the extremes. At Balls Cross, John Payne described himself as a farmer of six acres, with a wife, son and two daughters in the economically active age range, who appear simply as relatives. He employed no workers. At Slifehurst, Wesley Tobbitt farmed 130 acres. He told the census he employed one man but had two young relatives living with him both described as 'farmer's son'. The largest farm in the parish, at 318 acres, was Belchamber Farm, which was farmed in 1851 by John Herrington, a widower of 70, with seven men and three boys. He had two farm servants living in, a son of 28, and a daughter of 25, both simply described as 'farmer's son' and 'farmer's daughter'. One would like to think that the children of John Payne and his wife – 65 and 69 respectively – worked the tiny farm, perhaps also doing other work or using some of Kirdford's rough commons, as the small farmers of Headington Quarry near Oxford did. On the other hand, one would have thought that the farmer's daughter at Belchamber, a fine 'Great Rebuilding' Wealden farmhouse, would 'sew a fine seam' rather than 'feeding swine'. It seems very likely that the two young men living with Wesley Tobbitt at Slifehurst and described as 'son-in-law' (which, given their ages and lack of wives, they are unlikely to have been!) were working – otherwise why else would they be there? But in the end we cannot be sure. On the basis of this admittedly tiny sample from the census enumerators' books, it does seem that Shaw-Taylor may be underestimating the level of family labour on farms in 1851.

By moving away from statistical data, we can begin to get a sense of the nature of family labour even if it means moving out of the south of England. To the small farmer, family was vital, because in most cases the farm workforce and the family were the same thing. Marriage was almost as important here as it was to the aristocracy, but for very different reasons. A man called 'Norfolk Jack', who was interviewed by Alice Catherine Day in East Sussex in the 1920s, put it graphically: 'There was a young woman servant at my employer's house. I married her, and then my prosperity began ... She was strong, active, industrious and a good manager. She would do all kinds of work'.¹⁹

¹⁹ A. C. Day, *Glimpses of rural life in Sussex during the last hundred years* (Kingham, n.d. c.1928), pp. 10–11.

More prosaically, a small Lancashire farmer told the 1894 Royal Commission on Agriculture:

I was a labourer up to 22 years ago. I worked very hard when a labourer and so did my wife, who was a servant on the farm where I was employed. We married when in service, 40 years ago. We had not a sixpence when we married, but then we began to save a bit. We first took a farm of seven acres, and kept cows. We sold milk and butter and also brought calves up.²⁰

Even further up the scale, a hard-working wife could transform a small farm by her labour or by her own money as Davidoff and Hall have shown in their study of Essex.²¹

Once married, the wife's work was vital. 'What a wife mine was! Brought up chickens? Yes, I should think so. Why she used to go leasing three miles from home by four o'clock in the morning throughout harvest.'²² On the hill farms of Northumberland, the wife's work with hens and cows came back to the family in the form of groceries. On certain days higglers would go to pre-arranged points, 'and [the farmers' wives] met them at Kielder Hill foot, taking the butter and eggs down and coming back with groceries if they wanted'.²³ In Bicester, Oxfordshire, up until the Great War, the wives of smallholders and small farmers brought their farmyard and garden produce to the shop of Charlie Clifton in North Street, where it was exchanged for goods or paid off debts run up in the winter.²⁴ Even on a relatively large farm in Leicestershire, a version of this system operated:

Eggs were Mother's currency, as cowrie shells are to some remote islanders. Whenever there were minor debts to settle with local people they were given the choice of cash or eggs. The latter was always the best buy and all the villagers knew it. So eggs paid for the knitting of socks and scarves, the making and altering of dresses, sweeping the chimneys, and beating of carpets.²⁵

The labour of other family members was also vital to the small farmers. Reed has stressed the centrality of the work of the farmers' sons. But it was not only sons, as Mrs Murray who grew up on a farm near Kielder in Northumberland, remembered:

In these days the cows were put on the hill and had to be brought in and milked up the dyke back in the summer, and the milk carried back ... We helped with whatever farm work was going on, setting potatoes, or tasking up potatoes, and hoeing and weeding potatoes ...

²⁰ BPP, 1894 Cmd. 7334. Royal Commission on Agricultural Depression. Reports by Mr Wilson Fox on the Garstang district of Lancashire and the Glendale district of Northumberland, p. 63.

²¹ Davidoff and Hall, *Family fortunes*, ch. 6.

²² Day, *Glimpses of rural life*, p. 11.

²³ Northumberland Record Office (hereafter NRO) T/63. Interview with Mrs Murray, b. 1900, Barrowburn, Northumberland.

²⁴ Interview, Mrs Cherry (Charlie Clifton's daughter),

b. Bicester c.1905. Tape in author's possession. See also T. Vigne and A. Howkins, 'The small shopkeeper in industrial and market towns', in G. Crossick (ed.), *The lower middle class in Britain, 1870-1914* (1977), pp. 184-210; M. Reed, '"Gnawing it out": a new look at economic relations in nineteenth-century rural England', *Rural Hist.* 1 (1990), pp. 83-94.

²⁵ H. St G. Cramp, *A yeoman farmer's son: a Leicestershire childhood* (1985), p. 15.

We made our own butter there, then the water was to carry ... always plenty of work on a farm, never time to be early.²⁶

Most family labour was unpaid, although we sometimes find farmers' sons described as 'farm labourer' or even 'farm servant' in the Census Enumerators' Books. This represented a major gain to the small farmer. In some cases, as the boys came of age, even on a relatively large farm, regular workers were laid off and replaced by family labour: 'Well about that time when I started ... he had to give up this Mister Mason because he couldn't keep him any longer you see ... and within the next year or two I had the job of looking after the horses ... There was just me and my father and my Uncle then'.²⁷

In Cornwall it was the same, though here there could be long-term gains. 'I never earned a wage. We didn't in those days. Not even the boys. They were working and then they were old enough to get married. They might be set up – have a bit given to them, you know, a cow or two, or something when farming'.²⁸

Inevitably, the lack of payment was resented by some farmers' children. Many daughters felt unseen or unspoken pressures. The daughter of a small farmer from Co. Durham was told by the local doctor that she should train as a nurse: 'I went to night school and I was carrying on fine, learning French and Latin ... but me mother had too much work and I had to stay at home'.²⁹ Even boys who could inherit sometimes felt disadvantaged, as a Devon farmer born in 1900 said: 'being the older member of the family we were expected to go onto the farm and help the family. Whereas the next son had an opportunity to go away to a boarding school and had a better education'.³⁰ The experience of Henry St George Cramp in Leicestershire was very much the same, although he went to a village school:

Yeoman farmers down the ages have managed their farms with mainly family labour. We did likewise and rarely employed more than one outside labourer except at harvest ... Those of us at school made our contribution to work in the evenings, at week-ends, and during holidays. Fortunately my regular schooling was not interfered with. My older brothers were not so lucky. When in later years I searched the primary school records, there seemed an all-too-obvious liaison between the local school headmaster and my father, who were friends, and it showed in the absences of my brothers at harvest time.³¹

The status, even the occupational nature, of this group, is confused further, at least according to standard agricultural history accounts, by multi-occupation. Leigh Shaw-Taylor discusses this problem at some length, arguing that the census enumerators were firmly instructed to distinguish the relative importance of the different elements of multi-occupation by the order in which they appeared on the census form. So a man (Shaw-Taylor omits women from his calculations) who believed himself to be a farmer would put that occupation first – for example

²⁶ NRO, T/163, interview, Mrs Murray.

²⁷ Interview, Harold Hicks, Trunch, Norfolk. Sept. 1974. Tape in author's possession.

²⁸ University of Essex, Oral History Collection (hereafter EOHC), Tape no. 442, woman, b. 1901, Helston, Cornwall.

²⁹ EOHC, Tape no. 256, woman b. 1893, Cockfield Co. Durham.

³⁰ EOHC, Tape no. 352, man b. 1900, Staverton, Devon.

³¹ Cramp, *Yeoman farmer's son*, p. 38.

‘farmer and publican’ – while one who believed himself to be mainly a publican would reverse the order – ‘publican and farmer’.³²

Again, we return to the key assumption in Shaw-Taylor’s work, that we have to accept his (and the census takers’) definition of ‘farmer’ as one whose main or only source of income came from ‘farming’ if we want to analyse the social and economic structure of mid-century agricultural England. Against this, Reed argued some years ago that it was precisely multi-occupation and its relationship to landholding and occupation that marked a distinctive group of what he called ‘small family or household producers’.³³

The Census Enumerators’ Books reveal, even late in the nineteenth century, the fact that many ‘workers’ held different jobs at the same time. In Wheatley, Oxfordshire, in 1871 this was very clear in relation to publicans: John Tonks held the King and Queen pub and was a victualler, but he was also a master tailor; the owner of the Chequers was also a butcher; Charles Froxley at the Bell was also a master baker. Publicans, though, could move out of trade and into land: James Mitchenor kept the Half Moon in Kirdford at the Tithe Survey in 1845; he also rented eight acres of arable near the pub. However, he also owned 97 acres of mixed farmland, which was let to a larger farmer, and five cottages. He died between 1845 and 1851, by which date the pub was run by his widow. She subsequently appears in Kelly’s Directory for 1852 as a ‘publican, baker and wheelwright’.³⁴

Small tradesmen holding land were extremely common and in some trades – for example, milling – the reason is obvious. In Kirdford, two out of the four millers appearing in Kelly’s Directory for 1852 also held land at the tithe award of seven years earlier. These multi-occupations, especially where the landholding involved was large, do appear, to an extent, in the census. In Kirdford in 1851 we find, for instance, a ‘farmer and hoop maker’ (47 acres), a ‘brick maker and farmer’ (50 acres), and a ‘grocer and farmer’ (40 acres). In the next parish of Wisborough Green, we find a ‘shop-keeper and farmer’ (40 acres), a ‘carpenter and farmer’ (32 acres), a ‘carrier and farmer’ (70 acres), a ‘farmer and butcher’ (80 acres), a ‘farmer, auctioneer and lime and coal merchant’ (24 acres), and a ‘smith and farmer’ (150 acres). It is clear from these self-ascriptions that there are problems with relying too heavily on them. Quite simply there appears to be little correlation between self-ascription and farm size relative to other occupation. Of course farm soils and farm type vary even in small areas, but a holding of 70 or 150 acres is considerable whereas one of 24 acres, where the principal occupation is farmer, is not.

The owners of small amounts of land held, however, do not appear even in the Census Enumerators’ Books, but they can be traced through the tithe surveys, although this is a lengthy and laborious process! In Lodsworth, West Sussex, Reed shows that ‘of the nineteen tradesmen in Kelly’s Directory for 1852, all but four occupied more than an acre of ground’.³⁵ These included a blacksmith, a tailor, a carpenter, and a grocer and draper. In Kirdford, the figure is much lower (this could be a result of still incomplete identification) but still, 10 of 23 tradesmen held land, including a grocer and maltster, a wheelwright, a shopkeeper, two carpenters, a meal man, and a blacksmith.

How these people thought of themselves, and how the community saw them, is a very

³² Shaw-Taylor, ‘Family farms’ pp. 160–74.

³³ Reed, ‘Gnawing it out’.

³⁴ ‘Kirdford’, *Kelly’s Directory of Sussex 1851*, (1852).

³⁵ Reed, ‘Social and economic relations’, p. 42.

difficult question, but an answer is suggested by moving briefly out of the south. In the north of England, lead mining was instrumental in the survival of small farms in the upland communities of the northern Pennines. Richard Heath met such a man of multi-occupation near Reeth in Swaledale in the early 1870s: 'he worked in the mine in his own time, and spoke well of the masters ... In addition to his earnings in the mine he farmed three acres, on which he kept a cow – selling the milk for a penny a pint, and sometimes "kearning a bit"'.³⁶ Further north, in Allendale, lead mining, occasional coal mining, small farming and 18,000 acres of stunted moorland created a series of communities up the dale. Mr J. H. Reed, interviewed by the Northumberland Record Office, was born on High Sinderhope Farm. His father is described in the 1901 census as a 'farmer (lead miner)'. According to his son, he took the small farm at High Sinderhope in 1897:

... and he was also working in the lead mines and that went on for a number of years, and then he moved and went to a larger farm ... the idea was in them days to collect a little bit of stuff together, then a bit more and then try and get a bit bigger farm, that the way they stepped up them days.³⁷

The 1910 'land tax' survey shows that Mathew Reed had moved from High Sinderhope to Sipton Shield, a farm of 48 acres.³⁸ However, he also had rights of common on Allendale Common: 'when you put sheep on the fell you had so many stints, you could put five sheep to the stint, to graze the fell ... and you could rent stints'.³⁹ The desire to get a farm and move on up 'the farming ladder' remained even when these men were far from the land. There is a lot of the Irish peasant in the account of Mr Armstrong, also interviewed by the Northumberland Record Office, remembering his father and his father's uncles:

[In the 1880s] ... some [of the family] went to the Consett District, and others followed the pits down on Tyneside ... I knew two or three that went to Newcastle ... My father went into the pit at Ryton, he was five or six years there, then he came back on the farm. 'Course he was breed on the farm and he came back to it.⁴⁰

Nor was it only men. As in Wales, women worked and held the land, while sons worked in the mines. The schedules that accompany the 1910 'land tax' survey show many women holding small farms in Allendale.⁴¹

How other villagers saw these men and women is more difficult still. There certainly seems to have been no consciousness of a peasant class, and the distinctions between small farmer and labourer and, especially, farm servant were not always clear. De Laverigne noticed that, in the Weald, which he described as 'perhaps the most backward part of the whole of England in point of agriculture', there was little or no difference between the small farmers and labourers, both being 'as ignorant as they are poor'.⁴² A decade later, it was written of the Norfolk small

³⁶ R. Heath, *The English peasant* (new edn, 1978), p. 95.

³⁷ NRO, T/132, interview, Mr J. Reed.

³⁸ NRO, Maps CVIII 11 and 14; NRO, 2000/8, schedules.

³⁹ NRO, T/132, interview, Mr J. Reed.

⁴⁰ NRO, T/30, acc. no. 1034, interview, Mr. J. R. Armstrong.

⁴¹ NRO, 2000/8, schedules.

⁴² de Laverigne, *Rural economy*, pp. 202–3.

farmer that 'the life of a small holder is infinitely harder than that of a labourer'.⁴³ Also, in terms of their physical surroundings, there could be little difference in real terms between the labourers and the small farmers, although even small farms tended to be separate and surrounded by some land, no matter how little.

This closeness is revealed by shifts between this group of small farmers and farmer-tradesmen. Many of them were transient, holding land for a short time, and Reed's study of Lodsworth shows that the number and influence of these men and women fluctuated, possibly declining towards the end of the nineteenth century. Only very detailed family reconstitution work at parish level could show movement in and out of this group but scrutiny of uncommon surnames in Kirdford suggests that members of the same family could hold different social positions over time. For example, the Enticknap family included, in the years 1850–1900, a blacksmith, a shoemaker, a farm labourer and a small farmer.

They also moved in and out of the conventional labour market at different times of year and different times of their life cycle. This was done to pay the rent, get a small amount of capital or simply survive a hard season. The small farmers and commoners of Ashdown Forest, interviewed in 1878, show many of these short-term migrations as well as the more normal movements within agriculture. James Wheatley 'worked on the Brighton Railway about 2 years. Then returned home'; William Young lived on the Forest all his life, 'except about seven years from about 17 to 24 when I was in Woolwich Arsenal coming home every few months'; while Michael Maynard 'went brick making in the summer and hoop shaving in the winter for four years. During this time I was backward and forward'.⁴⁴ In Surrey, as late as the 1900s, George Sturt's 'commoners' made their way every year to Sussex to work on the harvest and provide cash to support their tiny holdings.⁴⁵ In Kirdford in the 'hot, dry, summer of 1893', the 'commoners', as they we called, found that there was no casual work to be had locally and tramped through Hampshire looking for work. One, remembered by his daughter, ended up in Southampton Docks, returning with 'money to stock up and buy clothes'.⁴⁶

This brings us to my final area – that of the relationship to the market. There can be no doubt that, in the nineteenth century, English agriculture was capitalist and that most sectors of it were in some way producing for the market. At the level of the small farmer and farmer-tradesman, however, this does not mean that market forces were the main or only determinant of economic behaviour. Nor, as Reed argues, does it *necessarily* mean that they were always overwhelmingly entrepreneurial in their attitudes. A key element here, again, was 'family':

Unlike capitalist producers who sought to maximise the return on capital invested, household producers were preoccupied with the interest of family rather than the individual. They concerned themselves more with family needs and neighbourhood obligations than with profits from trade.⁴⁷

⁴³ BPP, 1895 C7915. Royal Commission on Agriculture, England, report by Mr R. Henry Rew on the County of Norfolk.

⁴⁴ East Sussex Record Office, 'Raper Transcripts'.

⁴⁵ G. Sturt, *The Bettesworth book* (new edn, 1978), ch. VI.

⁴⁶ Quoted in J. Austin, *Kirdford. The old parish discovered* (1995), p. 194.

⁴⁷ Reed, 'Gnawing it out'. This argument is developed in M. Reed and R. Wells (eds), *Class, conflict and protest in the English countryside, 1700–1880* (1990).

Hall makes a precisely similar point in relation to Lincolnshire: 'the peasant's concern is not accumulation of capital, or business expansion, but preservation of the household economy'.⁴⁸ The point is again generalized by Shannin:

Peasants are involved in daily exchange of goods and in labour markets. Their economic action is, however, closely interwoven with family relations. Family division of labour and the consumption needs of the family give rise to particular strategies of survival and use of resources. The family farm operates as the major unit of peasant property, production, consumption, welfare, social reproduction, identity, prestige, sociability and welfare.⁴⁹

For example, the non-market relationships between equals that made up a good deal of work and payment for small farmers and farmer-tradesmen, were enshrined both in 'informal' agreements of the kind Reed calls 'gnawing it out' and in more formal obligations. Many household producers exchanged the produce of their small farms with one another, creating bonds of mutuality, as we saw above in relation to women's roles. Exchanges of this kind could become formal, especially where work was exchanged or shared. Reed's work on the accounts of the small Sussex farmer and tradesman, Philip Rapson of Lodsworth, shows his 'books' to be full of detailed and complex listings and 'reckonings' of rent, labour debt, and credit extended to social equals and inferiors.⁵⁰ Similarly, records of a 139-acre farm in Devon show how smaller farmers from the neighbourhood incurred debts of seed, cheese and cider, and 'borrowed' workers and machinery from the larger farm at threshing and harvest. Those of a much larger farm in East Sussex show similar reckoning up to the 1880s. In both these cases, in return, the smaller farmers worked for the larger farmer at busy times of the year. All these charges are carefully recorded in the farm accounts.⁵¹ George Bourne saw in this the remnants of what he called the 'peasant system' in Surrey as late as the 1900s:

These old people, fortunate in the possession of their own cottages and a little land, were keepers of pigs and donkeys, and even a few cows. They kept bees too; they made wine; they often paid in kind for any services that neighbours did for them; and with the food they could grow, and the firing they could obtain from the woods and the heath, their living was half provided for.⁵²

These kinds of arrangement constantly open up 'European' questions. The labour contract between the peasant farmer and the landlord, sharecropping, payment in kind and labour debt are supposed not to have existed in England, but they seem to have done so. Reed's account of Phillip Rapson of Lodsworth shows sharecropping practised widely in the Weald of the 1840s, enabling a man who had virtually no land of his own to keep cattle, sheep, and pigs, as well to plant vegetables in small parts of other men's fields.⁵³ Cow keeping, at its most basic a form of sharecropping, was a highly regularized system by the 1890s, with contracts

⁴⁸ Hall, *Fenland worker-peasants*, p. 19.

⁴⁹ Shannin, *Peasants*, pp. 3–4.

⁵⁰ Reed, 'Social and economic relations', pp. 58 ff.

⁵¹ Devon Record Office, Exeter, DRO 337 B Add 2 SS1, records of Whitwell Farm, Luppitt; East Sussex

Record Office, records of an unknown (400 acre) farm near Bexhill.

⁵² G. Bourne, *Change in the village* (new edn, 1984), p. 76.

⁵³ Reed, 'Social and economic relations', pp. 33 ff.

signed and sealed. It remained an important part of Devon agriculture until the Great War.⁵⁴ The records of Slatter Farm, a 300-acre farm near Billingshurst in West Sussex, show complex arrangements of labour debt and payment in kind between the woman farmer and a number of local small farmers and tradesmen.⁵⁵

So were these men and women ‘peasants’ and was there a ‘peasantry’ in nineteenth-century England? We can say that there was a large number of small farms worked almost entirely by family labour throughout the nineteenth-century English countryside. We can say that these units existed both to support the family and work within the market. As the 1895 Report on Agriculture wrote of the Norfolk small farmer:

That the life of an occupier of 20 or 30 acres is one of ceaseless and unremitting toil is evident. They live, however, with their families, mainly on the produce of their holdings, and if they can manage to sell enough to pay rent and taxes, they can struggle on. The fall of prices to them means perhaps some lowering of their modest standard of comfort, but it does not affect the actual sustenance of the family. They consume so much produce of the land, and whether the market price of this is high or low makes little difference.⁵⁶

To pay their rents and taxes they moved in and out of the market for labour and for capital. They took many jobs and followed many trades, refusing the specialization, socialization and division of labour demanded by agrarian capital. So these peasant farmers and peasant workers stood in a symbiotic relationship to agrarian capitalism.⁵⁷ They were separate from it in many of their work and cultural practices and, formally, they neither exploited the labour power of others (outside the family) nor were they in turn regularly exploited. Yet they were dependent – during part of their life cycle or at different times of the year – on the capitalist market and the capitalist employment structure, for both money wages and a range of goods and services. They existed both as ‘farmers’ and as workers and were clearly very different from the classic ‘rural proletariat’.

But, again – were these men and women peasants? To conclude, I will introduce a completely unscientific personal recollection, which I hope is appropriate for this publication. For eleven years, from 1994 to 2005, I spent part of each year in the *département* of the Orne, in Normandy. It was (and is) an entirely agricultural area dominated by small and poor farms. My neighbours there presented an interesting comparison with the men and women of this chapter. M. Glauchard, my nearest neighbour (sadly now dead), farmed about 14 hectares. He grew apples and made cider and calvados; reared beef cattle, which he sold; grew hay, which he also sold; and kept sheep, chickens, ducks, and rabbits for household consumption. These, like the cider and calvados, were also frequently bartered. He also drove a lorry and was a carpenter. M. Lenhay, a slightly larger farmer, kept dairy cattle, produced milk and butter (though most of the milk was sold), and grew some maize. He was also a roofer and

⁵⁴ The Devon Record Office at Exeter has many such contracts. See also BPP, 1881, C3096. Royal Commission on the Distressed State of the Agricultural Interest, pp. 729 ff.

⁵⁵ West Sussex Record Office, Add. Ms 31584, Farm

Accounts, Billingshurst.

⁵⁶ BPP, 1881, C3096. Royal Commission ... Norfolk, p. 38.

⁵⁷ This point is well made by Hall in relation to Lincolnshire.

builder. M. Toutain, a younger man, had about 20 hectares. He kept cattle and produced apples commercially for cider and calvados. In the last five years, he has adapted to change and now breeds horses on a small scale. He also works for the local agricultural co-operative, repairing their lorries and machinery. All these men relied on family labour, as did even larger farmers like M. Potier and M. Graindorge. Inside this community there was practically no cash. Jobs were done and paid for by labour or by goods. The rent of the tiny field I owned (1.8 hectares) was paid for in cider or calvados. House repairs were paid for by labour in return. Machinery was loaned for particular jobs and among the smallest farmers. André Glauchard and Raymond Toutain, for example, making hay and harvesting small crops of maize with the aid of larger farmers, who were sometimes family but more often just neighbours. I feel, in an unscientific way, that if these men and women were and are 'peasants', so too were their nineteenth-century English equivalents.

Métayage, farm productivity, and the money economy: some lessons from farm account analysis*

by Annie Antoine

This chapter challenges the idea that French agriculture in the eighteenth and nineteenth centuries was fundamentally different from English agriculture, and that it was condemned to underperform because of its different social structure. It is not English historians we have to blame for tarring French agriculture with this poor reputation, for it was the physiocrats who first enunciated it and their views were then adopted and disseminated by French rural historians.

According to this long-established perception, the causes of the divergence between French and English agriculture lay in the structure of landed property and of farming. While English farming typically took place in a context of large landlords administering their estates and tenant farmers who farmed them, French farming was in the hands of peasant proprietors who lived on small family farms where they employed primitive methods and were satisfied with achieving self-sufficiency. I do not wish to question the English stereotype, but will show that this idea of the French agrarian system is only partly true. French peasants were not all landowners, but neither were all farms owner-occupied.

French historians are agreed that on the eve of the Revolution, peasants were in possession of 40 per cent of the land overall, but with considerable regional variation.¹ For this reason, eighteenth-century France is often considered to be a land of small landowners. This is true in so far as where peasants were landowners, they usually owned only very small and fragmented plots. The 40 per cent of the land owned by the peasants was therefore split between very large

* Translated by John Broad. Throughout this chapter French terms are used for the share farming arrangements that have no precise English equivalent. *Métayage* denotes the contract between landowner and farmer; *métairie* is used to denote the farm for which this is the tenurial arrangement, but in the west of France was confusingly also a common term for a farm whether or not held on such an arrangement; *métayer* is used for the farmer working the land under such a contract. The author's research funding reference is CERHIO, UMR CNRS 6558.

¹ G. Béaur, *Histoire agraire de la France au XVIII^e siècle. Inerties et changements dans les campagnes françaises de 1715 à 1815* (2000), pp. 25–30.

numbers of individuals. But it is also likely that it was only in wine-producing districts that small units of peasant ownership went hand-in-hand with small-scale peasant production by the owner. While French historians have done much research to establish the share of the land in peasant ownership on the eve of the Revolution, they have done much less work on the proportion of peasants who owned land, and particularly on the percentage of those who were owner-occupiers. The sixty per cent of the land area owned by the bourgeoisie, clergy, and nobility was held in a quite different way. Here the land was not fragmented but held in the form of leasehold farms.

There certainly were many small landowners in France, but we should nevertheless recognize that, except perhaps in wine-growing areas, the majority of farming enterprises were tenanted farms. Tenancies were of two broad kinds: leases which paid fixed money rents, and *métayage*, where the crop itself was divided between landlord and tenant. The reality was far more complex, with every kind of mixed and intermediate system in use. Nationally, leases dominated, and undoubtedly the most prosperous farmers in pre-revolutionary France, those of the Île-de-France, were leaseholders.² There were also large numbers of leaseholders paying cash rents who were much poorer than those of the Paris region. At the opposite end of the scale there were farms held under tenurial conditions that appear onerous and limiting, such as *métayage*, but which nevertheless performed well. It is these farms that are the subject of this chapter.

Métayage is a means of apportioning profits that requires close landlord involvement in the administration and management of the farm. For this reason, the regions with significant numbers of *métayers* are also those regions where landlords' farming accounts survive more commonly than elsewhere. Analysis of one particular case study helps explain the practical workings of a farm held by *métayage* in the Maine region in the first half of the eighteenth century. Findings from the case study will then be used to modify existing general views of the social and economic significance of *métayage* in eighteenth- and nineteenth-century France.

I

Pierre Duchemin du Tertre (1691–1755) was a cloth merchant in Laval. He also held public office, notably as Treasurer of the Poor House in Laval. He wrote much, and kept voluminous accounts, including a large number of accounts covering *métayage* enterprises: those he owned himself, those he rented on leases but then sublet on *métayage* contracts, and the accounts for the Laval Poor House. He has also left us masses of commercial accounts.³ On 22 April 1718 Duchemin purchased from his mother, Anne Gigault, demesne lands at Châtelier in the parish of Vaiges, some 20 kilometres east of the town of Laval, 'stocked with seeded land and livestock, and with a furnished manor house', for some 14,500 *livres*.⁴ In a stock inventory

² J.-M. Moriceau, *Les fermiers de l'Île-de-France. L'ascension d'un patronat agricole, XV^e–XVIII^e siècles* (1992; new edn, 1994).

³ Published in A. Antoine (ed.), *Les comptes ordinaires de Pierre Duchemin du Tertre, marchand*

de toile et seigneur dans la première moitié du XVIII^e siècle (1998). The data in the first part of this chapter is derived from this volume unless otherwise indicated.

⁴ Today, Vaiges is a commune in the *département* of Mayenne.



FIGURE 5.1. The *métairie* of Châtelier (Mayenne) in 1998.

Photography: A. Antoine.

drawn up in 1719, he reckoned these lands were worth 20,000 *livres*. To judge by the repairs he proceeded to undertake, the three *métairies* lying on the estate (Le Châtelier, La Massuardière and L'Homelet) were not in good condition when he bought them.

The 'manor house' at Châtelier was a substantial building as may be seen in Figure 5.1. It was made up of an entry hall, a kitchen and washhouse, an underground cellar, two upper chambers, and a study with an attic above. At one end of this house was another building comprising a large room with a cellar beneath, a stable with a grain store above it, latrines, and a pigsty. Beside it was a garden 'enclosed with hedges and ditched'. This complex all lay around a courtyard secured by a gatehouse.

The three *métayage* enterprises, Le Châtelier, La Massuardière and L'Homelet, together made up the demesne of the small manor of Châtelier, which took its name from the largest of the farms. Around this demesne stretched a manorial jurisdiction that cannot have been more than 500 hectares (1250 acres) in extent and which made Châtelier one of the smallest manorial estates in the Bas-Maine. The *métairies* took up just over 100 hectares (250 acres): 51 hectares for Le Châtelier, (24 plots and a garden, with 43 hectares of arable and 8 hectares of meadow); 27 hectares for La Massuardière (16 plots and garden land, with 23 hectares of arable and 4 hectares of meadow) and 27 hectares for L'Homelet (18 plots and a garden with 21 hectares of arable and 6 hectares of meadow). All three farming units were *métayage* enterprises.⁵

⁵ The lease to halves, or *métayage* contract, is often called '*bail à colonie partiaire*' and the *métayer* called a '*colon*' in Mayenne.

Châtelier avendu a chemie une sache
pour 36^{es} p^{es} ay veau pour manoir la
ferme de 18^{es} :

Le 23^e d'août 1728 j'ai mesuré au
Châtelier j'ai alevé des semences de
froment rouge 28 vel
de mouton 22
de mouton 14
64 vel

J'ai eu de froment 35 vel
de mouton 120
de mouton 23
d'orge 17
j'y ai aussi 11 vel de jachées de
semences qu'il en alevé fournie
j'y ai aussi 11 vel de jachées, mais j'y
mêle a demandé 11 vel de jachées
en la place 11 vel d'orge qu'on a pris
sur le mouton cornu cy 11
d'avoine 10

J'ai 18 Chargé 216 vel
j'ai eu le bétail de la ferme
j'ai alevé 22 vel de rentes ainsi j'y
me d'adde 3 vel

FIGURE 5.2. Extract from the accounts between Pierre Duchemin and the colon at Châtelier (1728–36).

Source: Archives départementales de la Mayenne, Fonds Duchemin 34 J 5.

Duchemin was a cloth merchant who applied the same rules to his business, his personal expenditure, and agricultural enterprises. Everything was recorded. Balance sheets were calculated to establish income, expenditure and profit. Several of his ledgers give details of the manor of Le Châtelier, and specifically the *métairie* of the same name (Figure 5.2).⁶ They make it possible to assess the income from the property and reconstruct the farming activities reasonably precisely. The income from Châtelier was largely composed of the landowner's share of the produce of the three enterprises in *métayage*. There were also a few small feudal dues which in this context are unimportant. The landlord's expenditure was of two kinds: his share of the costs of the share-cropping business, and improvements and major repair of the farm and its buildings.

⁶ These documents are preserved in the Archives départementales de la Mayenne: Livre journal de la Terre du Châtelier (1717–33 and 1746–54), Fonds Duchemin 34 J 5; Revenus du Châtelier, comptes faits entre Pierre Duchemin et le colon du Châtelier (1728–36), Fonds Duchemin 34 J 5; Mémoire du revenu annuel de ma terre du Châtelier en Vaiges et au dos du présent livre sont les remarques faites à cette occasion (1733–43), Chartier de Villiers, 242 J 14; Comptes de la métairie de la Chopinière (Bonchamp) (1747–54), Fonds Duchemin 72 J 5.

The income from the three *métairies* for the period 1718–43, with deductions for running expenses but not for major repairs, amounted on average to 620 *livres* a year for Le Châtelier, 410 *livres* for La Massuardière, and 160 *livres* for L'Homelet, in all almost 1200 *livres* a year. The manorial dues, by contrast, were worth about 100 *livres* a year.

Annual expenditure for the combined lands was on average 286 *livres* from 1718–33 and 144 *livres* for 1746–54. Most of this came under three headings: repairs to buildings made up 49 per cent in the first period, 35 per cent in the second; extraordinary agricultural work such as the construction of fences or the bringing into cultivation of fields made up 9 per cent in the first period and 17.5 per cent in the second; money spent on 'journeys' around the Vaiges estates made up 13.5 per cent in the early period, but 44 per cent later. At first, Duchemin invested in improvements on his estates, while in the later years of his life much more of his expenditure went on what might be called leisure (mainly on food). Duchemin increasingly treated his estate at Châtelier as a country retreat. On average he visited it six times a year, spending a total of about a month a year in the country. On two or three occasions members of his family would accompany him. In the early years he went more frequently on short visits to supervise works and improvements. After 1745 he spent longer periods in the country with his family, in spring and particularly early autumn (late August to early October). His periods there also help us understand how he kept his accounts. He made a comprehensive list of all his expenditure, but did not differentiate between repair works on the buildings, the wages of day labourers repairing fences, payments to neighbours helping to set up a day's shooting party or the costs of his wife's jam making.

Pierre Duchemin drew up an annual summary of expenditure for the whole of his estate, the three *métairies* and the manorial rights. This matches the figures in the individual ledgers perfectly. For the period 1718–37, what he called his '*revenant-bon*' ('good return') and what we would describe as profit, came to 20,530 *livres*, averaging 1026 *livres* a year, after deducting his investment in the enterprise and building maintenance. In twenty years Duchemin received in income what he had paid for the land.

II

As well as the accounts for the whole property, Duchemin has left us another document of great interest: a ledger containing his accounts with the *métayer* of Châtelier for the years 1728–36.⁷ This document differs from the usual farm accounts from regions of *métayage*, which normally include only that part of the crop harvest and animal produce that was due to the landowner. In this account, everything is itemized: the total volume of the harvest; deductions to pay rent charges and manorial dues on the 'common stock'; seed held back for sowing, purchases and sales of livestock; loans to the *métayer*; and the deliveries to the owner's town house at Laval of cooked or raw fruit, of *pommé*,⁸ and of sweet chestnuts. In fact, this is not so much a set of

⁷ Comptes faits entre Pierre Duchemin et le colon du Châtelier (1728–36), Archives départementales de la Mayenne, Fonds Duchemin 34 J 5. These accounts are published in full in the edition mentioned above.

⁸ *Pommé* is a kind of jam made with apples that is cooked over a gentle heat for a very long time and becomes very concentrated.

accounts as a notebook in which Duchemin notes every transaction in which his *métayer* is involved. The great interest in this document lies in how it allows us to view a working farm on an almost daily basis, enabling us to read from it the fine detail of the relationship between the landowner and his share-cropping tenant or *colon* (the local phrase for a *métayer*). In strictly accounting terms, the document is less exact than the ledgers in which Duchemin noted down and quantified his landowner's share, but it offers the opportunity to reconstruct the farming activities of the partnership.

As we have noted, the *métairie* at Châtelier was made up of 25 fields, which we were probably all hedged. The total area of just over 50 hectares (125 acres) meant that it was a large farm, for the mean size of a *métairie* was normally between 20 and 30 hectares (50–75 acres). The farm was held by a lease to halves (that is, *bail à moitié*, *contrat de métayage*), evidence that Duchemin did not think this type of tenancy was either old-fashioned or unproductive. Such leases were nominally for nine years, but easily renewable, and often passed from father to son, or son-in-law, but there was also an active market in *métairies*. Larger farms of 20–40 hectares (50–100 acres) were much in demand and leases were sometimes signed a year or more in advance. The *métayer* had a garden planted with cabbages to feed to his cattle in winter, and a great number of fields, some under the plough, some fallow, or laid to grass, while others were planted with fruit trees or sweet chestnuts; the smallest fields were half a hectare in size (1.25 acres), the largest, two or three hectares (5–7.5 acres). The farm also included eight hectares (20 acres) of meadow, about fifteen per cent of the area: there were three such fields, the largest of which was exceptionally large, at about 4 hectares (10 acres). The farm buildings lay besides the 'manor house'. There were two rooms on the ground floor; storage lofts above; barns and stabling for the beef cattle, cows and ewes; three pigsties; and a small building containing a cider press.

At Châtelier the *colon* was Jean Mansais. His name appeared only rarely in Duchemin's jottings, since – as with the other *métayers* of La Massuardière and L'Homelet, La Motte, Mouette, Grasselinières, and so on – the *métayer* took the name of his farm and we follow this practice here. Châtelier's was a classic lease to halves. Besides the land and buildings, Duchemin provided his *métayer* with all the livestock, for which an inventory (*une prisee*) was made at the point of entry. The cost of seed was evenly divided between landowner and *métayer*, having been pre-emptively set aside from the 'common stock' at harvest, or bought in later. Two-thirds of the cost of purchases of fertilizer (*cherré*⁹) was paid by the landlord. Finally the landlord also paid the wages of a farm servant to the tune of 20 *livres* a year. The farmer paid for minor repairs costing just a few *livres* a year, but building upkeep was entirely the landowner's responsibility. When building works were taking place, the farmer had to provide food for the day labourers, and assist by carrying building materials. The 50:50 division applied to everything produced on the farm. In the case of cereal crops, fruit, flax and hemp, the landowner took his share in kind. The profits of the livestock enterprise were taken in cash. The half share rule also applied to all the running costs of the enterprise: the purchase of stock, veterinary remedies for cows and bullocks, purchase of additional fodder

⁹ The term *cherré* was used for the ashes used by the cloth bleachers in Laval, which were then sold on to farmers to use as fertilizer and to lighten soil texture.

or oats if what was produced on the farm was unable to feed the animals through the winter. Accidental losses, such as the death of an animal, were also split. Châtelier also had to provide some 'subsidies' – a lamb at Easter, a bushel of girdle-cake (*fugasse*) on the day when harvest was divided, as well as the manorial dues for the *métayage* (the *rentes*) which came to 3 *livres* 6 *sols* and 6 *deniers*.

Even without stock inventories, it is possible to gauge livestock numbers on the farm: 30 or 40 sheep, a boar and three or four sows, a horse and a foal, four to six cows, one or two heifers, six to eight bullocks and oxen, to which we should add their young each summer: 15–20 lambs, four piglets for fattening, four to six calves. Typically for the Bas-Maine, cattle had an important place on the farm, particularly on the larger farms of 50 hectares and more. In value terms, the product of the farm at Châtelier was divided between cereals (49 per cent), livestock (33 per cent) and 'other' products including fruit, textile plants, and chestnuts (18 per cent).

Pierre Duchemin's accounts outline the rhythm of farming activities, changing cash flow, and deliveries of farm products to Laval. Early autumn was the point when the cereal harvest was divided, and when Duchemin travelled to Châtelier ('I've measured at Châtelier'): the buckwheat, which was not harvested until mid-October, was also divided, but Duchemin did not always travel to supervise this personally. As autumn progressed, deliveries of fresh and cooked fruits, cider and chestnuts were made to Laval. In November, the division of pigs took place: Pierre Duchemin had one or two sent to Laval where he fattened them, either for sale, or for salting down in early January. The sheep were sold between October and March: Duchemin added them to the accounts at the point at which he received his share of the wool. The oxen and young bullocks were normally sold or exchanged between April and August.¹⁰

These documents also show how the work of managing the farm was split between the landowner and the *métayer*. Pierre Duchemin was always present at the division of the summer-harvested cereals (wheat, rye, barley and oats) but not always when the buckwheat was divided. He often took part in the division of wool in June, when he also took stock of the number of ewes and lambs on the farm, and at the division of pigs in November. But these were not his only journeys to the farm.

All the livestock dealing – purchases, sales, and exchanges – was undertaken by the *métayer* unsupervised. We cannot be completely certain from the documents whether decisions about livestock were taken jointly or unilaterally, or after a discussion, but it was that farmer who executed all livestock transactions. Duchemin does not seem to have attended livestock fairs. Although the livestock was provided by the landowner, it is always described as if belonging to the *métayer*: 'Châtelier has lost a mare, which died, and the wolf has eaten two of his sheep' (1730); 'Châtelier has sold his old mare for 25 *livres*, and owes me half of that' (1731); 'Châtelier has lost his best bullock' (1731) – in fact the loss was divided between the two men. It is also Châtelier who seems to have taken the initiative in the decision to plant Moscow flax seed in 1728, although Duchemin contributed half the cost. The farmer also made all the purchases of fertilizer (*cherré*) and probably had complete freedom to choose his suppliers. In some instances it is fairly clear that he took the initiative in making a purchase for which

¹⁰ For the seasonality of livestock sales, A. Antoine, 'Les bovins de la Mayenne (1720–1820). Un modèle économique pour les campagnes de l'Ouest?', *Histoire et Sociétés Rurales* 4 (1995), pp. 105–36.

Duchemin later decided to split the cost, such as manure purchases, work on hedges, or on soil preparation. Châtelier sold fruit and cider produced on the farm just as often as Duchemin, and when the market closed, whichever of them had made the sales, the profit was always split 50:50. Lastly, Châtelier the *métayer* acted as intermediary in paying the day labourers working on the farm, and was paid substantial sums for this purpose. Looking at the overall pattern of Châtelier's payments, we can see that the *métayer* on this kind of farm had significant cash sums in hand to disburse, whether on his own account, or for his landowner.

III

We now need to put this case study into a wider context, first by trying to estimate how widespread *métayage* was in quantitative terms, then by addressing the closely linked question of how such *métayage* contracts were perceived, first by contemporaries, then by historians. Then we will use that understanding to contextualize the case study.

How prevalent was *métayage* in France? No statistical sources have survived with good data on the national or even regional importance of *métayage* before the second half of the nineteenth century. Even these can only be used with caution.¹¹ The reality of *métayage* is difficult to make generalizations about, and there are possible errors of every kind, which derive partly, on the one hand, because we cannot take into account the many verbal agreements which we know existed, and on the other hand because statistical enquiries frequently confuse a *métairie* (the farm itself) with *métayage* (the means of accounting between farmer and landowner) just as elsewhere they confuse farms and tenancies. The figures derived from these statistical enquiries, as much as those drawn up from ledger entries, are bound to be sprinkled with errors.

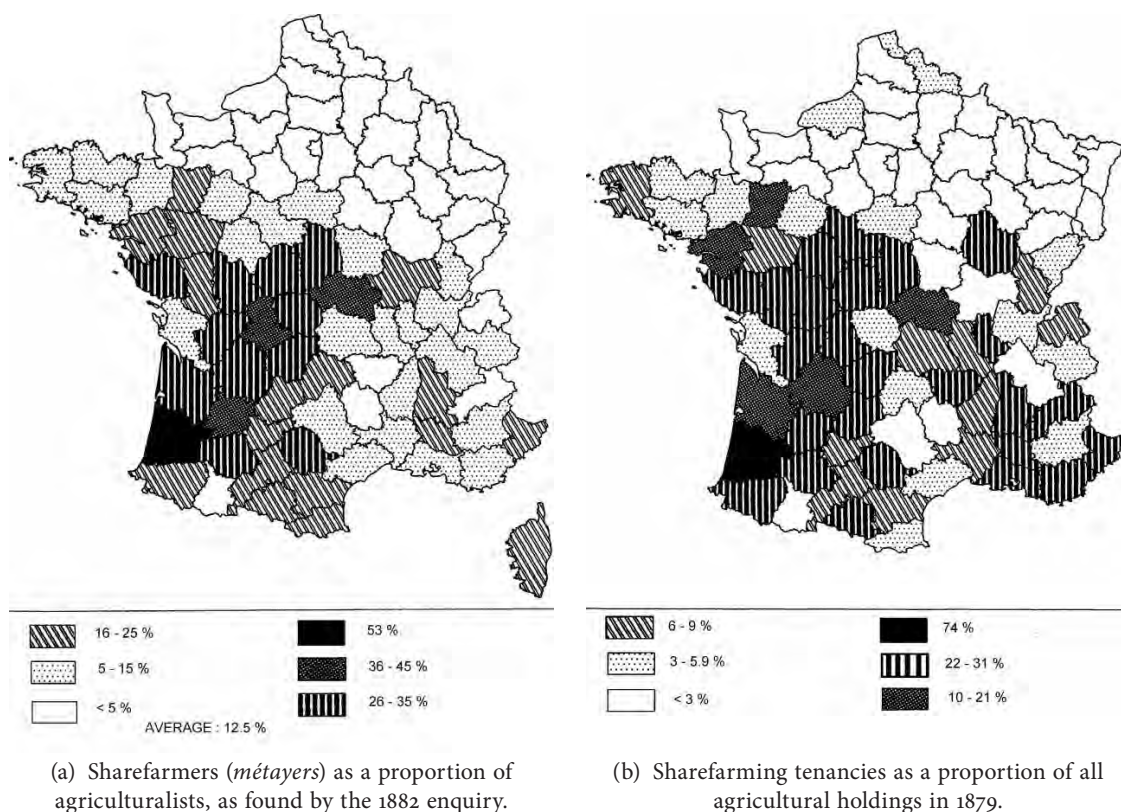
The 1851 enquiry was the first to provide statistical coverage of the whole country, but does not seem to be reliable on *métayage*.¹² On the other hand, the report into the nature of *métayage* produced by the French Agricultural Society (*Société des Agriculteurs de France*) in 1879 at the instigation of the Comte de Tourdonnet is much better.¹³ This employed a very precise questionnaire, answered for each *département*, and it is clear that what is described as *métayage* there is the way of accounting, and not the type of farm. At a national level, the enquiry shows that of tenant farms (that is to say 30 per cent of all farms), 38.5 per cent were held in *métayage*, and 61.5 per cent on money-rent leases. In terms of land area, *métayage* took 36 per cent, and leases 64 per cent. These figures may be inflated, since Tourdonnet's aim in setting up the enquiry was to show the superiority of *métayage* over leasehold, but his respondents seem to have taken the work seriously. Their knowledge of local conditions (respondents were often landowners themselves) made it possible for them to take into account

¹¹ For more detail on these matters, A. Antoine, 'Les propriétaires fonciers: conservatisme ou modernité? L'exemple des contrats de métayage, XVIII^e–XIX^e siècles', in F. Pitou (ed.), *Élites et notables de l'Ouest, XVI^e–XX^e siècle. Entre conservatisme et modernité* (2003), pp. 165–92.

¹² M. Demonet, *Tableau de l'agriculture française au*

milieu du XIX^e siècle. L'enquête de 1852 (1990), p. 304.

¹³ Comte de Tourdonnet, *Situation du métayage en France, rapport sur l'enquête ouverte par la Société des agriculteurs de France, par M. le Comte de Tourdonnet* (1879–80). Tourdonnet was also the author of *Traité pratique du métayage* (1882).



Source: Chantal de Crisenoy, *Propriétaires, fermiers et métayers au XIX^e siècle. 1- Les Enquêtes décennales, mode d'emploi, 2- Les modes de faire-valoir en 1882* (INRA seminar paper, 1982).

Source: M. le Comte de Tourdonnet, *Situation du métayage en France, rapport sur l'enquête ouverte par la Société des agriculteurs de France* (1879–80).

FIGURE 5.3. Sharefarming in France at the end of the nineteenth century.

verbal contracts. Farms in *métayage* were almost absent from France north and east of a line from St. Malo to Geneva; they were particularly important in western France (excluding Brittany) and in the south west; they could also be found in the south east of the country – in Provence and the southern Alps (Figure 5.3a). The maps derived from another enquiry of 1882 showing *métayers* as a proportion of the farming population and of *métairies* as a proportion of agricultural land, confirm the importance of the system in the *départements* of west and south-west France (Figure 5.3b).¹⁴ The highest concentration, whichever method of calculation is used, was in the *département* of Landes in this period. In the *département* of Mayenne, in which the manor of Châtelier lay, lands in *métayage* covered about a fifth of the cultivated area in 1882, and *métayers* represented about one third of farmers.

We do not have equivalent sources for eighteenth-century France. Looking at the region

¹⁴ C. de Crisenoy, *Propriétaires, fermiers et métayers au XIX^e siècle. 1- Les Enquêtes décennales, mode d'emploi, 2- Les modes de faire-valoir en 1882* (INRA seminar paper, 1982).

around Laval in the Bas-Maine, an area where the phenomenon seems to have been important, 60 per cent of contracts were leases to halves as opposed to money leases, in the first half of the eighteenth century, but these proportions had been reversed by 1789.¹⁵ Taking the country as a whole, *métayage* seems to have been in long-term decline, indeed it had all but disappeared by the end of the Second World War. But decline was not a linear process, and included periods of revival as well as decline, while regional differences were considerable. In some regions, *métayage* seems to have increased in the course of the nineteenth century before declining later.

The 1879 enquiry confirms the scattered evidence from the eighteenth century that this type of contract is typically found in peripheral regions, which did not imitate the typical tenurial arrangements found in the dominant cereal-growing regions of the Paris basin. In several regions *métayage* went hand-in-hand with mixed grain and stock rearing farm types. This is evident in Mayenne, the Vendée, but also in such regions as Burgundy, Combraille, and Brionnais.¹⁶ In fact we may adduce this as a general rule. *Métayage* seems to have been particularly important in regions of 'petite culture' – mixed husbandry – as opposed to those practising the 'grande culture' of cereal monoculture. Historical studies have often passed a very negative judgement on these peripheral regions, and associated them with old-fashioned production techniques and impoverished farmers constrained socially and politically by the power of great landowners over 'their' *métayers*. One analysis of *métayage* links it to great estates with absentee landlords. This is the basic tenet of Paul Bois, for whom the west of France was a region of great estates managed by stewards who were harsher towards the *métayer* than their employers.¹⁷ However, the most prevalent view amongst historians is that which associates *métayage* with poverty and dependency. For Abel Poitrineau, the *métayer* in the Lower Auvergne is a 'poor devil' completely dependent on the landowner.¹⁸ His heavy indebtedness and the narrow constraints under which he farmed were a formidable brake on agricultural innovation.

This is a modern recycling of much older views. Since the time of the physiocrats, there has been an entrenched view that the peasant should ideally be an owner-occupier and therefore independent. It may be acceptable for him to be a tenant farmer paying a fixed rent without the landowner determining the way in which the land is farmed, but the situation of the *métayer* is unacceptable. The classic nineteenth-century ideological position was that the French Revolution gave the peasants the opportunity to gain access to land ownership. Owner-occupation was presented as a social, economic, and political victory for the French

¹⁵ A. Antoine, *Fiefs et villages du Bas-Maine au XVIII^e siècle* (1994), p. 352.

¹⁶ See, for example, L. Merle, *La métairie et l'évolution agraire de la Gâtine poitevine de la fin du moyen âge à la Révolution* (1958); C. Perronin, 'À partir des baux de métairies dans la région de Montaignut, en Combraille, au XVIII^e siècle', in *L'élevage et la vie pastorale dans les montagnes de l'Europe au moyen âge et à l'époque moderne* (1984), pp. 367–76; Serge Dontenwill, 'Les baux à mi-fruits en Roannais et Brionnais aux XVII^e et XVIII^e

siècles: une approche des conditions socio-économiques de la mise en valeur du sol sous l'ancien régime', in *Lyon et l'Europe: hommes et sociétés: mélanges d'histoire offerts à Richard Gascon* (2 vols, 1980), I, pp. 179–208.

¹⁷ P. Bois, *Paysans de l'Ouest. Des structures économiques et sociales aux options politiques depuis l'époque révolutionnaire dans la Sarthe* (1960; new edn, 1984).

¹⁸ A. Poitrineau, *La vie rurale en Basse-Auvergne au XVIII^e siècle (1726–89)* (2 vols, 1965).

peasantry. Some of the inaccuracies of the enquiries made during the second half of the nineteenth century, notably that of 1882, lay in the implicit wish of those making the returns to see the Revolution as the point at which the peasantry gained property rights, turning France into a nation of small landowners. This view was clearly articulated by Gambetta in 1872. 'It was the Revolution alone that made the peasant a landowner and citizen of France.'¹⁹

However, a quite contrary literature from the 1840s onwards developed a more optimistic view of *métayage*.²⁰ It was those nobles and great landowners who recovered their lands at the restoration of the monarchy who invented this positive model. They needed to do so because they wanted to re-establish pre-revolutionary social structures. Running through the conservative analysis of *métayage* is praise for a particular social and economic model combining traditional and modern elements. Traditional social structures embodying paternalism, a submissive peasantry, and élites composed of landowners, went hand-in-hand with modern economic structures and improved agriculture. The association of two apparently incompatible positions gave landowners control of the peasant vote. In western France throughout the nineteenth, and for much of the twentieth century, it allowed them to retain the status of lord of the manor that had belonged to their ancestors, and shore up their status as local leaders.

IV

There are then, two distinct discourses around *métayage*, one critical and the other supportive. They arose out of quite different ideas of rural social relations. *Métayage* was far more than simply a choice of tenure: it was symbolic of a particular set of economic and social relationships. We can re-examine the Châtelier case study to illustrate this.

The accounts kept by Duchemin illustrate the advantages of the system for the landowner. Not only was it profitable (income from the three farms covered the purchase cost of the estate in 20 years), but it also brought the satisfactions of landownership. We are undoubtedly using imaginative insights to interpret it thus, but we can imagine Duchemin writing up his ledgers, contentedly reflecting on his management of the three joint farming enterprises. He knew what went on at all three, and – although we cannot say whether he took decisions with his *colon*, or made them himself, or left them to the *métayers* – as the landowner he had a finger in everything and seems to have enjoyed his involvement. The estate also provided him with a second home, 20 kilometres away from his main residence in the town of Laval. He organized trips and country parties, even shooting parties during which he could play the part of lord of the manor. He invested significant sums to rebuild some of the fabric of the three farms, and he was perfectly prepared to supervise the workforce personally.

His family made ready use of fruit and vegetables from the garden, and his wife came to the country to make jam. For Duchemin du Tertre, ownership of these farms was the life-style choice of a gentleman farmer in western France. We know that it was commonplace for merchants and professionals in Laval to take leases of land and then sublet them as share farms, which suggests that Duchemin's activities were typical.²¹ In this way, urban

¹⁹ Cited by P. Barral, *Les agrariens français de Méline à Pisani* (1968), p. 37.

²⁰ Antoine, 'Les propriétaires fonciers', pp. 184–91.

²¹ Antoine, *Fiefs et villages*, p. 400 ff.

merchants and professionals could adopt the lifestyle of a landowner, splitting the cereal crop with the *métayer*, eating fresh garden produce, making trips to the estate, establishing long-term relationships involving both trust and interdependence. It was this pattern of life that nineteenth-century aristocrats pictured as their social ideal.

We know rather less about how it felt from the *métayer's* side. Should he be portrayed as a downtrodden poor devil, or rather as a happy tiller of the soil? We know what his share was of the proceeds of the enterprise – half or slightly less of the profits. This was made up partly in cash, from sales of livestock, and partly of cereal crops, but we do not know what proportion of those were sold, and what part consumed by the household. He also received an unknown income from minor products such as fruit, cider, textile plants, lesser livestock, and so on. He was able to support himself from the enterprise, pay his taxes on time, and live comfortably with his family from his endeavours. Could he also accumulate capital? This is a difficult question, and touches on the limitations of the system for the *métayer*. An important point to remember is that the *métayer* could only take profits from a single farm. This prevented him from expanding his enterprises and is a much more important brake on progress than the oft-quoted statement that the *métayer's* share of the profits was slightly less than the owner's.

On the other hand, the system of leases to halves provided the farmer with an easy entry point into farming. He needed to bring only his farm implements, and probate inventories suggest these were of no great value. The livestock was either shared to halves or paid for by the proprietor. The system had other advantages for the *métayer*: it limited how much of the crop the landowner took at harvest, provided the *métayer* with assistance in difficult times, or at least allowed him to benefit from small cash advances left in his hands when he sold his livestock. He brought his own labour and his wife's to the farm and perhaps also that of a resident farm servant, partly or wholly paid for by the landowner. It was therefore a system that perfectly fits the ideal of a family farm.

What was the social position of the *métayer*? Historians have often portrayed him as an impoverished figure, the most dependent of rural workers, because he owned neither land nor livestock in most cases, and had to provide very detailed accounts to a landowner who was always watching him. This is supposed to have prevented him from developing his agricultural techniques. However the accounts of the Châtelier enterprise and other documentary evidence suggest we should substantially modify such a view.

It was the largest farms, those with a single tenant, and carved out of the seigneurial demesne lands, which were most often held on *métayage* contracts.²² *Métayers* had a privileged place in the village hierarchy, with a plum place at the head of tax lists. For example, in the *taille* rolls for the parish of Vaiges in 1730, Châtelier was taxed at 92 *livres*, so ranked as one of the chief farmers in the parish: Jacques Berger, *métayer* at Ébaudière was also taxed at 92 *livres*; widow Mathurin, who, with her son's help, farmed Petit Rocher, paid 93 *livres*; Pierre Guillois, *métayer* at Haut Coyet paid 106 *livres*. The top half-dozen richest farmers in the parish were all *métayers*. In Poitou, Jacques Péret talks about the 'fiscal bludgeoning' of the *métayers*.²³

²² *Ibid.*, p.365: 'les métairies' (farms of 20 to 40 hectares) were more often held in *métayage* than 'les closieries' (farms of 5 to 10 hectares) in Mayenne in the

eighteenth century.

²³ J. Péret, *Les paysans de Gâtine au XVIII^e siècle* (1998).

Yes, they may have been more heavily taxed than village craftsmen, but they managed to pay significant amounts, proof that their farms provided them with a cash income. And amongst the farmers (presuming that they were all taxed on the same basis) it was always the *métayers* who paid the biggest proportion.

Finally, probate inventories suggest that *métayers* lived in relative comfort. Comparing the inventories of *métayers* and tenant farmers, we find the *métayers* with a smaller proportion of their wealth under the heading 'tools and livestock' because the landowner paid for all or part of the stock. To balance this, the *métayer* had a wider range of goods under the heading 'home furnishings', suggesting that he had a slightly higher level of comfort in his house (notably in terms of bedding). This finding is not specific to Mayenne, but was also found by Francis Brumont for the *métayers* of south-west France, and by Pierre Jarnoux in Finistère.²⁴

Métayers were able to achieve this accumulation of household goods precisely because they were not engaged in subsistence farming. Farms in the west of France were based on mixed farming with three production components: cereals, livestock rearing, and other products, essentially fruit and textile plants. Cereals were basic to this economy: they kept the farmer and his family in food (probably entirely so), but there is nothing to suggest that the *métayer* did not sometimes sell part of his share. Things were quite different with the other farm products, which were normally sold. This is particularly the case with livestock. Fattened pigs were eaten at home by both *métayer* and landowner, but surplus piglets were sold. It is true that on special occasions lamb or kid was eaten on the farm, but cattle, which represented the heaviest money investment, were always sold. We can see in this a form of specialization in the rural economy of *métayage*, which went far beyond the subsistence economy generally associated with this form of tenure.

Livestock transactions in the accounts show that commercial strategies were employed by the *métayer*, with or without the landowner's participation. A multitude of entries in Châtelier's accounts enable us to understand the commercial logic. During the nine years of surviving accounts, Châtelier sold animals on 62 occasions, on average seven times a year, and bought on 23 occasions, that is to say two or three times a year. Some of these sales were effectively exchanges, where a sale was immediately followed by a purchase. For instance, in 1730 Châtelier sold two oxen for 212 *livres* and bought two others for 126 *livres*; in 1731 he followed the same pattern: two oxen sold for 148 *livres* and two new ones bought for 114 *livres*. In 1733 a sick cow was sold for 45 *livres* and another cow bought for 35 *livres*. In 1735 the sale of a fat bullock for 39 *livres* was followed by the purchase of a young steer for 10 *livres*, and the sale of a fat bullock for 97 *livres*, was followed by the purchase of a two-year old bullock for 14 *livres*. These examples help us understand the strategies employed by a *métayer*: the principle is always to sell an older and buy a younger – and therefore lower-priced – animal while realizing some of the sale price as profit. This demonstrates two things very clearly: firstly that money circulated on a far greater scale than is shown by the profits divided between the proprietor and the *métayer*. Secondly, that the commercial strategies

²⁴ P. Jarnoux, 'Des paysans riches dans la France de l'Ouest sous l'ancien régime. Bilan et perspectives' and F. Brumont, 'Le métayer et son maître', both in A. Antoine (ed.), *Campagnes de l'Ouest, stratigraphies et relations sociales dans l'histoire* (1999), pp. 361–92.

set in place by the *métayer* were not based on raising the same animals for six or seven years before taking all the profit on the fat animal. Instead the *métayer* accumulated large profits through a regular turnover of stock, without having to wait until an animal was fully mature.

When seen from this perspective, the system of *métayage* clearly did not stand outside the cash economy.²⁵ Over the period 1728–36, the average annual revenue from the *métairie* of Châtelier was, as previously noted, around 1200 *livres*, of which around 580 *livres* went to the landowner, and much the same amount to the *métayer*. But these 1200 *livres* should not be regarded as the sole profit of the farm divided up at the end of the year between the landowner and his partner. Within this 1200 *livres* there were the various cereals, which were not necessarily turned into cash by the farmer, while all the ‘other’ crops – the flax, hemp, apples, pears, cider, and so on – produced by a *métayer* in a mixed farming district, and also the 320 *livres*, the profit element of dealing in livestock, were divided throughout the year between *métayer* and landowner after each transaction. The *métayer* received on average 160 *livres* a year in specie from livestock. But, even if we leave out of picture any other products he might sell from the cereal and ‘other’ crops, these 160 *livres* were far from being the only monetary transactions the *métayer* took part in.

These figures relate to a medium-size *métairie* in the first half of the eighteenth century. Figures extracted from slightly larger *métairies* in the second half of the century – farms with a total profit of 1200–1600 *livres* a year, in which the livestock component represented a slightly higher proportion of the enterprise than at Châtelier (25–35 per cent), but for which the accounts are insufficiently detailed to give a breakdown individual purchases and sales – suggest that the *métayer* might see considerably larger sums pass through his hands. As an example, in the final decades of the eighteenth century, the share farm at Vaujuas, had a total turnover of 2500 *livres*, of which 40 percent (1000 *livres*) was derived from livestock transactions. The *métayer* there may well have had considerably more than 1000 *livres* in his hands as a result of his dealings.²⁶ We may conclude that we can no longer consider the *métayer* to be a farmer who was not fully integrated into either the market or money economy. It really made no difference whether the farming business was based on rent in kind or money rent.

The final question relates to the ability of the *métayer* to adopt progressive farming methods. Studies of *métayage* contracts shows that the owner could insert any clauses he wished. He might require the tenant to sow a small amount of clover, to use a particular bull, to bring into cultivation some waste ground, or to spread a particular amount of manure. Owners evidently often seized the opportunity to do so. Moreover, a landowner who decided to let a holding as *métayage* – a system with heavy time overheads because he had to sell the part of his profits he received in kind – must have had a taste for involvement in farming, even if he did not run his own home farm. It seems hardly likely that his activities acted as a brake on innovations suggested by the *métayer*. On the contrary, a reading of Duchemin’s daybook shows that he

²⁵ A. Antoine, ‘La circulation de l’argent en pays de métayage’, in P. Minard and D. Woronoff (eds), *L’argent des campagnes. Échanges, monnaie, crédit dans la France rurale d’ancien régime* (2003), pp. 9–40.

²⁶ Antoine, *Fiefs et villages*, p. 317. This *métairie* was situated to the north-east of the Bas-Maine, in the township of Marcillé-la-Ville.

was particularly concerned with improving his farms. It may have been the landowner, rather than the *métayer*, who was driving agricultural progress.

The lease to halves is thus at the heart of particularly close social contact between landowners and farmers. We can be reasonably certain that this type of contract helped ensure the continuation of rural social structures that were later judged to be conservative, and characteristic of traditional society; but, on the other hand, it seems highly unlikely that they constituted an obstacle to agricultural progress. This was René Musset's view in the early twentieth century: 'we can still find this very distinctive trait in the farming life of the Bas-Maine: rapid agricultural progress but social conservatism'.²⁷ For Musset the unique feature of the Bas-Maine was that *métayage*, a farming system recognized as a social throwback, had survived and served as a springboard for the agricultural take-off of this region in the nineteenth century. It was a social framework within which landowners, 'because they had intelligence and capital', supported agricultural modernization much more effectively than they could have with fixed-rent leases, which allowed much less freedom to intervene.²⁸ Those nineteenth-century landowners who defended *métayage* were obviously conservatives, and their social conservatism was all the more effective (and acceptable) because it ran in parallel with progressive attitudes in the economic sphere during the decades of agricultural modernisation. On the other hand, during the century that followed, more general social changes inevitably left this system beyond the pale, because *métayage* remained associated with an old-fashioned way of life, rather than for any economic reason. We should be cautious about seeing share-cropping only through the eyes of the physiocrats and their successors.

V

In the end though, *metayage* seems more like English systems of tenancy than is usually allowed. The share-cropper was a substantial figure holding by lease. He was far from a subsistence farmer: rather, he engaged in a range of market-orientated activities. His relationship with his landlord, often seen to be disadvantageous to him and even humiliating, might work to his advantage, giving him access to capital and transferring some of the risk of the farm to the proprietor in poor years. The *métayer's* contract might allow a committed owner to press forwards with agricultural improvements by using covenants in exactly the way it is maintained that English landlords pressed agricultural rotations and improvements on their tenants. There are distinctions to be drawn between English leasehold practice and *métayage*: but it does not seem that one is all good, and the other all bad.

²⁷ R. Musset, *Le Bas-Maine. Étude géographique* (1917; new edn, 1978), p. 388.

²⁸ Remarques sur les modes de faire valoir dans

l'arrondissement de Château-Gontier, 1855, Archives départementales de la Mayenne, 7 M 96.

The demise of the yeoman, c.1750–1940

by Michael Turner

Land – whether in the sense of its ownership or its tenure – is no longer a major political issue in England.¹ It was a much more sensitive matter in the past and remains so for historians. In this chapter we consider the survival of forms of tenure – copyhold of inheritance, copyhold for lives or leases for three lives – which were not forms of tenancy as understood today. Copyhold of inheritance conferred on the tenant rights of inheritance and sale, while copyhold for lives and leases required the incoming tenant to pay a substantial fine or premium to purchase the lease but only a notional customary annual rent. Their abolition – whether by conversion to freehold or to tenancies at will at rack rents – posed a legal and political problem in the nineteenth and early twentieth century. We will show that these forms of tenure survived surprisingly late in surprisingly large numbers, much more than historians have previously allowed. On this occasion our concern is not to review the protracted attempts of government to eradicate these forms of tenancy but to establish how much land was held by these archaic tenures and the implication of our findings for our understanding of the agricultural revolution.

I

The land market and the agricultural sector of nineteenth-century England is usually characterized as capitalist. Farms were let to tenants at rents that more or less recognized the full economic value, and this was known as the rack rent. When land was sold, it was usual to base the purchase price on the current rack rent value at so many years purchase.² Farmers

¹ For a recent account, which mixes polemic with a serious attempt to collate what is known about modern landownership, K. Cahill, *Who owns Britain: the hidden facts behind landownership in the UK and Ireland* (2001). Some of the same issues were rehearsed in a television programme, *Whose Britain is it anyway?* This programme was reviewed in *The Times* (10 Jan. 2006), p. 10.

² C. Clay, 'The price of freehold land in the later seventeenth and eighteenth centuries, *EcHR* 27 (1974),

pp. 173–89; R. C. Allen, 'The price of freehold land and the interest rate in the seventeenth and eighteenth centuries', *EcHR* 41 (1988), pp. 33–50; A. Offer, 'Farm tenure and land values in England, c.1750–1950', *EcHR* 44 (1991), pp. 1–20; Norton, Trist and Gilbert, 'A century of land values: England and Wales', *J. Royal Statistical Soc.* 54 (1891), pp. 128–31, originally published in *The Times* (20 Apr. 1889), p. 11; M. E. Turner, J. V. Beckett and B. Afton, *Agricultural rent in England, 1690–1914* (1997), especially pp. 216–18.

paying those rents exploited the potential of the land by employing their own capital, and hiring labour that no longer had any direct access to the land. This familiar view is usually packaged with a political thread running from Marx, through the Hammonds, and on into modern times through Saville, Brenner, and others.³ There have been doubts over the timing of this evolutionary outcome and, equally, doubts about the undue simplicity of the tripartite division of rural society into landlords, tenant farmers, and labourers.⁴

This story of the commercialization of agriculture allowed much more to fall into place, not least the rise of large estates and large tenant farms. Concentration of landownership was the key outcome, though not everyone sees this as the key to agricultural productivity.⁵ This concentration was effectively complete by c.1750, according to Marx, to be followed by the mopping-up process of parliamentary enclosure and the removal of access to common land, the real purpose of which was to remove the last vestiges of independence from the landless. Thus, as the Hammonds once put it, was completed the fatality suffered by the small farmers, cottagers, and squatters.⁶

This long tradition of analysis from Marx onwards suggested that, in the transition to capitalism, freehold tenure ousted copyholds, customary tenancies, life leaseholds, and other older tenures. This older historiography carried with it an implication about the relationship between the outright ownership of land and agricultural productivity. In short, commercial ownership was seen as a prerequisite of commercial farming.

II

Historians have long accepted that older forms of tenure survived well into the eighteenth and nineteenth centuries, both in the north-west and south-west of England,⁷ but the standard

³ J. L. Hammond and B. Hammond, *The village labourer, 1760–1832* (fourth edn, 1927); J. Saville, 'Primitive accumulation and early industrialisation in Britain', *The Socialist Register* 6 (1969), pp. 247–71; R. Brenner, 'Agrarian class structure and economic development in pre-industrial Europe', *Past and Present* 70 (1976), pp. 30–75, repr. in T. H. Aston and C. H. E. Philpin (eds), *The Brenner debate: agrarian class structure and economic development in pre-industrial Europe* (1985).

⁴ On the simplicity of the tripartite division of rural society, see the debate in the *J. Peasant Studies* from 1979 to the late 1980s, which was brought together into a single volume edited by M. Reed and R. Wells, *Class conflict and protest in the English countryside, 1700–1880* (1990). See especially Reed's introductory essay, 'Class and conflict in rural England: some reflections on a debate', pp. 1–27, especially pp. 6, 8.

⁵ R. C. Allen, *Enclosure and the yeoman: the agricultural development of the south Midlands, 1450–1850* (1992), *passim*; J. V. Beckett and M. E. Turner, 'Freehold from copyhold and leasehold: tenurial transition in England between the sixteenth and nineteenth

centuries', in B. J. P. van Bavel and P. Hoppenbrouwers (eds), *Land holding and land transfer in the North Sea area* (2004), pp. 282–92.

⁶ Hammond and Hammond, *Village labourer*, p. 73.

⁷ C. E. Searle, 'Custom, class conflict and agrarian capitalism: the Cumbrian customary economy in the eighteenth century', *Past and Present* 110 (1986), pp. 106–33; id., 'Customary tenants and the enclosure of the Cumbrian commons', *Northern Hist.* 29 (1993), pp. 126–53; N. Gregson, 'Tawney revisited: custom and the emergence of capitalist class relations in north-east Cumbria, 1600–1830', *ECHR* 42 (1989), pp. 18–42; R. W. Hoyle, 'Tenure and the land market in early modern England: or a late contribution to the Brenner debate', *ECHR* 43 (1990), pp. 1–20; C. Clay, '"The greed of Whig bishops"? Church landlords and their lessees, 1660–1760', *Past and Present* 87 (1980), pp. 128–57; C. Clay, 'Lifeleasehold in the western counties of England, 1650–1750', *AgHR* 29 (1981), pp. 83–96; C. Clay, 'Landlords and estate management in England', in J. Thirsk (ed.), *The agrarian history of England and Wales*, V, 1640–1750 (2 vols, 1985), (ii), pp. 189–230.

picture is still one of the general disappearance of those old forms of tenancy by some time in the eighteenth century. This was a forceful and crucial argument in Robert Allen's depiction and timing of English agricultural productivity change. His thesis was that the triumph of capitalist agriculture, which for so long was associated with parliamentary and other contemporary enclosure from about 1750, was not as significant in terms of increasing agricultural productivity as an earlier period when land was still held and let under older forms of tenure. That earlier period he characterized as the 'yeoman's revolution'. Thus, with his 'yeoman's revolution' of the sixteenth and seventeenth centuries, he attempted to displace the significance of the traditional 'capitalist's revolution' of the eighteenth and nineteenth centuries.⁸

So it would seem that the definition of 'yeoman' must be at the heart of the argument. According to Allen, 'yeomen held their lands by copyholds of inheritance, copyholds for lives, and beneficial leases'.⁹ Notwithstanding remnant survivals, the contention is that, by the late eighteenth century, they had been replaced by a capitalist system of tenure. On closer analysis, we find a rather more complex period than we have previously allowed for, and the actors that are to assume such a central position in the story demand a thorough and fresh analysis of their existence. For example, if we establish that the yeoman survived in large numbers beyond 1750, 1800, or even 1850, what are the implications? What would this do for the balance of power between the yeoman's revolution and the landlord's or capitalist's revolution? Gathering superficial evidence to question the traditional story about tenure is straightforward and replete with individual examples, but a more comprehensive appraisal of the tenures in question has not been attempted on a large scale. An audit of their numbers is the prerequisite to establishing how long they survived and the circumstances in which they disappeared. This paper will identify the survival of the yeoman into the nineteenth, and even the twentieth century. If the survival is of sufficient magnitude, it opens up huge possibilities to re-engage in traditional debates.

III

Almost certainly, Robert Allen did not expect his definition of 'yeoman' to be applied quite as literally as we intend to use it here. Rather, he was making a point about the transition from a time when relatively small farmers were numerous, to one when larger and more commercial forms of agriculture had emerged in the British countryside. Moreover, his thesis continues by suggesting that the small farmers' productivity was based on their high degree of independence and their real ownership of a stake in the agricultural world. In the language of agricultural revolution, small farmers managed a productivity revolution that was at least as important, perhaps more so, than the productivity revolution attributed to the traditional 'agricultural revolution'. The latter was characterized by large and yet larger farms, whose ownership was in the hands of individuals who had capitalistic tendencies, but who employed

⁸ Allen, *Enclosure and the yeoman*; id., 'The two English agricultural revolutions, 1450-1850', in B. M. S. Campbell and M. Overton (eds), *Land, labour*

and livestock: historical studies in European agricultural productivity (1991), pp. 236-54.

⁹ Allen, *Enclosure and the yeoman*, p. 312.

tenants to exploit their property. In turn, those tenants employed an army of wage labourers, which had emerged from the introduction of capitalism through such reforms as enclosure. We all recognize that these economic and social processes were far more complex both across space and through time. Thus a model of two agricultural revolutions was set up.

The so-called 'capitalist' or 'landlord revolution' saw the emergence of large-scale tenant farmers paying rack or commercial rents. They were tenants, not owners, of the soil and the increase in their numbers has traditionally been associated with enclosure. At this time, a proportion of them became tenants, and those who did not were dispossessed and became, at best, labourers, or at worst, urban migrants. This process took place particularly from c.1750 onwards. By contrast, the 'yeoman farmer revolution' recognized the yeomen as the tillers of the soil, certainly, but also as the 'owners' of the soil in the sense that they belonged to one of the groups in control of how the soil was used, even if they were not necessarily the fee simple owners. One such group was the copyholder. He or she was a tenant, but copyholders of inheritance also had the right to pass on the inheritance through the family, or indeed to dispose of it by sale. In this respect, they had the semblance or mantle of ownership. In addition, leaseholders on life leases or long terms of years held a similar position as custodians of their own destiny, but also, as long as the lease continued, of the destiny of the land. These leases could be bought and sold, and depending on the precise nature of the lease, they might be bounded by a custom of more or less perpetual renewal, subject to entry fines, renewal fines, or the payment of trivial annual or quit rents, and other payments such as heriot. The end result was that the copyholder and the leaseholder, who together were definably Allen's yeomen, had more than a tenant interest in the soil. They had quasi-ownership rights or status, and this gave them an incentive to improve or maximize their incomes. The argument continues that they were more productive as 'tenants' under the yeoman's revolution than as 'tenants' under the landlord's revolution.

To establish whether or not yeomen were central to the agricultural revolution, it is necessary first to measure their presence on the ground. If yeomen were alive and well in sufficient numbers after 1750, not only the role of the yeoman in the so-called capitalist's revolution would need to be revised, but also the role of the capitalists, whether revolutionary or otherwise. The task therefore is to seek the yeoman, and to measure his survival or demise from 1750 onwards.

We will touch upon seven sources of evidence that shows that the demise of the yeoman, as defined by Allen, was surprisingly protracted. These sources are: the *General views* of c.1790–1815; the evidence from enclosure; the reference to tenure in the Charity Commission investigations of the second quarter of the nineteenth century; the Church Estates and Ecclesiastical Commissions of the mid-nineteenth century and later; the Cleveland Commission of the early 1870s, which investigated the management of the Universities of Oxford and Cambridge; the Public Schools Commission of the 1860s, which investigated the management of the Public Schools; and the Copyhold Commission, established in the 1840s, which oversaw the enfranchisement of copyhold estates until copyhold was abolished as a form of tenure by the Law of Property Act in 1925.

IV

We are fortunate that, in the period at the heart of the traditional agricultural revolution and therefore after (but not long after) Allen's yeoman's agricultural revolution, an audit of British agriculture was organized. It was not necessarily sophisticated, and at first not particularly systematic, but it did cover England and Wales in a narrow window of the 1790s and 1800s. These were the Board of Agriculture reports. They offer amongst much other detail, an unstructured, qualitative, and superficial review of tenure, which at least has the virtue of a wide coverage. The précis of the evidence that follows has been rehearsed elsewhere in related discussions about tenure and the yeoman.¹⁰

This audit revealed the survival of antiquated tenures across the country in the early nineteenth century, in other words deep into the period of the traditional agricultural revolution. The first, quarto edition of the *General views*, published in 1794–5, provides a general gloss on the survival of the ancient tenures by this time. Berkshire had many leases for lives; but Cheshire was almost universally freehold; an unspecified area of Cornwall, Devon, Dorset and Lancashire was under leases for lives; and unspecified parts of Durham and Hampshire had leases for lives and for years. In contrast, Northamptonshire had tenants at will, except for those tenants of cathedral estates. Northumberland was freehold; in Nottinghamshire the farms were let at will; while Rutland was said to be on year-to-year tenancies; and Worcestershire had many tenants at will. In the last group of counties, the implication of tenancy at will may not necessarily mean that tenure was dominated by freehold since lessees on ancient tenures were often permitted to sub-let and we cannot be sure whether the reporters are referring to the ownership or the tenancy. A consideration of sub-tenancy or sub-letting adds an important and mostly neglected complication to the whole process of the landlord-tenant contract. Shropshire had lots of copyhold; and, while Suffolk was mainly freehold, there were also numerous copyholds. Wiltshire had tenures of all descriptions in all directions. The West Riding of Yorkshire was a mixture of freehold and copyhold but the neighbouring North Riding was a mixture of freehold with farms held by tenancy at will. This is a specific reference seemingly distinguishing the tenancy of farms from the tenancy of land. Kent was under the peculiar system of gavelkind, or divided inheritance. Finally, the reporter for Somerset did not comment on the relative survival of the tenures but instead gave a detailed cost-benefit analysis of the superiority of tenants buying into leaseholds rather than buying land as freehold. This late eighteenth-century impressionistic appreciation of the survival of the archaic tenures certainly suggests that they survived in a widespread fashion.

The authors of the fuller, octavo editions of the *General views* (1795–1817), reported more or less on the basis of a template of subject headings prepared by the Board of Agriculture and which required comment on the state of tenure. Northumberland was confirmed as mostly

¹⁰ M. E. Turner and J. V. Beckett, 'The lingering survival of ancient tenures in English agriculture in the nineteenth century', in F. Galassi, K. Kauffman and J. Liebowitz (eds), *Land, labour and tenure: the institutional arrangements of conflict and co-operation in comparative prospective* (Proceedings B2, XIIth International Economic History Congress, Madrid, Aug. 1998), pp. 97–113; Beckett and Turner, 'Freehold from copyhold and leasehold'.

freehold, but there were parcels of copyhold and church leaseholds. This is a more complicated situation than was described in the quarto version. Cumberland was resolutely manorial: on the estimate of the reporter, two-thirds of Cumberland was held under customary tenure. So yeomen here were very thick on the ground. In Westmorland, the larger estates were freehold and the smaller were under customary tenure 'which differs but little from that by copyhold'. Lancashire was chiefly freehold, with some copyhold; the West Riding was mostly freehold, but copyholders were considerable; and the North Riding was also mostly freehold with a few copyholds and leaseholds.

Switching to eastern England, we learn that copyholds were prevalent in the low country of Lincolnshire, but not so much in the higher areas, and there was also much church leasehold. In Essex, there was a mixture of freehold, leasehold and copyhold. In Norfolk, there was a mixture of copyholds, and church and corporately owned leaseholds, although, 'the practice which lay-lords have of leasing their estates upon lives, in the Western Counties', was not followed here. Adding geography to the debate is a nice distinction, but without more precise measurement it leaves us tantalisingly close to assessing the relative strengths of these different tenures. The reporter estimated that three-fifths of Norfolk was in freehold, one fifth in leasehold, and one fifth under lay lords. In the midland counties, freehold tenures may have dominated (and this helps Allen's argument, since his thesis was mainly confined to these counties), but all tenures were present. In Staffordshire, it was mostly freehold, but again all types of tenure were present, and the leaseholds were usually sub-let. Derbyshire was generally freehold; and Nottinghamshire, Leicestershire, and Warwickshire had a mixture of tenures, though the main one was freehold. Something over half (but how much over?) of Huntingdonshire was freehold, the remainder was copyhold with one-thirtieth part in leasehold. Oxfordshire had all types of tenure, and so did Buckinghamshire, while in Bedfordshire, copyholds were numerous. Every kind of tenure was present in Cambridgeshire, with a vast number of leaseholds.

In the south of England, large parts of Hertfordshire were held by copyhold and, though all tenures were present in Berkshire, it was mostly freehold. Middlesex was basically freehold, but there was much copyhold as well as leasehold; and Dorset had all tenures, though by this time (1812) the ratio of freehold to other tenures was said to be 4:1. While Surrey had all kinds of tenure, it was chiefly in freehold; and in Kent there was a lot of church, crown, and corporately owned leasehold. Finally, in the west of England, the tenure in Cornwall was generally freehold because at the time leaseholds were fast being run out; but Devon, evidently, was still much in leasehold and most of west Somerset was in customary tenure. Shropshire was still much in copyhold, but in Herefordshire there was more leasehold than copyhold, though perhaps two-thirds of the county was freehold. Though the greater part of Gloucestershire was freehold, some copyhold remained, but only one-fortieth part of the county was under leasehold.

If it does nothing else, this superficial evidence from the Board of Agriculture reports leaves us excited enough to have established a presence, and in some places a considerable presence, of the yeoman on the ground, but not excited enough to suggest that a new interpretation is evident. What we need now is some more precise, measured evidence.

V

The yeoman's revolution implies pre-1750 enclosure, before parliamentary enclosure started. This suggests one important question, but it also offers one reasonably systematized source material. The question is, if the peasant (I deliberately use the word loosely and equate it with 'yeoman') was already eliminated in the sixteenth and early seventeenth century – that is, before the traditional Marxist spectre of parliamentary enclosure had even arrived – what purpose was left for parliamentary enclosure itself to perform? Allen suggests that enclosure was a device less for productivity change and more for sorting out property rights. One element of this was the insertion of clauses into enclosure acts to nullify existing tenancy agreements and force the negotiation of new contracts. It is a compelling argument because practically every private act of enclosure contained a clause allowing existing rack rents to be renegotiated at enclosure and, where necessary, for landlords to recompense the sitting tenants for the loss of their contractual use rights where those rents were renegotiated. Allen has made a persuasive case for suggesting that this may have been the most important economic consequence of enclosure, outweighing any possible post-enclosure productivity change.¹¹ Put simply, during the inflationary period that existed almost without pause from 1750 to 1815, landlords could use such enabling clauses in enclosure acts to redistribute Ricardian rent surpluses. Tenants on long leases experienced rising unit incomes from the produce of their lands while at the same time they paid stable nominal rents. These costs necessarily fell in real terms. Conversely, landlords experienced stable nominal incomes, and therefore falling real incomes, while their own costs of survival rose during the general inflation. These decades coincided with the major emphasis on enclosure by parliamentary act. Here was a device to bring the Ricardian surpluses and their relative distribution back into line.

Allen's theory would be the more persuasive if the enclosure acts had allowed the renegotiations of tenures other than rack rents but, on the contrary, they did exactly the opposite. From the full population of Buckinghamshire enclosure acts from 1760 to 1830, and from a sample of several dozen East Yorkshire enclosures over the same period, it is evident that almost all enclosures had the clause that allowed the renegotiation of rack rent. But, in addition, nearly all had one or more clauses that were designed to distinguish, without indemnification, the copyhold land from the freehold land, and to maintain the rights of the lord of the manor to charge appropriately the customary chief rents and quit rents. The clauses also made provision for raising mortgages on copyhold land, and explicitly stated that nothing in the act would otherwise alter existing relationships in law such as wills, settlements, or tenures. It was only leases at rack rents that were affected by this clause, which allowed the renegotiation of the landlord-tenant contract. Yet for these distinctions to be meaningful, it implies that the administrators of enclosure did an audit of tenure.

In other words, the act of enclosure both identified and maintained all other tenurial contracts. Only two Buckinghamshire examples did anything in addition. They allowed the enclosure commissioners not only to be parties to the renegotiation of rack rents, but also

¹¹ R. C. Allen, 'The efficiency and distributional consequences of eighteenth-century enclosures', *Economic J.* 92 (1982), pp. 937–53; id., 'Two English agricultural revolutions'; id., *Enclosure and the yeoman*.

TABLE 6.1. The distribution of tenure at enclosure.

County	Number of parishes	Acreage	Distribution of		
			Freehold %	Leasehold %	Copyhold %
Bucks	30	39,713	58.4	15.2	26.3
Northants	16	28,545	62.3	16	21.8
Oxford	10	11,728	73.8	21.4	4.8
East Yorkshire	43	54,848	43	26.9	30.1
Total	99	134,834	54.3	20.7	25

Sources: Collated from enclosure awards in the respective county record offices.

to aid the transfer of the fee simple in land through the enfranchisement of copyhold. The extent to which the rack rent clause is important, other than directly with regard to freehold land let at rack rents, is bound up with the extent to which other tenures were complicated by sub-tenancies at rack rent. The relationships between lessees of long leases and their lessors remained unaltered, but where those lessors sub-let at rack rent to third parties, they could renegotiate their leases with their sub-tenants. Allen's theory about renegotiation is attractive but, in this legal clothing, can only assist the argument on the basis of those rack rents controlled by titular yeoman when they sub-let as landlords. A summary of the rack rent clause therefore offers some basic rules: it was a clause that specifically referred to rack rents; there was nearly always a countervailing clause that said that other tenures remained untouched by this procedure; this included manorial tenures and lifehold and long leasehold tenures. Table 6.1 summarizes an investigation of enclosure awards and the distribution of tenures that can be discerned from them. It includes a full extract of Buckinghamshire and East Yorkshire enclosures and a sample from each of Northamptonshire and Oxfordshire in two different decades: in the 1770s when enclosing was at its height in Northamptonshire, and a similar decade of Oxfordshire enclosure history in the 1800s.¹²

Three of the counties are taken from Allen's cluster of south midland counties. In the main, the summary distribution understates the extent of the old tenures just prior to enclosure because tithes were commuted at enclosure. This often took the form of a land compensation awarded to the tithe owner, though sometimes a rent charge was substituted for a land equivalent. To that extent tithe owners became landowners, but the land from which the original tithes sprang had been distributed under all tenures. By commuting the tithes for land, the nature of the tenure

¹² My thanks to Dr Jan Crowther for allowing me to edit her original notes, which formed the basis of her thesis, J. M. Crowther, *Parliamentary enclosure in eastern Yorkshire, 1725–1860* (University of Hull, PhD Thesis, 1984). Thanks also to the University of Hull Research Support Fund for a grant to employ a research assistant to extract the Northamptonshire and Oxfordshire details. While enclosure acts asked clear questions about tenure, not all the corresponding enclosure awards gave a full digest of tenure, hence the restricted numbers for Buckinghamshire and East Yorkshire, but the absence of a mention of tenure should not imply that the parishes and places concerned were automatically in freehold tenure. The outcome of enclosure in the shape of the awards constructed by the commissioners and their teams was less bound by precise rules than perhaps is properly appreciated.

attached to them changed. Former copyhold and leasehold land that formed the commutation became freehold and the size of the estates controlled by leaseholders and copyholders became correspondingly smaller according to the terms of that commutation. Therefore, the listed tabulation of tenure in Table 6.1 understates the proportion of pre-enclosure leasehold and copyhold and overstates the extent of the freehold. Yet the main point shines through: even after tithe commutation there was a strong presence of both leaseholds and copyholds in these midland counties. This is surely *prima facie* evidence for a healthier-looking yeoman presence after 1750 than Allen allowed for. Furthermore, it also questions the relative impact exerted by the leading players in the agricultural revolution story – the yeoman and the capitalist. It suggests a rethink about the timing of their impact, a timing that emphasizes once again the traditional story.

If this evidence places the yeoman, as defined, firmly on the ground in the late eighteenth and the nineteenth century, will it modify the dating and singular importance of Allan's yeoman's revolution? Did those yeomen remain in place for longer than is commonly appreciated? This is a question that asks nothing for the moment about their productivity potential. What we need is a more rigorous appreciation of their survival beyond 1800 and into the nineteenth century, or indeed a more rigorous measure of their disappearance. Does the necessary detail survive? For institutional property owners, the task is more manageable because of their accountability and audit. In modern times, in spite of the introduction of compulsory registration, private owners still avoid registering their property.¹³ By contrast, institutional property owners have been, and are still, brought to account in various ways. When they are called to account, they provide either precise snapshot details of their property, such as tenure, or they provide a moving image of that tenure.

VI

The institutional landowners that have been placed under the greatest scrutiny include the Oxford and Cambridge colleges, the public schools, the church, and the charities. Work on the Oxford and Cambridge colleges has yielded a rich digest of how their estates were tenanted for the third quarter of the nineteenth century. It emanates from a series of government commissions into both their educational functions and also the ways those functions were administered and financed. The main investigation was the Cleveland Commission of 1872.¹⁴

¹³ See glimpses of the inadequacies of this registration system in J. V. Beckett and M. E. Turner, 'End of the Old Order? F. M. L. Thompson, the Land Question and the burden of ownership in the UK, c.1880–c.1925', *AgHR* 55 (2007), pp. 269–88. See also Cahill, *Who owns Britain*, pp. 4, 53, 401; F. Sheppard and V. Belcher, 'The Deeds Registries of Yorkshire and Middlesex', *J. Soc. Archivists* 6 (1980), pp. 272–86; F. Sheppard, V. Belcher and P. Cottrell, 'Middlesex and Yorkshire deeds registries and the study of building fluctuations', *London J.* 5 (1979), pp. 176–217; Land Registration Act 1925, 15 & 16 George V, c. 21.

¹⁴ British Parliamentary Papers (hereafter BPP) 1873,

C. 856, XXXVII, Universities Commission, 'Report of the commissioners appointed to inquire into the property and income of the universities of Oxford and Cambridge, and of the colleges and halls therein' (in three parts): pt i, 'Report including abstracts and synoptical tables, and appendix'; pt ii, 'Returns from the University of Oxford and from the colleges and halls therein'; pt iii, 'Returns from the University of Cambridge and from the colleges and halls therein'. See too M. E. Turner, 'Corporate strategy or individual priority? Land management, income and tenure on Oxbridge agricultural land in the mid-nineteenth century', *Business Hist.* 42 (2001), pp. 1–26.

TABLE 6.2. Measured distribution of tenure on English institutional land, c.1820–c.1870.

		<i>In acres (subject to rounding errors)</i>					<i>Totals</i>
		<i>Rack-rented</i>	<i>Leasehold</i>	<i>Copyhold</i>	<i>Woods</i>	<i>Other</i>	
Oxford University	c.1870	104,524	71,966	12,619	3331	7	192,447
Cambridge University	c.1870	97,406	24,009	4,247	1612		127,274
Public schools	c.1860	20,183	24,660	21,774	1675	90	68,382
Charity estates	c.1820–40	297,405	63,665	30,190			391,260
Lincoln Cathedral	c.1850	1353	29,054	3406			33,913
Totals	Acres	520,871	213,354	72,236	6618	97	813,176
	%	64	26	9	1	0	100

Source: See text.

There had also been an earlier commission in the 1850s.¹⁵ Both reports yield details about their main source of income, which was their property, and also reveals the nature of the tenant contracts from which they derived that income. Oxford and Cambridge college-owned land was concentrated in Oxfordshire and Cambridgeshire respectively, but it also reached practically every corner of England. We therefore obtain a reasonable impression of the distribution of tenure throughout England. Moreover, although the period between the two commissions was short, there were considerable changes in tenure as the colleges responded to arguments that they could have a more efficient income base if they converted property on old tenures into land held on rack rents. From the point of view of our argument here, this late adjustment in tenure demonstrates the widespread survival of the yeoman deep into the third quarter of the nineteenth century.

Table 6.2 summarizes the tenurial situation of university and college land, and it also summarizes the tenure associated with other institutions, on which we comment below. A striking feature of the university and college element of this table is the difference between two apparently similar institutions. As was explained in another paper, Oxford was much slower to reform its tenurial arrangements.¹⁶ As late as 1870 most, if not all, historians would agree that the agricultural revolution was complete, but the yeoman tenant on Oxford property was still a force to be reckoned with. Nearly half of Oxford's land was tenanted by yeomen.

The earlier commission of the 1850s showed an even greater presence of the titular yeoman. We can demonstrate this from a selection of Cambridge colleges, showing those that c.1851 were already devoid of our definable yeoman, relative to those colleges on whose estates yeomen were still numerous at that time. Over the following 20 years, all colleges moved – at

¹⁵ BPP 1852–3, XLIV, 'Report of Her Majesty's commissioners appointed to inquire into the state, discipline, studies and revenues of the University and Colleges of Cambridge'; BPP 1852, XXII, 'Report of Her

Majesty's commissioners appointed to inquire into the state, discipline, studies and revenues of the University and Colleges of Oxford'.

¹⁶ Turner, 'Corporate strategy'.

TABLE 6.3. Pace of change out of archaic and into modern tenures for selected Cambridge colleges, c.1851–c.1871.

<i>College</i>	<i>c.1851 Percentage of total income</i>			<i>c.1871 Percentage of total income</i>		
	<i>Rack</i>	<i>Leases</i>	<i>Manorial</i>	<i>Rack</i>	<i>Leases</i>	<i>Manorial</i>
Emmanuel	95.6	1.9	2.5	99.6		0.4
Pembroke	90.8		9.2	90.2		9.8
King's	83	12.4	4.6	84.3	12.5	3.2
Peterhouse	79	20	1	98.4	0.5	0.7
St John's	74.3	24.4	1.2	95.4		4.6
Queens'	41.9	54	4.1	87.1	12.8	0.1
Trinity College	36.9	62.1	1.1	67.2	30	2.8
Trinity Hall	26.7	73.3	0.1	99.9		0.1
Christ's	24.6	74.1	1.3	87.3	11.5	1.2

Sources: Collated from BPP 1873, C. 856, XXXVII, Universities Commission, 'Report of the commissioners appointed to inquire into the property and income of the universities of Oxford and Cambridge, and of the colleges and halls', III, 'Returns from the University of Cambridge and from the colleges and halls therein'.

varying speeds – to replace leaseholds with rack rents, and to enfranchise their copyholds. This is shown in Table 6.3. Unfortunately, the sources do not allow the acreages of the estates to be measured on this occasion, but rather we have to use the income derived from the estates as a proxy for the distribution of tenures. By about 1850, both Pembroke and, in particular, Emmanuel colleges were more or less devoid of yeomen tenants. In contrast, Queens' and Trinity Colleges derived over half their income from leasehold yeomen, and Trinity Hall and Christ's College as much as three-quarters. In the next 20 years, all of these colleges made rapid strides to modernize their tenures and reduce the yeoman to a rack rent tenant. Trinity College was the slowest to change, but even it did so eventually.

The summary of tenure in Table 6.2, as far as Oxbridge is concerned, underestimates the degree of yeoman survival in the third quarter of the nineteenth century. As is evident from the commentaries attached to the individual college reports in both commissions, the colleges, especially those in Cambridge, rapidly modernized their leases in the mid- to late nineteenth century. This modernization took the form of allowing leases to fall in and then reissuing those leases on rack rent terms. On occasions, it also meant striking a bargain with lessees before the end of the lease and either buying out the remaining interest of the tenant in the lease or, conversely, selling the remaining interest to the lessee. In addition, there was an untold amount of manorial land under the 'ownership' of Oxbridge colleges, much of which was either not recorded in the Cleveland Commission, or was recorded but without much detail. Most of this was copyhold of inheritance. As we will discover later, legal machinery was put in place, from the 1840s, to bring copyholders and manorial lords together to buy and sell the interest in the land one to another and establish instead a freehold in that land. All manorial lords, institutional – including the Oxford and Cambridge colleges – clerical, and lay, took advantage of the Copyhold acts of the 1840s and 1850s to enter into enfranchisement agreements with

their tenants. The Copyhold Commissioners acted as the intermediary body between lord and copyholder and the ensuing enfranchisement either granted the copyholder the fee simple ownership after a suitable payment to buy out the lord's interest (in this case one or another college), or the copyholder sold his or her interest to the lord. Most college enfranchisements were the former, the colleges sold their interests to the copyholders. The purchase money was often held by the Copyhold Commission to await the time when the college bought replacement land, since it was a requirement governing the colleges that the proceeds from enfranchisement be reinvested in real property. While the Copyhold Commission held the money it was invested in government stock at interest. Clearly the colleges were in no particular hurry to reinvest in land because by the early 1870s the amount of money held by the Copyhold Commission and which had arisen out of successful enfranchisement agreements was by no means negligible. It not only included money held for the enfranchisement of copyholds, but also money that was held when the colleges enfranchised their leasehold land. Taken together this money indicates that a large hidden amount of Oxbridge land, in addition to that proportion revealed in Table 6.2, had also been in ancient tenures before 1871. This money, which was reported in Cleveland, is collated in Table 6.4.

The Copyhold Commission held nearly £340,000 on behalf of Oxford colleges. On the basis of an average contemporary rental value of 25s. per acre, at 25 to 30 years' purchase, this sum of money might have purchased from 9000 to 10,800 acres.¹⁷ This money, however, was derived in the first place from enfranchising land that was in archaic tenures, and therefore did not derive from a normal market transaction. An investigation of the enfranchisement transactions associated with the Copyhold Commission reveals that the contemporary rate of enfranchisement in the third quarter of the nineteenth century amounted to about seven years' purchase or a quarter to a fifth of the actual land value. Therefore while the money held in stock might have bought 9000–10,800 acres under normal land transactions, it may have been derived in the first place from the enfranchisement of between 36,000 and 54,000 acres of land held in archaic tenures. It is impossible to be more precise than this, but what can be said is that this land was not otherwise accounted for in the Cleveland Commission, except as money held in stock. The equivalent figure belonging to Cambridge and its colleges suggests a further 6400 to 9600 acres held in money but again representing considerably more land under former archaic tenures. Therefore it seems likely that the extent of Oxbridge lands in the third quarter of the nineteenth century might have been closer to 400,000 acres. This was more than twice the size of the largest single English private estate at the time (the Duchy of Northumberland), and of an order of magnitude nearly comparable with the extent of *all* charity lands in England and Wales in the second quarter of the nineteenth century.¹⁸ In the comparable period (say, c.1820–40), our estimate is that yeoman tenures accounted for perhaps 250,000 acres of the 400,000 acres owned by Oxford and Cambridge together.

A second type of institution that let its property out on historic or archaic leases was the public school. These too were also subject to periodic public audit and scrutiny. The most

¹⁷ Ibid, pp.6–7; average rents based on Turner, Beckett and Afton, *Agricultural rent*; see also Norton, Trist and Gilbert, 'Century of land values'.

¹⁸ G. Clark, 'The Charity Commission as a source in English economic history', *Research in Economic Hist.* 18 (1998), p. 2.

TABLE 6.4. Money held on behalf of the Oxford and Cambridge colleges by the Copyhold Commission pending the purchase of land (£).

Oxford	
Oxford University	7199
All Souls	36,615
Balliol	7890
Brasenose	72,800
Christ Church	15,843
Corpus Christi	36,087
Jesus	6159
Lincoln	11,922
Magdalen	54,361
Merton	25,494
New College	46,007
Oriel	4153
University College	12,668
Total	337,198
Cambridge	
Cambridge University	4941
Corpus Christi	4915
Gonville and Caius ^a	8108 ^a
St John's	41,813
Total	59,777

Note: ^a In government stock, not necessarily all with the Copyhold Commission.

Source: Collated from BPP 1873, C. 856, XXXVII, Universities Commission, 'Report of the commissioners appointed to inquire into the property and income of the universities of Oxford and Cambridge, and of the colleges and halls therein', II, 'Returns from the University of Oxford and from the colleges and halls therein'.

important audit for our purposes was presented in 1864.¹⁹ Of the public schools, Eton College was by far the largest and wealthiest in terms of landed possessions. Over the seven-year period, 1854–60, the college's income from all manner of rents, manorial fines, and fines on the renewal of leases, amounted to £121,054. Of this, £46,097 came from renewal fines on leases, £2703 from manorial fines, and £72,254 from an undifferentiated combination of annual rents (of the various sorts associated with leaseholds and copyholds) and rack rents.²⁰ The college land was scattered over the 18 counties in the southern half of England, from Lincolnshire in the north to Monmouth in the west and Devon and Somerset in the south-west, and including practically every county (except Hertfordshire, Cambridgeshire and Essex) south and east

¹⁹ BPP, 1864 XX, 'Report of Her Majesty's commissioners appointed to inquire into the revenues and

management of certain colleges and schools'.

²⁰ Ibid, p. 58.

of a line from Warwickshire to Norfolk. Eton's land amounted to a little under 17,000 acres of which only 11 per cent was rack rented, 55 per cent was on leasehold, and 30 per cent was manorial land leased out. In the seven years to 1860, Winchester College received an annual average income of £5826 from rack rents and trivial annual quit rents, a further £2780 from copyhold fines and heriots, and £4589 from renewal fines on leaseholds. Such is the fickleness with which leases 'fell in' or came up for renewal that, in the single year, 1860, the income from archaic rents exceeded that from economic rents. In that year Winchester received £6471 from rack rents, £1366 from copyhold fines and heriots, but a relatively enormous £7200 from renewal fines on leaseholds.²¹ Neither did the actual distribution of tenure in 1860 suggest that much progress towards modernization had been achieved. Winchester owned over 34,000 acres, mainly in Hampshire and Dorset, but also in adjacent counties, and further away in Gloucestershire, Somerset and Essex. Less than three per cent of this land was let out on rack rents, but as much as 45 per cent was let on leasehold contracts and nearly 49 per cent was manorial. However, the public schools were by no means all the same. In stark contrast, Charterhouse's land was in rack rent, all 15,000 acres of it, and apparently always had been let on commercial rents with no beneficial leaseholds, and therefore no fines, ever taken. The possessions of the other schools included in the 1860 inquiry were much smaller in extent and more or less all in rack rents.

A more amorphous group of institutions, which catered for the needs of relatively underprivileged members of society, were the thousands of charities in the the country. Their assets and their management of those assets were inspected by the Charity Commissions in a rather protracted way from 1819 to 1840. The commissioners' reports offer another audit of property.²² The Charity Commissioners were less concerned with the minutiae of tenure and more with the efficient administration of income destined for the use of an otherwise impoverished class of people. To that extent, it is more difficult to use the reports to discover the distribution of tenure. Nevertheless, the reports detail the survival of tenures at precise dates because, although they nearly always gave details of the rental contracts at the time they reported, they often set those contracts in the context of the history of the properties in question. Hence, it is often possible to establish the moment when leaseholds were replaced by rack rent contracts. A reading of the reports suggests that archaic tenures were at their peak c.1790, and had already diminished by the time the commissions were first established in 1819.

The Charity Commissioners produced a summary table of their findings in 1843. This indicated that there were about 390,000 acres in the ownership of charities in England.²³ These properties were described in the 32 volumes of individual reports published from 1819 to 1840 (though volume 32 is in six separate parts). It is not possible to identify under what tenure every acre or part acre was owned or let. In many cases there is no indication at all of the tenure that prevailed. After laborious extraction and collation, these tenures as they might have existed c.1790 are summarized in Table 6.5. This is offered as a

²¹ Ibid, p. 134.

²² Clark, 'The Charity Commission', gives an abbreviated list of the 32 reports, with precise references to their location within BPP.

²³ BPP 1843, XVII, Analytical digest of the reports made by the Commissioners of Inquiry into Charities, esp. pp. 826–9.

TABLE 6.5. Charity Commissioners: summary of tenure.

<i>Main tenure</i>	<i>Sub-tenure</i>	<i>Acres</i>
Leasehold	Leases for lives ^a	29,358
	Leases for years ^b	21,578
	Leases for lives and years ^c	12,188
	Leases – unspecified	540
	Total leasehold	63,664
Copyhold	Copyhold for lives	2394
	Copyhold of inheritance	17,614
	Copyhold – other ^d	10,182
	Total copyhold	30,190
Total		93,854

Notes:

^a When specified, this was most commonly for three lives: 11,786 acres were held on leases for three lives.

^b Of which 5241 acres were held on 21-year leases, and 11,499 acres were held on 21-year leases renewable every seven years.

^c Of which nearly 6000 acres were held on 21-year leases determinable on three lives, and just over 5000 acres on 99-year leases determinable on three lives.

^d Not specifically labelled as ‘copyhold’ but circumscribed by the presence of manors and quit rents.

Source: Collated from Charity Commission Reports *passim*.

lower-bound estimate because almost certainly many more properties were changed into rack rents between 1790 and the 1820s and 1830s, when the reports were compiled. The estimate of rack rents is unrealistically high, as it is a residual of the total after subtracting the specifically identified copyholds and leaseholds. At first glance therefore, and as a proportion of the 390,000 acres of charity-owned land, the extent of copyhold and leasehold seems quite small, but this estimate almost certainly seriously underestimates both the survival of these tenures up to 1790 and thereafter. We conclude that perhaps a quarter of all charity land was held as either a form of archaic leasehold or customary tenure by the end of the eighteenth century. We can give some geographical detail, but for present purposes it is sufficient to say that these lands were distributed throughout England with perhaps a notable concentration of copyhold in the east and Midlands and leasehold in the west, which largely agrees with our expectations.²⁴

But the largest single institutional owner, and the one whose possessions were the most evenly distributed around England, was the church, which comprised not one but many separate, independent institutions. There were over two dozen dioceses in the mid-nineteenth

²⁴ See Clay, ‘Lifeleasehold’, especially p. 83; id., ‘Landlords and estate management’, especially pp. 198–212.

century, to which need to be added cathedrals and deans and chapters, all of which owned land. Their possessions included land and its associated rental income, but also tithes and rent charges. Moreover, this property was not simply agricultural land but included urban property. The property of the 'church' was administered under an equally confusing variety of tenures. Most of that property was let, typically as leasehold, commonly on 21-year leases determinable on three lives, a requirement governed by an Elizabethan statute that also covered college property. In turn, much, if not most, of this property could be sub-let by the lessees. Therefore, in the same way that we have recognized with other institutional owners, land controlled by seemingly archaic tenures could also attract rack rents, but not necessarily for the enjoyment of the fee simple owners. At enclosure, with the commutation of tithes, the parochial clergy also became landowners. A proportion of the land that had been allotted in lieu of tithes became leasehold under 21-year leases, although a proportion was also let at rack rents. The distribution between leases and rack rents is not known.

This state of affairs continued until the 1830s, when legislation empowered the Ecclesiastical and Church Commissions to take responsibility for administering the lands and possessions of the various bishoprics, cathedrals, deans and chapters, and other church administrative bodies. Twentieth-century reforms mean that this is now administered by one body, the Church Commissioners, and it is in their offices and archives that the registries of all mid-nineteenth century church property are held. Unfortunately the various cathedrals and dean and chapter authorities did not carry out the original surrender and transfer of the property in their guardianship at the same time. The surrender usually coincided with the death or translation to another see of the incumbent bishop. The resulting registries of property, which take the form of inventories, are therefore not point specific, though they mostly fall within the third quarter of the century. In evidence to the Royal Commission on Agriculture in the 1890s, Mr Alfred de Brock Porter, the Secretary and Financial Advisor to the Ecclesiastical Commissioners, intimated that most of the property came into its possession in the third quarter of the nineteenth century.²⁵ Therefore we have a moving target and it means we cannot construct a neat 'Domesday' of church possessions in 1840, 1850, or at any other convenient date in the mid-nineteenth century. In addition, this is a relatively little-researched archive.²⁶

When church lands came into the hands of the Ecclesiastical Commissioners, their inventory recorded the tenancy of each holding and often its tenorial history. These inventories were maintained and kept up to date. The details of property ownership for the whole of the Diocese of Lincoln have been extracted and collated, including all the possessions of the bishopric and the dean and chapter, the prebendal estates, and other minor estate property. This property was surrendered by the diocese slowly, from the 1840s to the 1870s, not least because within that window most 21-year leases would have come up for renewal so this was a propitious time for the church authorities to review whether they wished to retain the

²⁵ BPP 1894 XVI, C. 7400, Royal Commission on Agriculture, 'First report of Her Majesty's commissioners appointed to inquire into the subject of agricultural depression', pt i, minutes of evidence, de

Brock Porter's evidence listed as Qs 357–698.

²⁶ I have only seen one direct research reference to it, in B. English, 'Patterns of estate management in East Yorkshire, c.1840–c.1880', *AgHR* 32 (1984), p. 47.

TABLE 6.6. Summary of tenures on Lincoln 'church' lands.

	<i>Acres</i>	<i>Percentages</i>
Twenty-one year leases	10,494	31
Three-life leases	18,560	54.9
Manorial	3406	10.1
Rack-rented	1353	4
Total	33,813	100

Source: Calculated from Church Commissioners Archives, Survey Volumes Q1–6 (mid-nineteenth surveys of Lincoln Cathedral, Dean and Chapter, Bishopric, Prebendal and Manorial estates).

property, or indeed sell it to the sitting tenants. Sometimes the Ecclesiastical Commissioners pre-empted the expiry date and either negotiated the buying-out of the unexpired portions of existing leases, or sold their fee simple interests to sitting tenants. The retained property was then re-let, but this time on the basis of commercial or rack rents. To that extent, those existing tenants who otherwise fitted Allen's definition of the yeoman, became transformed overnight into rack rent tenants or 'tenants at will'. This transformation was negotiated on the basis of advice given by the two firms of land surveyors appointed for the purpose of taking stock of the property.²⁷ The archive is therefore replete with reports from these two surveying partnerships about the desirability of retaining or off-loading particular properties. For the purposes of the present exercise, a summary of Lincoln Diocesan property as it came up for review is tabulated in Table 6.6. It was centred on Lincolnshire itself, where 60 per cent of their land was situated, but it also extended into Bedfordshire and Buckinghamshire in the south, Oxfordshire in the west, Northamptonshire, Leicestershire and Nottinghamshire in the Midlands, Huntingdonshire and Rutland in the east and Derbyshire in the north Midlands. At the time of this audit it was overwhelmingly in one kind or other of leasehold or copyhold. As those leases expired, the property was either offered for sale to the sitting tenants or re-let to whoever would agree to a commercial or rack rent lease.

Unfortunately, until all diocesan records have been extracted and categorized in the same way, we do not know how much land was turned over to the Ecclesiastical Commissioners under this process, or the rate at which the tenures were subsequently adjusted. However, in evidence to the Royal Commission on Agriculture on 10 November 1893, de Brock Porter declared that the Commissioners had about 280,000 acres in possession. We suppose that this was actually let out to lessees for commercial rents. They held a further 30,000 acres in

²⁷ The country was more or less divided into two halves, and the firm of Edward James Smith (later to become Smith, Gore, Dale and Ingram), either on its own or through its heirs, but in association with a surveyor named Pickering and another named Watkins, took the inventory of land in the north of England and Wales; and the firm of Cluttons provided the same function in the south. The line between north and south was drawn at the northern boundaries of the contiguous counties of Cardigan, Radnor, Hereford, Gloucester, Oxford, Buckingham, Hertford and Essex. This is taken from a typescript draft history of Cluttons for the period 1765–1965, which was made in preparation for an official history of the firm. This typescript is in the possession of Professor Barbara English, to whom I am grateful for sight of a copy.

reversion (that is still under leases).²⁸ De Brock Porter also indicated the geography of this property. It was found in 'nearly' every county in the kingdom, ranging from 52,000 acres in Durham to just six acres in Shropshire. In between there were 23,000 acres in Yorkshire, 22,000 in Lincolnshire, 17,000 in Kent, 13,000 in each of Cambridgeshire and Worcestershire, 11,000 in Wiltshire, and 10,000 in each of Somerset and Nottinghamshire. The range of property was enormous, including 3000 holdings or farms of over two acres,²⁹ but only 58 holdings of over 300 acres, of which seven were over 1000 acres.³⁰ In addition, there were 2674 tenants of under two acres.³¹

From a superficial review of the Lincolnshire records, we judge that there was a considerable sale of old land and of old unexpired leases for years and lives, but not nearly so many compensating purchases of new land and unexpired leases. At the national level, however, it is not clear that such sales amounted to a huge acreage. For example, de Brock Porter suggested that perhaps only 17,000 acres had been sold, of which about 5000 acres had been sold to sitting tenants.³² In addition, there is ample evidence to show that the Ecclesiastical Commissioners retained an interest in considerable areas of copyhold land, some or perhaps most of which was not enfranchised until well after compulsory enfranchisement was introduced in 1925. There is evidence in the Church Commission records to suggest that some Hereford Cathedral property was not enfranchised until the 1940s!³³ Our estimate or, more realistically, our guess of the total extent of church land that existed c.1840, most of which was in archaic and customary tenures, is close to 400,000 acres.

VII

We are now in a position to summarize the survival of the yeoman on institutionally controlled land in the nineteenth century. If we include a supplement for Oxford and Cambridge college lands unaccounted for as unspecified copyhold land; if we allow for the enfranchisement of copyhold and leasehold land on this property that we estimate took place between c.1850 and the early 1870s, and therefore rebase our existing appraisal of yeoman tenures on c.1850; if we assume that the history of distribution of tenures identified from Lincolnshire diocesan lands was typical of ecclesiastical property in general; then we can identify something close to 1.2 million acres of institutional land still in yeoman tenure in the second quarter on the nineteenth century. This is summarized in Table 6.7.

Thus far, the analysis has concentrated on institutional landowners. Data for groups such

²⁸ 'First report of ... agricultural depression', minutes of evidence, Q 360, and ditto, App. A, Table VII.

²⁹ Ibid, the term *holding* was used in Q. 375, and *farm* in Q. 377.

³⁰ Ibid, Q. 378.

³¹ Ibid, Qs. 381-2.

³² Ibid, Q. 614.

³³ An extremely small sample of the Hereford inventory held at the Church Commissioners archives has also been extracted. It includes copyholds of

inheritance for the Manor of Bromyard and Bromyard Foreign, including a list of 35 enfranchisements ranging in extent from less than a rood to 246 acres, including four over 150 acres and another three over 100 acres. The first enfranchisement was in 1870 and the last was in 1946, with 10 of them on or after 1922. Church Commissioners, Survey volume N2 for the Diocese of Hereford, pp. xvii and 1 for the Manor of Bromyard and Bromyard Foreign.

TABLE 6.7. Estimated distribution of tenure on English institutional land in the third quarter of the nineteenth century ('000 acres).

	<i>Rack rented</i>	<i>Leasehold</i>	<i>Copyhold</i>	<i>Total</i>
Oxford and Cambridge	150	200	50	400
Public Schools	20	25	22	67
Charity	297	64	30	391
Church	20	340	40	400
Total	487	629	142	1258
%	39	50	11	100

Source: see text.

as these are easier to bring together because they were subject to government scrutiny in the middle two quarters of the nineteenth century. For non-institutional landowners there were no such central audits of a comparable character. Their story should really be told through the archives of individual landowners, but such an audit, even of a modest sample of such landowners, is outside the scope of any individual researcher to manage. Yet there is one way that we may approach an order of magnitude for the demise of the copyholder, specifically, from c.1840 onwards. This is through the Copyhold Commission, the body created to smooth the process of enfranchising copyhold tenancies.³⁴

Nationally, between the first Copyhold Act of 1841 and the last annual report of the Land Commission in 1920 (but reporting for the year 1919) there were 23,695 enfranchisements of copyholds.³⁵ These included copyholds for lives, copyholds for years, and customary freeholds, but the vast majority were for copyholds of inheritance. The annual reports of the Copyhold Commission up to 1882 gave a breakdown of the distribution of manorial lords after which they were replaced by the less informative annual reports of the Land Commission, a body into which the Copyhold Commission was subsumed. Of the 14,717 enfranchisements up to and including 1882, only 1078 involved collegiate property and 1862 clerical property, but the vast majority (11,777) involved property 'owned' by lay lords.³⁶ To that extent, the audit of the yeoman we have conducted so far, or at least the copyholder element deriving from institutional lords, pales against this hidden morass of landlords.

The 1860s was the busiest decade for copyhold enfranchisement, with over 600 made annually in all but two years of the decade. Preliminary investigations show that, of the 678 enfranchisements in 1862, 101 concerned church lands, 72 college lands, and 505 lands in lay ownership. They were composed of 11 copyholds for lives, a copyhold for years, 11 customary freeholds, and the remainder were copyholds of inheritance. They were located in all but

³⁴ The full history of this process is outlined in an unpublished paper by M. E. Turner, 'The enfranchisement of copyhold tenure'. See also Turner and Beckett, 'Lingering survival'; Turner, 'Corporate strategy' and Beckett and Turner, 'Freehold from copyhold and leasehold'.

³⁵ BPP 1920 XIX, Cmd. 928, MAFF, Annual Report of the Proceedings under the Tithe, Copyhold, Inclosure, Commons, and Other Acts for the year 1919.

³⁶ BPP 1883 XXI, C. 3490, Land Commission, Copyhold Department, Forty First Annual Report of the Commissioners, 1883.

eight of the English counties.³⁷ The busiest year of all was 1865, when 1039 enfranchisements were processed (involving 312 manors in 29 English counties). Of these, 1006 were copyholds of inheritance. Of these enfranchisements, 903 were on behalf of lay lords of manors, 88 for clerical lords, 38 for collegiate lords and 10 for other institutional lords. No fewer than 238 in that year alone were sealed in the counties of Norfolk and Suffolk on behalf of the Duke of Norfolk, who was evidently tidying up the tenures in his control.³⁸ Before 1882, it is also possible to establish a geographical breakdown because annual reports indicate the county, parish, and manor involved. The location of these copyhold enfranchisements reflects in general the established understanding of the geography of tenure: copyhold was particularly marked in eastern England and leasehold in western England. In Essex, in the period 1841–82, there were over 2000 enfranchisements, in each of Norfolk and Suffolk over 1400, and in Cambridge over 1000, followed closely by Hertfordshire.³⁹

The distribution of enfranchisements between the different lords establishes that, whatever we think about the survival of the yeoman as an institutional tenant, yeomen survived in larger numbers as tenants of lay lords. We have uncovered just the tip of this iceberg. Unfortunately the one detail that would assist the audit we are attempting in this chapter is missing. The acreage of the land involved is not stated. However, on the basis of the average size of copyholds in the possession of the Oxford and Cambridge colleges and from a sample of enfranchisement deeds held in the National Archives, it is likely that this procedure accounted for somewhere between 500,000 and one million acres of land.

In addition, not all of the church copyhold enfranchisements were conducted through the offices of the Copyhold Commission. Between the 1840s and the 1930s, the two commissions supervising church property also conducted, independently, the enfranchisement of its copyhold property. The details of the enfranchised property can be obtained through the annual reports of those two bodies: they amount to nearly 13,000 individual enfranchisements. A good proportion of these were mixed land and other properties, but 9500 involved some land and, of those, 4900 involved only land.

VIII

Unfortunately, despite all this evidence for copyhold enfranchisement, we still cannot measure the extent of the land involved. Yet, in the spirit of a work in progress, we will attempt an estimate. We know that Oxford and Cambridge college copyholds averaged about 18 acres. We also know that copyholds associated with Lincoln Cathedral and a sample from Norwich and Hereford Cathedrals average out at 35 acres. A sample drawn separately from Winchester Cathedral copyhold enfranchisements averages 40 acres. Finally, a sample of the enfranchisement deeds in the records of the Copyhold Commission in the National Archives yields an average of 30 acres per copyhold. Therefore we have quite a wide variation of average

³⁷ BPP 1863 XXVIII, Copyhold Commission, Twenty-First Annual Report, 1863.

³⁸ BPP 1866 XX, Copyhold Commission, Twenty-Fourth Annual Report, 1866.

³⁹ Details from M. Craven, 'Copyhold tenure and its survival in Holderness, in the East Riding of Yorkshire from c.1750 to 1925' (unpublished Ph.D. thesis, University of Hull, 2002).

size from 18 to 40 acres. If we gross up the 23,000 enfranchisements listed in the Copyhold Commission, and the 13,000 listed separately in the Church Estate Commission and the Ecclesiastical Commission, we estimate that copyhold land amounted to between 720,000 and 1,440,000 acres, c.1840, on the eve of the enfranchisement process. This may yet prove to be an exaggeration but, if it approaches the actual extent of copyhold, then it is not a trivial proportion of England. Moreover, if we add in the leasehold property of the institutions, from Oxbridge, the public schools, the charities, and Lincoln Cathedral as one example of over 20 diocesan institutions, all of which we have estimated in this chapter, we would conclude that some few million acres of England were in the hands of Allen's 'yeomen' as late as 1840. Moreover, given the protracted history of enfranchisement and extinguishment of manorial incidents, the yeoman lingered on well into the twentieth century. That in itself offers a startling conclusion, and surely food for thought for the next generation of historians of land tenure. It suggests that we need to revise not only the chronology of the disappearance of Allen's yeoman but also the impact of the yeoman on the traditional agricultural revolution and, by implication, on Allen's new chronological interpretation of that revolution.⁴⁰

⁴⁰ But there is a telling sting in this tail, which throws all interpretations and chronologies back into the melting pot. We have not yet properly identified the yeoman, meaning the copyholder or the leaseholder. A companion paper is under construction, which will more precisely identify a number of these yeomen and uncover the history of sub-letting.

The impact of the market: producers, markets,
and rural change

Agriculture, marketing and rural change, 1100–1500

by Richard Britnell

This chapter examines a question about which there has already been much discussion of considerable sophistication. It is accordingly designed as a contribution to debate, rather than a presentation of new data. It discusses what difference the current interest in rural trade has made to writing the economic history of the period c.1100–1500 and what further difference it could make in the long run. The argument begins by offering sympathetic analyses of two well-known ways of considering rural development – the Malthusian and the Marxist – that place no significant stress on commercialization but which presuppose it. It shows how commercialization is already built into these models, and has to be recognized if they are to make sense. Then, I outline an independent commercialization model, which, for the sake of terminological consistency, may be labelled Smithian, with reference to the eighteenth-century economist Adam Smith. (It is no accident that the three complementary analyses are named from the founding fathers of economics as an intellectual discipline.) I shall argue that this model is no more able to stand on its own than the other two. Thirdly, and more importantly, the argument turns to examine some implications of this three-fold complexity for the use of theory in rural history. Historians are inevitably committed to the importance of theoretical structures for interpreting long-term social change, but there is a danger currently of confusing the discipline with complementary modes of explanation that are nevertheless sometimes treated as rivals.

The argument to be developed is rooted in the historiography of England and France in the medieval period. This does not mean that its relevance is confined to that setting. The same models of rural development have been used in the explanation of developments across Europe. Nor is the relevance of the argument confined to the period before 1500. Historians of the sixteenth and seventeenth centuries have developed their own Malthusian, Marxist and Smithian arguments to analyse the growth of population; agrarian output and trade in the sixteenth century; and the arrested development, or social problems, of many parts of Europe in the seventeenth. To expand the number and range of references to a wider geographical and chronological frame would certainly be possible for work on a larger scale, but this would have disadvantages for clarity of exposition and the temptation has been resisted.

I

The Malthusian model, adopted in England by Postan and in France by Duby, has been well explored and its shortcomings criticized by reference to both its coherence and the historical evidence. Yet many of the arguments in its favour as proposed in the 1960s have never been answered. The relevant factual evidence can be subsumed into a few main propositions:

1. Population rose by two or three times between 1100 and 1300.¹
2. Growth of productive employment off the land meant that market demand for food and raw materials was increasing, an aspect of the model stressed more by Duby in France than by Postan in England.²
3. There was extensive expansion of cultivation into moorland, heath, forest, coastal marshes, and river estuaries, starting about 1000 in France but probably later in England, which reached a peak about 1250. It was followed by a widespread decline in such activity, though in outlying areas of England and France the extension of the cultivated area continued into the early fourteenth century.³
4. In some regions where arable husbandry was most extended to feed peasant households, livestock densities became too low to provide adequate manure for the enlarged arable acreage.⁴

¹ N. Bulot, 'L'essor (X^e–XIV^e siècles)', in J. P. Bardet and J. Dupâquier (eds), *Histoire des populations de l'Europe* (3 vols, 1997–9), I, pp. 168–76; J. Dupâquier et al. (eds), *Histoire de la population française*, I, *des origines à la Renaissance* (1988), pp. 207–20; G. Duby, *L'économie rurale et la vie des campagnes dans l'Occident médiéval* (1962), pp. 211–19; H. E. Hallam, 'Population movements in England, 1086–1350', in Hallam (ed.), *The agrarian history of England and Wales*, II, 1042–1350 (1988), pp. 508–93; M. M. Postan, 'Medieval agrarian society in its prime: England', in Postan (ed.), *The Cambridge economic history of Europe*, I, *the agrarian life of the middle ages* (2nd edn, 1966), pp. 560–5; J. C. Russell, *British medieval population* (1948), pp. 246–60.

² P. Contamine et al., *L'économie médiévale* (1993), pp. 227–32; Duby, *Économie rurale*, pp. 221–6, 232–6; id., *La société aux XI^e et XII^e siècles dans la région mâconnaise* (1953), pp. 359, 474–5; D. L. Farmer, 'Marketing the produce of the countryside, 1200–1500', in E. Miller (ed.), *The agrarian history of England and Wales*, III, 1348–1500 (1991), pp. 327–39, 358–77; G. Fourquin, *Histoire économique de l'Occident médiéval* (1969), pp. 209–15; E. A. Kosminsky, *Studies in the agrarian history of England in the thirteenth century*, ed. R. H. Hilton, trans. Ruth Kisch (1956), pp. 323–6; E. Miller and J. Hatcher, *Medieval England: rural society and economic change, 1086–1348* (1978), pp. 64–79.

³ D. Barthélemy, *La société dans le comté de Vendôme de l'an mil au XIV^e siècle* (1993), pp. 186–91, 209–12; A. Derville, *L'agriculture du Nord au moyen âge (Artois, Cambrésis, Flandre wallonne)* (1999), pp. 41–4; G. Devailly, *Le Berry du X^e siècle au milieu du XIII^e* (1973), pp. 553–8; Duby, *Économie rurale*, pp. 142–52; H. Dunsford and S. Harris, 'Colonization and wasteland in County Durham, 1100–1400', *EcHR* 56 (2003), pp. 34–56; A. Durand, *Les paysages médiévaux du Languedoc (X^e–XII^e siècles)* (1998), pp. 180–3, 188–90; Hallam, *Settlement and society*, pp. 3–118; E. King, *Peterborough Abbey, 1086–1310: a study in the land market* (1973), pp. 70–87; Miller and Hatcher, *Medieval England: rural society*, pp. 33–41; M. Mousnier, *La Gascogne toulousaine aux XII^e–XIII^e siècles: une dynamique sociale et spatiale* (1997), pp. 109–14, 316–18; A. Saint-Denis, *Apogée d'une cité: Laon et la Laonnais aux XII^e et XIII^e siècles* (1994), pp. 164–8, 394–8; A. Verhulst, *Historie du paysage rural en Flandre de l'époque romaine au XVIII^e siècle* (1966), pp. 35–50, 99–116.

⁴ Duby, *Économie rurale*, pp. 191–2; M. M. Postan, 'Village livestock in the thirteenth century', *EcHR* 15 (1962), pp. 219–49, reprinted in Postan, *Essays on medieval agriculture and general problems of the medieval economy* (1973), pp. 214–48; J. Z. Titow, *Winchester yields: a study in medieval agricultural productivity* (1972), pp. 30–1.

5. Arable acreages on some seigniorial demesnes began to contract before the Black Death.⁵
6. Grain yields on the Winchester bishopric demesnes, which have the best series of demesne accounts in the world, declined in the later thirteenth century.⁶
7. Many recorded rural tenancies – a proportion estimated at about 45 per cent in southern and midland England – were too small to provide a family with subsistence, which implies, taking urban populations into account, that over half the population was not self-sufficient in basic provisions.⁷
8. In the late thirteenth century, population densities in parts of England and France were high by earlier standards.⁸
9. Though the power of custom limited the power of landlords to benefit from increasing demand for land by raising rents, and inflation reduced the real value of fixed dues, lords were often able to increase exactions from tenants where these were either arbitrary or contractual.⁹
10. Prices during the thirteenth century were more volatile than wages and probably rose faster.¹⁰
11. Repeated crises checked population growth between 1250 and 1348;¹¹ the famine of 1315–18 was the most severe of the thirteenth and fourteenth centuries.¹²

⁵ Duby, *Économie rurale*, pp. 581–3; J. A. Raftis, *The estates of Ramsey Abbey: a study in economic growth and organization* (1957), pp. 161–2; Titow, *Winchester yields*, pp. 24–6, 140–1.

⁶ B. M. S. Campbell, *English seigniorial agriculture, 1250–1450* (2000), pp. 370–2; Postan, *Medieval economy*, pp. 62–3; Titow, *Winchester yields*, pp. 14–20.

⁷ Derville, *Agriculture*, pp. 67–8; Duby, *Économie rurale*, pp. 530–1; Kosminsky, *Studies*, pp. 221–2, 228; Postan, 'Medieval agrarian society', pp. 563–4, 618–20.

⁸ Contamine, *Économie médiévale*, pp. 271–3; Duby, *Économie rurale*, pp. 216–19; B. M. S. Campbell, 'Population pressure, inheritance and the land market in a fourteenth-century peasant community', in R. M. Smith (ed.), *Land, kinship and life-cycle* (1984), pp. 87–134; Dupâquier et al. (eds), *Histoire de la population française*, I, pp. 242–64.

⁹ G. Bois, *Crise du féodalisme* (1981), pp. 199–200; G. Brunel, 'Seigneurs et paysans en Soissonais et Valois aux XII^e–XIII^e siècles', in Comité des Travaux Historiques et Scientifiques, *Seigneurs et seigneuries au moyen âge* (1993), p. 304; Derville, *Agriculture*, pp. 79–80; Duby, *Économie rurale*, pp. 444–5, 472–91; J. Z. Titow, 'Some differences between manors and their effects on the conditions of the peasantry in the thirteenth century', *AgHR* 10 (1962), pp. 113–28; Postan, 'Medieval agrarian society', pp. 552–3.

¹⁰ Bois, *Crise*, pp. 241–5; Derville, *Agriculture*, pp. 79–80; D. L. Farmer, 'Prices and wages [1000–1355]', in Hallam (ed.), *Agrarian history*, II, pp. 772–9; G. Sivéry, *L'économie du royaume de France au siècle de Saint Louis* (1984), pp. 51–114, 133–48.

¹¹ Duby, *Économie rurale*, pp. 218–19, 547–9; E. Fournial, *Les villes et l'économie d'échange en Forez au XIII^e et XIV^e siècles* (1967), pp. 265–75; M. M. Postan and J. Z. Titow, 'Heriots and prices on Winchester manors', *EcHR* 11 (1959), pp. 383–411, reprinted in Postan, *Essays*, pp. 150–85; R. M. Smith, 'Demographic developments in rural England, 1300–48, a survey', in B. M. S. Campbell (ed.), *Before the Black Death: studies in the 'crisis' of the early fourteenth century* (1991), pp. 25–77; R. M. Smith, 'Human resources', in G. Aston and A. Grant (eds.), *The countryside of medieval England* (1988), pp. 202–8.

¹² Bois, *Crise*, pp. 239–40; Duby, *Économie rurale*, p. 548; Derville, *Agriculture*, pp. 81–4; Dupâquier et al. (eds), *Histoire de la population française*, I, pp. 219–20; W. C. Jordan, *The great famine: northern Europe in the early fourteenth century* (1996); I. Kershaw, 'The great famine and agrarian crisis in England, 1315–1322', *Past and Present* 59 (1973), pp. 3–50, repr. in R. H. Hilton (ed.), *Peasants, knights and heretics: studies in medieval English social history* (1976), pp. 85–132; Postan and Titow, 'Heriots and prices'.

At least four of these eleven propositions presuppose commercial development. The second, that non-agricultural population was growing and that this constituted a stimulus to agriculture, is central to the case for commercialization. The seventh, concerning the proportion of the population without visible means of support on the land, constitutes one of the strongest arguments for supposing that the rural economy offered viable alternatives to subsistence agriculture.¹³ The ninth proposition depends upon the previous development of a land market, and the tenth implies the operation of an effective commodities market. Some proponents of the neo-Malthusian model disparaged the positive significance of commercial developments except as evidence of overpopulation and flight from the land, or as evidence that rural society was inhospitable to trade.¹⁴ However, even in this grudging perspective, commercial development supplies one of the reasons why population was able to grow as it did. These eleven propositions suggest that during the later thirteenth century the possibilities for further growth were reduced, and that population was growing at the expense of *per capita* resource levels and welfare standards. Most of them remain uncontroversial. Those whose significance has been seriously challenged are the fourth, fifth, sixth and eleventh. It has been argued that if there was under-manuring of the land, this was more the result of how manure was managed than any overall deficiency.¹⁵ The fifth and sixth proposition are strictly speaking correct, but their representativeness of the whole agrarian economy, and their meaning for total factor productivity, is very suspect; contracting arable husbandry and declining yields were far from universal before 1315, and they did not imply widespread deterioration of the soil.¹⁶ The evidence for a Malthusian check to population growth before 1348 remains ambiguous, and not all the evidence points that way.¹⁷ With these qualifications, the Malthusian hypothesis, in so far it relates to a slowing down of economic development, remains a strong one, both simply constructed and load-bearing; it essentially uses two variables, population change and the quantity of natural resources, to explain a wide range of observed phenomena.

A first, and easy criticism of its scope is that population growth itself needs to be explained. What caused population growth in the twelfth and thirteenth century if not independent changes in the political, agrarian or commercial environment? The principal shortcoming of the argument as a general model of development, however, is that it explains so little in the long term. This is partly why it has been so commonly resisted, and why the arguments in its favour have commonly been ignored or disparaged. The Malthusian approach to economic development has some obvious bearing on the arrest of population growth in the later thirteenth and early fourteenth centuries, when numbers reached 4½–6 million in England and 14–20 million in France, and helps at least to explain slower growth as population approached these limits. But it explains nothing of the subsequent course of population history. Nor does it

¹³ R. H. Britnell, 'Commercialisation and economic development in England, 1000–1300', in Britnell and B. M. S. Campbell (eds), *A commercialising economy: England 1086 to c.1300* (1995), pp. 8–9, 14–16.

¹⁴ M. M. Postan, *The medieval economy and society: an economic history of Britain, 1100–1500* (1972), pp. 212–13.

¹⁵ Campbell, *English seigniorial agriculture*,

pp. 173–6.

¹⁶ *Ibid.*, pp. 370–5, 381–4.

¹⁷ M. Ecclestone, 'Mortality and rural landless men before the Black Death: the Glastonbury head-tax lists', *Local Population Studies* 63 (1999), pp. 6–29; Smith, 'Demographic developments'; B. F. Harvey, 'The population trend in England between 1300 and 1348', *Trans. Royal Hist. Soc.*, fifth ser., 16 (1966), pp. 23–42.

adequately assess those responses to population growth that brought about adaptive economic and social change.

In so far as this analysis has any long-term perspective, it forms part of a tradition, powerful in the 1960s, which classified economies before the eighteenth century as 'traditional' and belittled the significance of their institutional or technological achievements. The most extreme variant of this approach was W. W. Rostow's 'take-off' model, but similar concepts underlay other models of modern economic growth and the widespread hunt for its origins in different contexts. Historical analysis was driven partly by the propagandist urge to focus the attention of governments across the world on the benefits of modernization, and its commitments to earlier periods tended to be sacrificed to this end. 'Pre-industrial' societies were analysed as subject to long cycles of expansion and contraction that failed to attain what modern societies eventually achieved. This habit of thought discouraged the idea that, in these earlier periods, either exceptional commercial opportunities or exceptional problems of scarcity were capable of generating innovation of long-lasting significance. The fact that the economy in 1500 had a quite different composition from that of 1100, and that its infrastructure had changed almost beyond recognition, could be regarded as a matter of antiquarian interest.

II

The chief competitors for explaining rural change up to the 1960s, at least, and in some quarters thereafter, have been Marxist models. These exist in several forms, but share essential features. Because of their emphasis on the structuring of political power as a determinant of social change, Marxist analyses lend themselves less readily than either the Malthusian or the Smithian to sweeping explanations. The comparative history of England and France, for example, implies major divergences of emphasis all through the medieval period. In many parts of France lords had to respond during the eleventh and earlier twelfth centuries to a disintegration of royal authority that had no equivalent in England. In these regions, the status of rural freemen was undermined by the expanding scope of custom and the wider range and heavier burden of seigniorial impositions to create a 'new serfdom'.¹⁸ But lords frequently took advantage of the monetization of the rural economy, particularly during the thirteenth century, to allow tenants to buy their freedom, either individually or collectively, so that by the end of the thirteenth century serfdom disappeared in some regions and was attenuated in others.¹⁹ English lords, by contrast, having commonly lost powers over freemen to the king's courts during the twelfth century, were more inclined to cling to their rights over customary tenants, responding to the particular way in which English common law had sharpened the divide between free and unfree. English lords were prepared to create new free tenures, but

¹⁸ R. Boutruche, *Seigneurie et féodalité: le premier âge des liens d'homme à homme* (2 vols, 1968), I, pp. 153–9; J.-P. Poly and E. Bournazel, *The feudal transformation, 900–1200*, trans. C. Higgitt (1991), pp. 133–7.

¹⁹ Duby, *Économie rurale*, pp. 477–8; G. Fourquin, *Les campagnes de la région parisienne à la fin du moyen âge* (1964), pp. 161–70; G. Walter, *Histoire des paysans de*

France (1963), pp. 55–6, 58–65. For the extent of variation within France itself, see L. Musset, 'Le problème des chartes de franchise en Normandie (XI^e–XIV^e siècles)', in Institut de Recherche Régionale (Nancy), *La charte de Beaumont et les franchises municipales entre Loire et Rhin* (1988), pp. 43–57.

rarely to enfranchise villeins or to buy them out, even where there might have been short-term commercial advantages in doing so.²⁰ There are corresponding differences between the course of social change in England and France after the Black Death, the period in which serfdom was eventually undermined in England. Marxist analysis emphasizes how much population movements fail to explain. The causes of economic crisis in the fourteenth century often had a political and military component.²¹ Because of initial institutional differences, and differences of response, the effects of these crises also varied, so that declining population had different institutional consequences.²²

Despite local differences in the course of social change, there are Marxist propositions of general relevance:

1. Kings and lords, with their complex hierarchical bonds of interdependence, commanded the principal sources of social power and their activities were a principal determinant of economic development.²³
2. Because lords commanded agricultural resources, and had extensive powers over resident farming populations, conflict over levels of rents, dues and taxes was intrinsic to rural society. Bloch famously observed that revolts against landlords were as characteristic of medieval society as strikes against large capitalist firms. Servile status, in particular, was oppressive and a further source of antagonism between lords and tenants.²⁴
3. Kings, princes and lords actively fostered towns, commercial activity and monetization in order to facilitate increases in their power and income.²⁵
4. Total rents, seigniorial dues and taxes per acre of tenant land – the surplus extracted by lords from their tenants – were particularly high around 1300, and wage rates were particularly low.²⁶

²⁰ J. Hatcher, 'English serfdom and villeinage: towards a reassessment', repr. in T. H. Aston (ed.), *Landlords, peasants and politics in medieval England* (1987), p. 267; P. R. Hyams, *King, lords, and peasants in medieval England: the common law of villeinage in the twelfth and thirteenth centuries* (1980), pp. 257–8.

²¹ Bois, *Crise*, pp. 284–93; R. Boutruche, *La crise d'une société: seigneurs et paysans du Bordelais pendant la Guerre de Cent Ans* (1947; repr., 1963), pp. 165–79; Derville, *Agriculture*, pp. 85–90; Fourquin, *Campagnes*, pp. 229–59; M. le Mené, *Les campagnes angevines à la fin du moyen âge* (1982), pp. 195–221.

²² R. Brenner, 'Agrarian class structure and economic development in pre-industrial Europe', *Past and Present* 70 (1976), pp. 30–75, reprinted with related discussion in T. H. Aston and C. H. E. Philpin (eds), *The Brenner debate: agrarian class structure and economic development in pre-industrial Europe* (1985), pp. 10–63.

²³ G. Duby, *The early growth of the European economy* (1974), pp. 227–30; R. H. Hilton, *Bond men made free: medieval peasant movements and the English rising of 1381* (1973), pp. 40–62.

²⁴ Duby, *Économie rurale*, pp. 462–500; C. C. Dyer, *Making a living in the middle ages: the people of Britain, 850–1520* (2002), pp. 178–83; E. B. Fryde and N. Fryde, 'Peasant rebellion and peasant discontents', in Miller (ed.), *Agrarian history*, III, pp. 744–88; R. H. Hilton, 'A comment', in Hilton (ed.), *The transition from feudalism to capitalism* (1976), pp. 113–17; id., 'Freedom and villeinage in England', in Hilton (ed.), *Peasants, knights and heretics: studies in medieval English social history* (1976), pp. 174–91; Kosminsky, *Studies*, pp. 331–5, 338–57.

²⁵ D. Barthélemy, *L'ordre seigneurial: XI^e–XII^e siècle* (1990), pp. 99–103; Duby, *Early growth*, pp. 235–6, 251–3; M. W. Beresford, *New towns of the middle ages: town plantation in England, Wales and Gascony* (1967); R. H. Hilton, *English and French towns in feudal society* (1992), pp. 18, 25–52.

²⁶ Duby, *Économie rurale*, pp. 472–91; Farmer, 'Prices and wages', pp. 775–9; J. R. Maddicott, 'The English peasantry and the demands of the crown, 1294–1341', in T. H. Aston (ed.), *Landlords, peasants and politics in medieval England* (1987), pp. 285–359;

5. The dependence of major lords on rents and feudal dues discouraged them from investing in their properties while simultaneously impairing the possibility of investment by their tenants.²⁷ French historians are more aware than English ones of peasant indebtedness resulting from poverty, and more inclined to interpret it as a major social problem in the period before the Black Death.²⁸
6. After about 1300 the structure of medieval lordship came under severe and often unsustainable pressure – the crisis of feudalism – because lords could not maintain their former levels of incomes and investment under existing social and legal relationships.²⁹
7. The heightened conflict between lords and tenants in the fourteenth century was a consequence of the crisis of feudalism, but exposed antagonism that had been long endemic at a local and uncoordinated level.³⁰
8. Falling population during the fourteenth century was as much a consequence as a cause of economic crisis.³¹
9. The late medieval crisis of feudalism was accompanied and intensified by a decline in land values and rents, and an increase in wages. The welfare advantages of these developments are debated, particularly in France where the implied benefits for standards of living were more heavily offset by war and taxation than in England.³²
10. The development of leasehold facilitated entrepreneurship amongst minor landlords, townsmen and wealthy peasants (in England, particularly after 1350). There was consequently a wider polarization of land tenure between the wealthiest and the poorest villagers.³³

Note 26 continued

D. Pichot, 'Le prélèvement seigneurial dans l'ouest de la France (XI^e–XIII^e siècle)', in M. Bourin and M. Sopena (eds), *Pour une anthropologie du prélèvement seigneurial dans les campagnes médiévales (XI^e–XIV^e siècles)* (2004), pp. 617–22; J. Z. Titow, *English rural society, 1200–1350* (1969), pp. 73–8, 81.

²⁷ R. H. Hilton, 'Rent and capital formation in feudal society', in Hilton, *The English peasantry in the later middle ages* (1975), pp. 174–214.

²⁸ Duby, *Économie rurale*, pp. 491–500; Contamine, *Économie médiévale*, pp. 232–3. For England, see M. Bailey, 'Peasant welfare in England, 1290–1348', *ECHR* 51 (1998), pp. 243–4; P. R. Schofield and N. J. Mayhew (eds), *Credit and debt in medieval England, c.1180–c.1350* (2002).

²⁹ G. Bois, 'Against the neo-Malthusian orthodoxy', in Aston and Philpin (eds), *Brenner debate*, p. 111; R. H. Hilton, 'Y-eut-il une crise générale de la féodalité?' *Annales ESC* 6 (1951), pp. 23–30; id., 'Was there a general crisis of feudalism?' repr. in Hilton, *Class conflict and the crisis of feudalism. Essays in medieval social history*

(1985), pp. 239–45.

³⁰ Bois, *Crise*, pp. 240–1; M. Bourin-Derruau, *Temps d'équilibres, temps de ruptures: XIII^e siècle* (1990), pp. 271–3; R. H. Hilton, 'Introduction', in Hilton and T. H. Aston (eds), *The English rising of 1381* (1984), p. 3; Hilton, 'Peasant movements in England before 1381', repr. in Hilton, *Class conflict*, pp. 122–38; M. Mollat and P. Wolff, *The popular revolutions of the late middle ages* (1973), pp. 36–43; S. H. Rigby, *English society in the later middle ages: class, status and gender* (1995), pp. 104–24.

³¹ W. Blockmans and H. Dubois, 'Le temps des crises (XIV^e et XV^e siècles)' in Bardet and Dupâquier (eds), *Histoire des populations*, I, p. 188; Hilton, 'Was there a general crisis?' p. 244.

³² Bois, *Crise*, pp. 200–1; Derville, *Agriculture*, pp. 236, 257–61, 263; Duby, *Économie rurale*, pp. 558–62, 593–9; Dyer, *Making a living*, pp. 355–9; id., *Standards of living*, pp. 146–50, 157–60, 167, 216–17; Hilton, *Decline of serfdom*, pp. 39–40, 43; Mené, *Campagnes angevines*, pp. 431–45; A. Plaisie, *La baronnie de Neubourg* (1961), pp. 321–32; Postan, 'Medieval agrarian society', p. 630.

³³ Duby, *Économie rurale*, pp. 607–10; R. H. Britnell,

Unlike the Malthusian propositions, which have their chief application in the thirteenth and early fourteenth centuries, the Marxist ones have maximum explanatory power in analyses of the period 1350–1450, where conflict between lords and tenants was manifestly a cause of rural social change.

A background of commercial development is as relevant for Marxist as for the Malthusian interpretations. The second, fourth, fifth, sixth and eighth propositions all hinge on earlier monetization of social relations of production in the countryside. The third proposition correctly represents commerce as a means by which landlords increased their economic power. Struggles for peasant freedom can only be understood in a context where money rents could be substituted for labour services, where labourers could be hired for wages, where a substantial part of the peasant population engaged in commercial farming in grain and wool, and where urban employment offered a viable alternative to work on the farm. Marxist writers, indeed, have openly embraced the significance of commercialization as a means whereby landlords accumulated surplus value. Kosminsky, using the evidence of the Hundred Rolls, was to the fore in demonstrating the extent to which the English rural economy was monetized by the 1270s.³⁴ Hilton, too, was for long the leading historian of this particular development, and clearly perceived its importance for rural society.³⁵

The ten propositions outlined here mostly stand up well to historical criticism, though doubts have been expressed about the interpretation of the fourth, sixth and tenth propositions. The fact that total payments reached their peak around 1300 does not necessarily mean that lordship was most exploitative at that period, since custom served as a considerable protection for thousands of customary and free tenants owing non-contractual rents.³⁶ The sixth proposition is weakly constructed as an explanation of economic change for want of any distinctive account of when and why seigniorial incomes decreased. Lack of investment opportunities and commercial incentives was probably more a problem in the rural economy of the fourteenth century than lack of funds.³⁷ The significance of the tenth proposition in Marxist historiography is open to question. It is no more than wishful thinking to regard minor rural entrepreneurs of the late middle ages as any more harbingers of modern capitalism than the wealthy estate owners who had preceded them.³⁸

As in the case of population change, class conflict is an unconvincing prime mover of economic and social development. The development and decline of villeinage, and the quality of relationships between lords and tenants, are matters of great historical concern, but they are details in a more complex and varied history involving social groups of many other kinds.

Note 33 continued

The commercialisation of English society, 1000–1500 (sec. edn, 1996), pp. 197–203; C. C. Dyer, 'Were there any capitalists in fifteenth-century England?' in J. Kermode (ed.), *Enterprise and individuals in fifteenth-century England* (1991), pp. 1–24; Fourquin, *Campagnes*, pp. 349–50; R. H. Hilton, *The economic development of some Leicestershire estates in the fourteenth and fifteenth centuries* (1947), pp. 94–105, 129–30.

³⁴ Kosminsky, *Studies*, pp. 152–96.

³⁵ R. H. Hilton, 'The small town as part of peasant society', in id., *English peasantry*, pp. 76–94; id., 'Towns in English feudal society', in id., *Class conflict*, pp. 175–86.

³⁶ Hatcher, 'English serfdom', pp. 249–70.

³⁷ R. H. Britnell, *Britain and Ireland, 1050–1530: economy and society* (2004), pp. 83–5.

³⁸ R. H. Britnell, 'Commerce and capitalism in late medieval England: problems of description and theory', *J. Hist. Sociology* 6 (1993), pp. 365–6.

Marxist analysis pinpoints well some loci of social conflict, but even in these contexts it cannot, without information concerning population movements and trade, explain why seigniorial pressure peaked around the early fourteenth century, nor why resistance by tenants, taxpayers and wage-earners was so much more effective after 1300 than earlier. Marxists necessarily have to use the other models to complete their analysis of events.³⁹

III

The study of commercialization does more than simply complement the other two models. It introduces a new agenda, focusing on the study of trade and commercial practices, their change through time, and their long-term implications for productivity. The principal propositions of this argument may be summarized as follows:

1. The period 1100–1300 saw widespread urbanization, by means of both the growth of existing towns and the creation of new ones, many of which were small and dependent upon very localized economic development.⁴⁰
2. There was a considerable increase in silver mining and the circulation of money per capita in this period. An increased range of coins was minted, including some struck in gold.⁴¹
3. The monetization of employment, exchange, rents and taxes was widespread. In France large sums were required by those numerous village communities that purchased freedom from seigniorial dues.⁴²
4. Commerce encouraged the innovation of institutional infrastructure in marketing, money and credit, transport, economic legislation and judicature.⁴³

³⁹ Bois, 'Against the neo-Malthusian orthodoxy', pp. 117–18.

⁴⁰ G. Astill, 'General survey 600–1300', in D. M. Palliser (ed.), *The Cambridge urban history of Britain, I: 600–1540* (2000), pp. 42–9; Barthélemy, *Société*, pp. 226–45; Beresford, *New towns*; Britnell, 'Commercialisation and economic development', pp. 9–12; M. Bur (ed.), *Les peuplements castraux dans le pays d'Entre-Deux* (1993); Fournial, *Villes*, pp. 41–133; E. Lorans, *Le Lochois du haut moyen âge au XIII^e siècle: territoires, habitats et paysages* (1996), pp. 135–48; E. Miller and J. Hatcher, *Medieval England: towns, commerce and crafts* (1995), pp. 263–79; D. Poppe, *Économie et société d'une bourg provençal au XIV^e siècle: Reillanne en Haute Provence* (1980), pp. 171–89; Sivéry, *Économie*, pp. 21–3.

⁴¹ M. Allen, 'The English currency and the commercialization of England before the Black Death', in D. Wood (ed.), *Medieval money matters* (2004), pp. 31–45; ead., 'The volume of the English currency, 1158–1470', *ECHR* 54 (2001), pp. 595–611; M. C. Bailly-Maitre, 'Les mines d'argent de la France

médiévale', in Société des Historiens Médiévistes de l'Enseignement Supérieure Public, *L'argent au moyen âge* (1998), pp. 25–37; E. Fournial, *Histoire monétaire de l'Occident médiéval* (1970), pp. 78–95; N. Mayhew, 'Modelling medieval monetisation', in Britnell and Campbell (eds), *Commercialising economy*, pp. 55–77; P. Spufford, *Money and its use in medieval Europe* (1988), pp. 109–263.

⁴² Duby, *Économie rurale*, pp. 463, 470, 472–99; C. C. Dyer, *Lords and peasants in a changing society: the estates of the bishopric of Worcester, 680–1540* (1980), pp. 97–101; Fourquin, *Campagnes*, pp. 160–90.

⁴³ Barthélemy, *Société*, pp. 735–45; Britnell, *Commercialisation*, pp. 79–97; Mousnier, *La Gascogne*, pp. 365–9; E. W. Moore, *The fairs of medieval England: an introductory study* (1985); F. Neveux, *La Normandie royale des Capétiens aux Valois (XIII^e–XIV^e siècles)* (2005), pp. 412–21; K. Ryerson, *Business, banking and finance in medieval Montpellier* (1985), pp. 9–26, 40–3, 61–5, 86–106, 127–34; G. Sicard, *Aux origines des sociétés anonymes. Les moulins de Toulouse au moyen âge* (1953).

5. Adaptations to commercialization affected legal and customary relations between lords and tenants both through the monetization of obligations and because of the multiplication of freer, money-based forms of tenure.⁴⁴
6. Several forms of technical innovation in agriculture and industry, sometimes associated with occupational and regional specialization, underpinned population growth between c.1100 and c.1300, though their character and rate of diffusion were influenced by customary structures of work and employment.⁴⁵
7. Innovation is to be found throughout society; it was not the aggressive or defensive activity of a particular class.⁴⁶
8. Commerce increased the importance of long-distance trade for employment and economic stability, both in urban and rural economies.⁴⁷
9. The development of commerce was sufficiently extensive and permanent to be defined as 'a revolution', 'a new stage of development', 'a new economy'; many institutional and technological developments added to knowledge and expertise and were therefore transformative as well as adaptive.⁴⁸

These arguments justify the study of trade and markets independently of any preoccupation with 'traditional society' or any concern with the transformation from feudalism to capitalism. But this approach to economic history is no more a general model than the others. No more than population growth or class conflict does commercialization supply a plausible prime mover for economic change. One has only to ask the question whether commercial practices cause commercial development or whether they respond to the growth of commercial opportunity. The answer, of course is both, as so often in economic history.

Perhaps the greatest inadequacy of the Smithian model for historical analysis is its propensity to induce exaggerated optimism about the possibilities for development in any given context. The Malthusian hypothesis is intrinsically gloomy about the characterization of thirteenth-century economic development because of the centrality within the model of scarcity as an

⁴⁴ Britnell, *Commercialization*, pp. 128–51; Derville, *Agriculture*, pp. 72–6; Dyer, *Making a living*, pp. 137–45; Miller and Hatcher, *Medieval England: rural society*, pp. 233–9; Saint-Denis, *Apogée*, pp. 401–5.

⁴⁵ B. M. S. Campbell, 'Agricultural progress in medieval England: some evidence from eastern Norfolk', *EcHR* 36 (1983), pp. 26–46; id., *Seigniorial agriculture*, pp. 11–16, 20–2; J. Gimpel, *La révolution industrielle du moyen âge* (1975), pp. 49–78; J. Langdon, *Horses, oxen and technological innovation: the use of draught animals in English farming from 1066 to 1500* (1986), pp. 285–7, 291; id., *Mills in the medieval economy* (2004), pp. 129–35.

⁴⁶ M. Arnoux, 'Le fer dans les campagnes médiévales (XI^e–XV^e siècles)', in M. Mousnier (ed.), *L'artisan au village dans l'Europe médiévale et moderne* (2000), pp. 187–202; id., *Mineurs, férois et maîtres de forge: étude*

sur la production du fer dans la Normandie du moyen âge, XI^e–XV^e siècles (1993), pp. 26–32, 51–6; Britnell, *Commercialisation*, pp. 79–81; Duby, *Économie rurale*, pp. 256–61; G. Duby, *Hommes et structures du moyen âge* (1973), pp. 260–1; Mousnier, *La Gascogne*, pp. 369–72; E. Perroy, 'Les Chambon, bouchers de Montbrison, c.1220–1314', in id., *Études d'histoire médiévale* (1979), pp. 624–5.

⁴⁷ Day, *Medieval market economy*, pp. 199–215; J. Munro, 'Industrial transformations in the European textile trades, c.1290–c.1340: economic progress or economic crisis?' in Campbell (ed.), *Before the Black Death*, pp. 110–48; Sivéry, *Économie*.

⁴⁸ Britnell, *Commercialisation*, pp. 230–1; id., *Britain and Ireland*, pp. 516–20; Contamine, *Économie médiévale*, pp. 209, 233, 266–7; Sicard, *Aux origines*, pp. 357–62; Sivéry, *Économie*, pp. 11–14, 21–7, 299–319.

experienced reality in particular societies in particular periods. Marxist models, which are less directly concerned with material welfare issues, nevertheless emphasize critical periods of social conflict, and the high costs of resolving them, because of the centrality of inequalities of economic power to the theory. Problems of scarcity and class conflict are presented as problems that these societies faced and only partially resolved, and which were responsible for hardship, struggle and loss of life. The commercialization model, by contrast, presents no equivalent obstacle to welfare. Stress on the possibilities of innovation, especially in a context where these can neither be described in detail, nor measured for their contribution to productivity growth, tends to promote unwarranted assumptions about the ease with which scarcities and the conflicts to which they give rise can be overcome, and to minimize the interest of particular social difficulties.⁴⁹ The commercialization model allows for competition between individuals, but considers this as the universal and primal source of adaptation and innovation rather than as a central dilemma of a particular society at a particular period. It offers no shape to historical development other than continuous adaptation, even continuous progress, and so encourages false optimism about what was possible or likely. To account for decelerating development in the later thirteenth century it has to introduce exogenous variables, either borrowing from the Malthusian and Marxist models, or emphasizing the international effects of warfare and disruptions to trade.

We have a number of interlocking patterns of causation here without being able to assign primacy to any one of them. Do their limitations imply the futility of model building on a grand scale? The three approaches already outlined hardly correspond to different modern schools, since no one of them has more than a handful of committed followers. Historians working on medieval rural history rarely have particular attachment to any of them, and so lack any overall structure of analysis. Resignation to eclecticism, though it seems to be justified by the argument so far, is nevertheless an unattractive solution to the growth of complexity that modern research agendas imply.⁵⁰ An approach that allowed the three different traditions to be combined, even with some tensions about their relative weight, would be better than the cult of eclecticism, or the need for some grim existentialist choice.

IV

The solution to be proposed here may not evoke great enthusiasm. I suggest we look to the biological concept of descent with modification not as a fourth alternative, not even as a model, but as providing an analogy by which the three models we have discussed can be related together. There are many philosophical objections to transferring biological evolutionary theory directly into the social sciences. It results in arbitrary equivalences and conceptual misfits and so discredits, amongst both biologists and historians, the exploration of genuinely helpful lines of enquiry. The application of biological models to human society is made problematic by the

⁴⁹ J. Hatcher and M. Bailey, *Modelling the middle ages: the history and theory of England's economic development* (2001), pp. 156–63.

⁵⁰ For a parallel approach to this problem, which

is probably compatible with mine though differently orientated, see Hatcher and Bailey, *Modelling*, pp. 208–40.

fact that distinctions between classes, languages, political organizations, races, technologies, cultures, ideologies and religions are socially, not biologically, constructed;⁵¹ by the consequent absence of any close equivalence between social units of selection (social practices and cultural traits) and biological ones (genes);⁵² by the role of intentionally directed innovation in human affairs; and by the human capacity for using symbolic representation to transmit information.⁵³ The argument here aims only to show how comparison with what the theory of evolution has achieved for biological studies may help to coordinate different approaches to economic and social history.⁵⁴

The predictive powers of the biological theory of evolution, like those of economic history, are weak, but it is of proven value in retrospective analysis, which is what historians are chiefly engaged in. It has the property of containing more variables than most economic models. In particular its principles include:

1. The formative importance of the relationship between species and limited resources, the central principle of Malthusian models, and the consequent competition both between and within species, for which indeed Darwin owed something to Malthus.⁵⁵
2. The role of genetic mutation, gene flow and genetic drift as sources of biological evolution, which may be regarded as analogous to that of innovation in technical and social practice as sources of social change.⁵⁶
3. Path-dependency, which means that in any given context the possibilities for change are restricted by what is already in place, and which can therefore accommodate some Marxist criticism of over-generalized economic models.⁵⁷
4. The importance of competition as a determinant of which species (read social practices, social roles and institutions) survive and which fail in particular environments.

These essential elements of evolutionary theory are analogous to the different schools of interpretation in medieval economic history that have originated separately, and have often been regarded as rivals. To judge from the history of ideas about biological evolution, a more coordinated development along these lines would not mean that debate about the importance of different aspects of social and economic history was any less vigorous in the future than in the past. Yet some such world-view would be advantageous even if it merely encouraged the convergence of different analytical models; their separation one from another

⁵¹ C. R. Hallpike, *The principles of social evolution* (1986), pp. 56–62.

⁵² W. G. Runciman, *The social animal* (1998), pp. 1–12.

⁵³ J. Ziman, 'Evolutionary models for technological change', in Ziman (ed.), *Technological innovation as an evolutionary process* (2000), pp. 3–12; E. Jablonka, 'Between development and evolution: how to model cultural change', in M. Wheeler, J. Ziman and M. A. Boden (eds), *The evolution of cultural entities* (2002), pp. 27–41.

⁵⁴ For more general discussion, see J. Mokyr, 'Is there a theory of economic history?' in K. Dopfer,

The evolutionary foundations of economics (2005), pp. 195–218.

⁵⁵ E. Mayr, 'Darwin and natural selection', in Mayr, *Towards a new philosophy of biology* (1988), pp. 215–32.

⁵⁶ W. G. Runciman, *A treatise on social theory, II: substantive social theory* (1989), pp. 41–2.

⁵⁷ J. Mokyr, *The lever of riches: technological creativity and economic progress* (1990), pp. 162–5. This does not preclude convergences as well as differentiation: A. W. Johnson and T. Earle, *The evolution of human societies* (2000), pp. 32–6; E. Mayr, *What evolution is* (2001), p. 156; Runciman, *Treatise, II*, pp. 148–63.

generates redundant ideological conflict over propositions that are necessarily compatible one with another, such as that between the causal importance of declining population and class antagonism in explaining changes in late medieval rural society.⁵⁸ An umbrella theory would be even more attractive if it could offer the benefit of new research agenda. And it can surely do so. Each of the models we have examined tends to limit the range of significant research. Broadening the theoretical perspective would benefit research by increasing the range of questions to be asked, in the process integrating economic and social history more closely. In many respects these developments are already taking place without a locus in any particular theoretical tradition. An explanation of where the gains come from can be given most clearly by starting from the limited horizons of the three main models we have discussed.

The Malthusian model has been justly criticized for excessive emphasis on a single resource, land suitable for arable. Resources other than arable land, and activities other than cereals production, contributed to economic and demographic growth.⁵⁹ Population growth was accommodated to a wide range of resources and led to a wider variety of life styles. This research agenda is well under way and has enormous potential. Even tiny populations informatively illustrate the take-up or abandonment of particular niches in the environment, the technical resources they took with them, and the mode in which they adapted. Abandonment of the Malthusian frame offers an open invitation to study any resources of land or sea, to see what populations made of them in different circumstances, and to examine the long-term consequences of such local specializations for the growth of social diversity in the absence of exogenous environmental shocks. A Darwinian view will also be more generous in its recognition of such shocks, whose great historical importance is an embarrassment to all three approaches we have discussed.⁶⁰

The concept of conflict central to Marxist tradition is also one to be broadened to recognize the multifarious forms of competition in the historical record and its varied outcomes in permitting the emergence of new concentrations of power. Competition for resources in the model is narrowly focused on conflict between kings, lords and (chiefly) unfree peasants. It is true that kingship and lordship were the principal bases of political and economic power. Yet the analysis of many social tensions corresponds only imperfectly to this overriding concern. This is especially the case with conflicts between different categories of the peasantry, which do not fit well into the over-arching paradigm of feudalism and its crises. Peasant employers, for example, were more insistent on the enforcement of the Statute of Labourers than major landlords.⁶¹ Other issues are similarly misrepresented by being discussed solely in terms of conflict between lords and tenants. The study of the engrossment and enclosure of land, once discussed largely in terms of landlord oppression, reveals a much broader range of frictions

⁵⁸ Hatcher and Bailey, *Modelling*, pp. 223–7; Rigby, *English society*, pp. 127–43; id., ‘Historical causation: is one thing more important than another?’, *History* (1995), pp. 228–31.

⁵⁹ Duby, *Économie rurale*, pp. 240–54; M. Bailey, ‘The concept of the margin in the medieval economy’, *ECHR* 42 (1989), pp. 1–19; M. Bailey, *A marginal economy? East*

Anglian Breckland in the later middle ages (1989).

⁶⁰ G. J. Vermeij, *Nature: an economic history* (2004), pp. 204–45, 252–60.

⁶¹ L. R. Poos, ‘The social context of Statute of Labourers enforcement’, *Law and Hist. Rev.* 1 (1983), pp. 27–52.

within rural society, often associated with the emergence of a peasant élite.⁶² An expansion of the historian's agenda can retain the important study of landlord-tenant relations while encouraging an interest in conflict and the exercise of power in other aspects of rural society, especially in the late medieval period when wealthier peasants assumed many of the productive and commercial roles previously occupied by landlords. In addition, urban social divisions and conflict, in many ways analogous to that in the countryside, can be better included in a general model of social development than one centred on feudalism and its decay.⁶³ This wider agenda is already well under way, and its theoretical significance is sometimes formal and explicit.⁶⁴

An interest in commercial development implies giving particular attention to activities categorized by Schumpeter as entrepreneurial innovation.⁶⁵ In the 1960s innovation was largely interpreted chiefly to mean technical change, but to privilege a single aspect of innovation in this way cannot be sound. Biological phenotypes are subject to step-by-step modification of every aspect of their form and behaviour, and the same is true of societies.⁶⁶ Institutional changes of the period 1100–1500 were of considerably greater historical significance than changes in methods of production. Most of the evidence for such change in detail is no doubt lost, as in the case of the fossil record on which palaeontologists depend, but there is enough to support the research agenda already under way. Recognition that creative change can occur almost anywhere from the poorest to the richest echelons, and from national centres of power to the organization of individual town and village communities should discourage historians from focusing their attention on any one type of change or any one order of society.

An approach to medieval economic and social change opened up in this way would combine study of economic and social trends with a more positive interest in occupational diversity and multiple sources of change. Rather than postulating a generalized 'prime mover' (which will invariably prove not to be 'prime' except by ideological *Diktat*), evolutionary theories allow a generous range of enquiry about the origins and diffusion of new ways of doing things and the disappearance of old ways. They imply ascribing a positive interest to the locus of specific changes in particular contexts, studying and explaining the autonomous development of practices and their institutionalization in social roles, and in examining adaptive responses to changes in the natural and political environment.⁶⁷ The recent interest in commercialization is already serving well as a midwife to these broader perspectives, since it inevitably emphasizes the multiplicity of different types of activity (other than procreation, death and class conflict) that made original contributions to economic and social development.

⁶² C. C. Dyer, 'Deserted medieval villages in the west Midlands', *EcHR* 35 (1982), p. 19; id., *Lords and peasants*, pp. 260, 331–9, 369–70; R. H. Hilton, 'Old enclosure in the west Midlands: a hypothesis about their late medieval development', in id., *Class conflict*, pp. 42–7.

⁶³ R. H. Hilton, 'Révoltes rurales et révoltes urbaines au moyen âge', in *Histoire au Présent, Révolte et société*, Actes du IV^e colloque (2 vols, 1989), II, pp. 25–33.

⁶⁴ For example, Rigby, *English society*, pp. 2–16; J. Whittle and S. H. Rigby, 'England: popular politics

and social conflict', in S. H. Rigby (ed.), *A companion to Britain in the later middle ages* (2003), pp. 69–70, 83.

⁶⁵ J. Schumpeter, *The theory of economic development* (1934), pp. 129–36.

⁶⁶ L. White Jr, *Medieval technology and social change* (1962); Gimpel, *Révolution industrielle*.

⁶⁷ A recent example of such an analysis using Darwinian concepts is to be found in some of John Langdon's discussion of the development of mill technology: Langdon, *Mills*, pp. 129–35.

Alternative agriculture or agricultural specialization in early modern France?

by Gérard Béaur

A great deal of grain was needed to feed a French population that totalled 22 million in 1700 and had grown to 28 million by the time of the Revolution. Periodic bad harvests, bringing high prices, scarcity, and even famine, were a reminder to both the rural population and the government that agricultural production was always at the mercy of the weather. French society and its political élite were both understandably obsessed by the problem of food supply, and prioritized the production of ever more grain, the staple food for most of the French population. Grain was as omnipresent in the mind of the peasantry as it became in modern historiography.¹

Let us remember that France was an archetypical 'full world' with four times the population of Great Britain at the beginning of the eighteenth century. It was still twice as populous at the end of that century, yet its total land area was less than twice Great Britain's. Compared to France, Great Britain was an 'empty world' until the end of the eighteenth century.² With such constraints, and so many people, it has for long been argued that French rural society was overwhelmingly composed of small farms,³ and that French agriculture remained at subsistence level, with a peasant society that was trying to avoid using markets and had no ambition except to produce grain for its subsistence.⁴ Livestock farming was considered a necessary evil. Its purpose was only to provide draught animals and manure, and its role was as an adjunct of the peasant subsistence system.⁵

This model of French agriculture has been increasingly criticized in recent years, particularly

¹ There is insufficient space for a full bibliography on this question, cf. J. Meuvret, *Le problème des subsistances à l'époque Louis XIV* (3 vols, 1977–88).

² G. Béaur, 'Introduction' in Béaur (ed.), *La terre et les hommes: France et Grande-Bretagne aux XVII^e et XVIII^e siècles* (1998), pp. 9–29.

³ See the 'Brenner debate' in T. H. Aston and C. H. E. Philpin (eds), *The Brenner debate: agrarian class structure and economic development in pre-*

industrial Europe (1985).

⁴ For a contrary position, see P. T. Hoffman, *Growth in a traditional society. The French countryside, 1450–1815* (1996); G. Béaur, *Histoire agraire de la France au XVIII^e siècle. Inerties et changements dans les campagnes françaises de 1715 à 1815* (2000).

⁵ J. Mulliez, 'Du blé, mal nécessaire. Réflexions sur les progrès de l'agriculture de 1750 à 1850', *Revue d'Histoire Moderne et Contemporaine* 36 (1979), pp. 3–47.

since 1998 when my revision of the comparative rural histories of England and France appeared, together with J.-M. Chevet's.⁶ Drawing on the work of Michel Morineau, and Maurice Aymard, we argued that – quite contrary to the persistent myth that the French countryside was dominated by a subsistence polyculture of combined grain and livestock farming, and only marginally and accidentally involved the market – French farmers were significantly involved in an exchange economy and willingly introduced commercial crops whenever circumstance permitted. Since then, this view has been generally accepted by most French rural historians and, obviously, by their English colleagues. But what did participation in the market really mean? What circumstances triggered peasants' entry into an exchange economy? The argument faltered at this point. J.-P. Poussou rightly drew attention to the possibilities of so-called 'alternative' crops when he reviewed Joan Thirsk's book on alternative agriculture.⁷ He pointed out how historians had neglected such alternative agricultures, and that Joan Thirsk's pioneering work rightly insisted on their importance. But at the same time Poussou disagreed with her view that alternative crops mainly flourished in times of low or falling grain prices, and were only introduced as substitutes. What then was the role and function of such new types of agriculture? Were they a way of increasing household income and making a profit in a positive response to adversity, or were they a defensive response, a second-rate way of compensating for adverse economic conditions? To better understand their role in the development of French agriculture, we shall first focus on their relative importance, and on the importance of other kinds of specialization, then consider the specific example of livestock farming, to explore the origins of new cultures, and what factors allowed them to succeed.

I

Jean Meuvret showed that the garden plot had long been a particularly favoured site for agricultural experiments because garden produce was untaxed and exempt from tithes. Gardens were also near to the farmhouse and outbuildings, which made them easy to manure and tend.⁸ In many cases improvements in cultivation techniques began in the garden. But in many regions new crops had been developed beyond the garden, whether or not they had first been planted there. Many of these plants were not intended to feed the population, but to provide products for crafts and industries. We can quickly offer a few examples of non-food crops, and their distribution is shown in Figure 8.1a.

First of all, there were plants used for dyeing. Woad or *pastel*, which gave a blue colour to cloth, and weld, a bright yellow dyestuff, had been grown in Flanders since the middle ages. Competition from *pastel* grown in the Toulouse region, then from imported indigo, and

⁶ Béaur, 'Introduction', pp. 9–29; J.-M. Chevet, *La terre et les paysans en France et en Grande-Bretagne du début du XVII^e siècle à la fin du XVIII^e siècle* (1998). See also his chapter in this volume.

⁷ J.-P. Poussou, "L'agriculture alternative?" À propos d'un livre de Joan Thirsk', *Histoire et Sociétés Rurales* 12 (1999), pp. 131–47; J. Thirsk, *Alternative agriculture:*

a history from the Black Death to the present day (1997).

⁸ J. Meuvret, 'Agronomie et jardinage en France aux XVI^e et XVII^e siècles', in *Eventail de l'histoire vivante. Hommage à Lucien Febvre* (2 vols, 1953), II, pp. 353–62 and in J. Meuvret, *Études d'histoire économique* (1971), pp. 153–61.

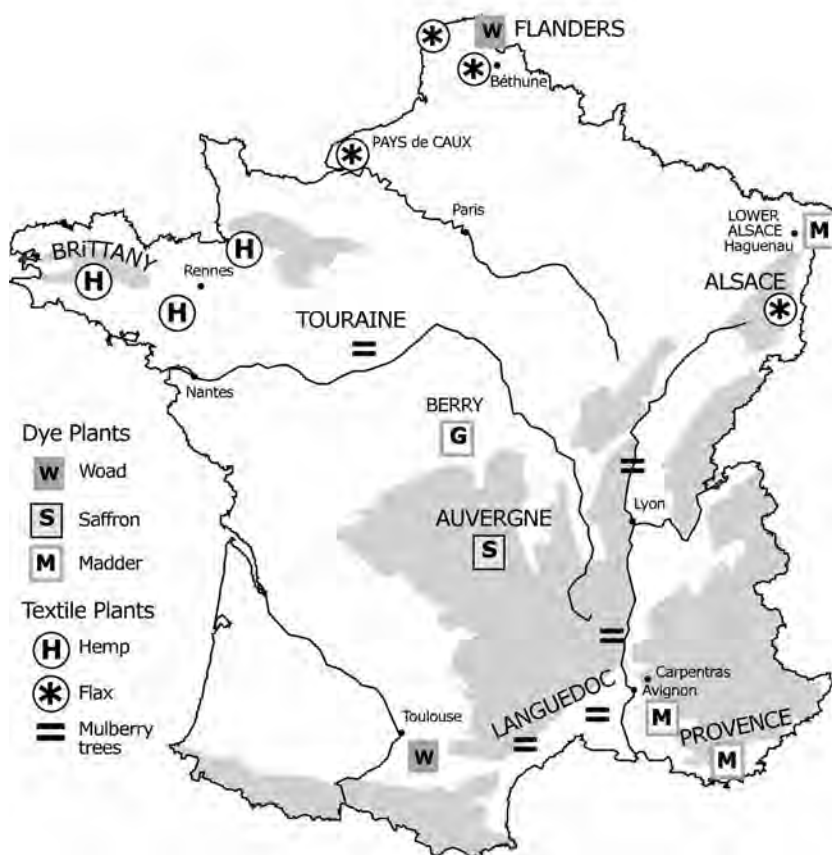


FIGURE 8.1a.
Alternative
agriculture in France.

from saffron grown in the Auvergne, had led to their decline. On the other hand, madder, which had been known for centuries, made unprecedented progress in the second half of the eighteenth century. It was a highly speculative crop that spread rapidly. Its production rose from 200 quintals (20 tons) in Lower Alsace in 1710, to 5000 quintals (500 tons) in 1766 and 50,000 quintals (5000 tons) in 1778. By then it covered about 40,000 hectares (100,000 acres) in that region, and about the same area in Provence, where it was first grown near Cavaillon. It was also found in Languedoc and Berry. In Alsace, madder production for the market was supervised by merchants.⁹

Second, there were textile plants. These were another real opportunity for farmers. As J.-P. Poussou has shown, crops grown for the textile industry were always speculative.¹⁰ In many regions, particularly Brittany and across the western half of France, hemp was still common in the eighteenth century.¹¹ In Alsace the area cultivated was still increasing. It covered about 8000 hectares (20,000 acres) in Lower Alsace on the eve of the Revolution, and produced about

⁹ J.-M. Boehler, *Une société rurale en milieu rhénan: la paysannerie de la plaine d'Alsace (1648–1789)* (1994).

¹⁰ Poussou, 'Agriculture alternative'.

¹¹ J. Tanguy, *Quand la toile va. L'industrie toilière bretonne du 16^e au 18^e siècle* (1994).

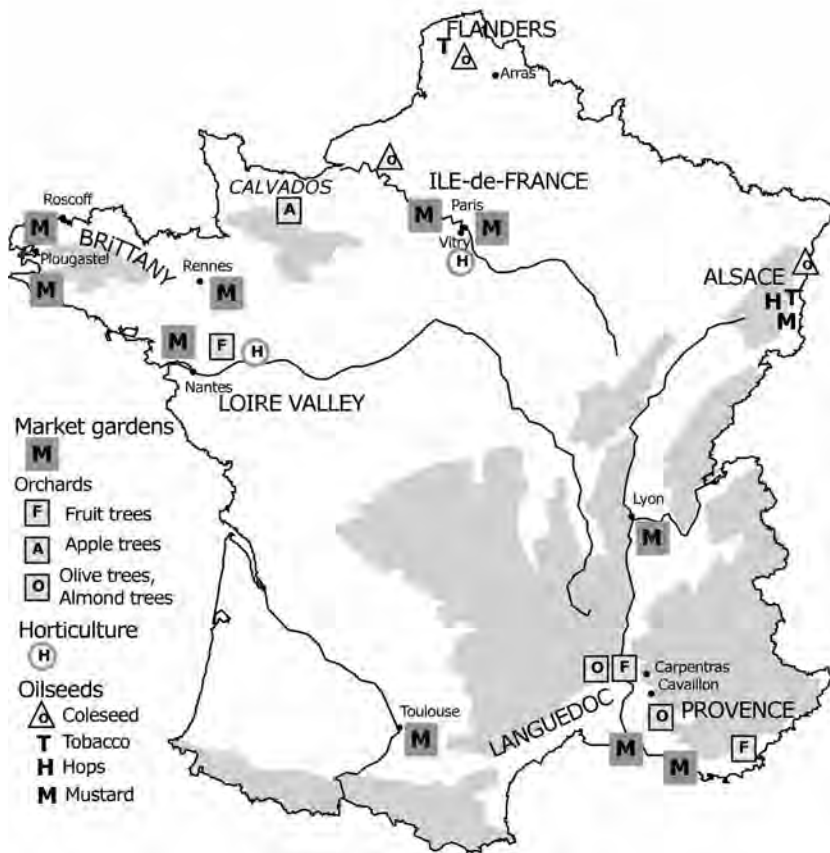


FIGURE 8.1b.
Alternative
agriculture in France.

50,000 quintals a year. The ground had to be dug over five or six times a year and needed a great deal of fertilizer.¹² Although flax was regressing in that region, in Maritime Flanders it was being taken up on a large scale after around 1750 and covered nearly seven per cent of the cultivated area by the outbreak of the Revolution.¹³ It was also very important around Béthune and the Pays de Caux.

Third, the cultivation of mulberry trees expanded spectacularly in the eighteenth century in areas close to Lyons and to a more limited extent in Touraine, in both cases supplying a rapidly expanding silk industry. It was also found in much of Languedoc, in the Comtat near Avignon, and in the Vivarais, where it provided significant benefit to peasant families. The effects of the frost of 1766 on olive trees contributed to the rise of mulberry trees. It has been estimated that the land area devoted to it quadrupled between 1720 and 1789.¹⁴

Fourth, there were market gardens and orchards (see Figure 8.1b). Fruit trees were very important in Provence, around Carpentras and Cavaillon. Cherry trees were particularly

¹² Boehler, *Plaine d'Alsace*.

¹³ P. Vandewalle, *Quatre siècles d'agriculture dans la région de Dunkerque, 1590–1990. Une étude statistique*

(1994).

¹⁴ A. Molinier, *Stagnations et croissance. Le Vivarais aux XVII^e–XVIII^e siècles* (1985).

important, while apples, pears, peaches and walnuts were grown on a lesser scale in the Loire valley. In Provence, olives and almond trees played a very important role in orchards.¹⁵ In Normandy cider apple trees were planted on pastures, and cultivation expanded so that by the beginning of the nineteenth century they provided thirteen per cent of agricultural revenue in an already fairly rich area, the Calvados.¹⁶ Market gardens did well in certain other favoured areas. In Provence, the Comtat produced artichokes, peas and garlic. In Brittany, in the future 'golden belt' around Plougastel and Roscoff, cauliflowers, cucumbers, spinach, sorrel and celery were grown.¹⁷ But around all the main cities, and in particular Paris, there were *maraîchers* involved in the production of fruit and vegetables using intensive production methods with high inputs of manure and complex and frequent crop rotation, specializing in early crops through the use of bell cloches or frames, and carefully packing their produce to maximize price and profit.¹⁸ The expansion of horticulture around Paris is symbolic of such successful specialization. The crisis in wine production explains why the vine growers of Vitry-sur-Seine pulled out their vines and became nurserymen, *marchands d'arbres*, at the beginning of the eighteenth century, which proved to be highly profitable.¹⁹

Oilseeds were another type of crop. In Maritime Flanders the production of oilseeds, notably coleseed, levelled out at less than one per cent of the cultivated land in the middle of the eighteenth century, before declining steeply.²⁰ In the Nord, in 1814, the figure of 7.6 per cent probably included flax as well as coleseed and poppyseed oil. In the neighbouring *département*, Pas-de-Calais, the proportion was rather less (five per cent) but the Béthune region had the highest level, with 12.5 per cent oilseed. These plants had many advantages: the oil could be sold for putting in lamps, making soap, cleaning fabric, and so on. In the case of flax, the fibres were also sold to the textile industry, while animals could be fed with coleseed oilcakes made from residues from pressing. These could also be used as fertilizer and spread in preparation for sowing cereals.²¹ Coleseed was increasingly grown in Normandy, vying in popularity with *rabette*, another oilseed. In 1794 coleseed covered almost 1600 hectares (4000 acres) in the Pays de Caux, still much less than flax, which occupied 9000 hectares (22,500 acres). Its expansion was rapid although it was demanding of manure and needed repeated hoeing.²²

¹⁵ F. Quellier, *Des fruits et des hommes. L'arboriculture fruitière en Île-de-France, changements et continuités (vers 1600-vers 1800)* (2003); M. Vovelle, 'Structures agraires en Provence à la fin de l'ancien régime', and id., 'Société et économie dans le Bas-Comtat et la moyenne Durance à la fin de l'ancien régime', both in Vovelle, *De la cave au grenier. Un itinéraire en Provence au XVII^e siècle. De l'histoire sociale à l'histoire des mentalités* (1980), pp. 135–62, 163–86; B. Maillard, *Les campagnes de Touraine au XVIII^e siècle. Structures agraires et économie rurale* (1998).

¹⁶ G. Désert, *Une société rurale au XIX^e siècle, les paysans du Calvados, 1815–1895* (1975).

¹⁷ J. Meyer, *La noblesse bretonne au XVIII^e siècle* (1966).

¹⁸ R. Abad, *Le Grand Marché. L'approvisionnement*

alimentaire de Paris sous l'ancien régime (2002), pp. 625ff. and M. Philipponneau, *La vie rurale de la région parisienne. Étude de géographie humaine* (1956).

¹⁹ M. Traversat, 'Les pépinières. Étude sur les jardins français et les pépinières' (unpublished thesis EHESS, Paris 2001).

²⁰ Vandewalle, *Région de Dunkerque*.

²¹ D. Rosselle, 'Le long cheminement des progrès agricoles. Le Béthunois du milieu du XVI^e au début du XX^e siècle' (unpublished thesis University of Lille III, 1984).

²² G. Lemarchand, *La fin du féodalisme dans le pays de Caux. Conjoncture économique et démographique et structure sociale dans une région de grande culture de la crise du XVII^e siècle à la stabilisation de la Révolution (1640–1795)* (1989).

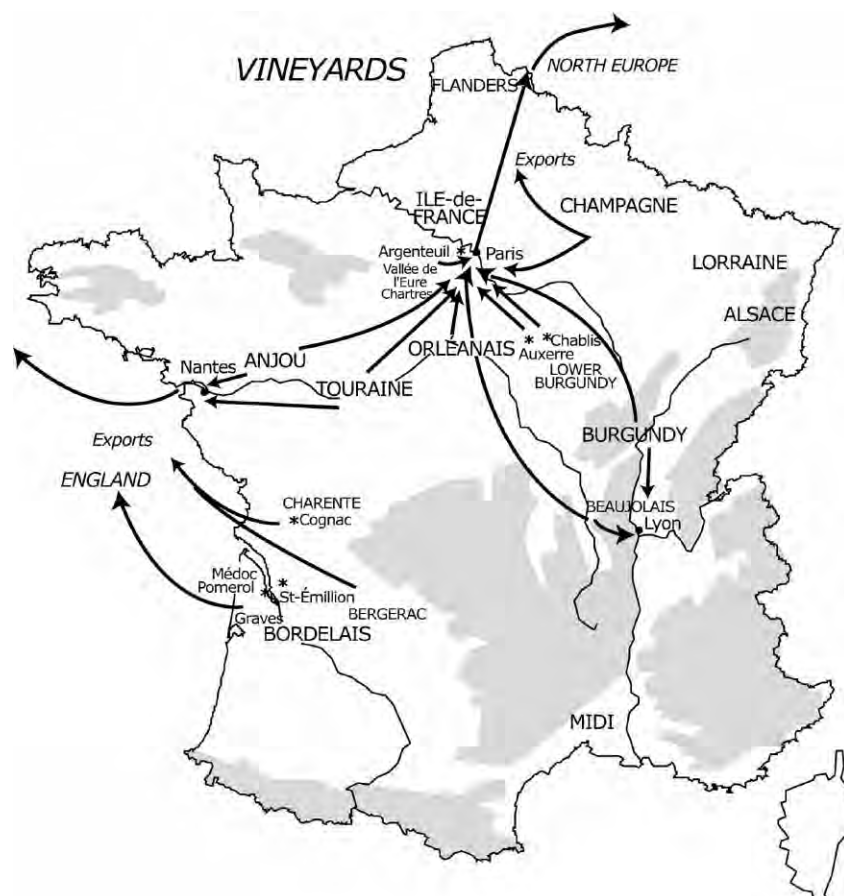


FIGURE 8.1C.
Alternative agriculture
in France: Vineyards.

A sixth non-food crop was tobacco. It was commonly grown in Maritime Flanders at the end of the *ancien régime*. During the American War of Independence it covered one per cent of cultivated land but disappeared completely during the French Revolution. It was also found in the adjacent Béthune region.²³ In Alsace it grew in importance, together with saffron and mustard, and occupied 4000 hectares (10,000 acres) in 1808. By 1718, 80,000 quintals (8000 tons) were produced annually and, in 1789, 100–120,000 quintals (10 to 12,000 tons), before it declined to be replaced by hops, a crop also grown in the Nord.²⁴ Tobacco was very profitable and had the great merit of preparing the ground for grain.²⁵

Finally, there were vineyards (see Figure 8.1c). Among specialized crops, vine growing had a particular role and, as many historians have noted, a huge importance for rural society. Viticulture was severely affected by the harsh winter of 1709 when many of the vines were destroyed by frost, but quickly recovered and by 1789 covered a much greater area than it had two centuries earlier.²⁶ Statistics for 1789 provide reasonably reliable figures of the area

²³ Vandewalle, *Région de Dunkerque*.

²⁴ Boehler, *Plaine d'Alsace*.

²⁵ Rosselle, *Béthunois*; Boehler, *Plaine d'Alsace*.

²⁶ R. Dion, *Histoire de la vigne et du vin en France des origines au XIX^e siècle* (1959; repr. 1977).

under vines. Vineyards took up about 1.6 million hectares (4 million acres), perhaps five per cent of the total cultivated area. Wine was a much higher proportion of national agricultural production, exceeding 10 per cent, with an average production of 27 million hectolitres a year.²⁷ The major areas of production and the flow of wine are shown in Figure 8.1c.

The Bordeaux region shows how important wine production could become in an area where it had three factors favouring it: the initiatives taken by great landowners, particularly aristocrats; entrepreneurship among wine merchants; above all the opportunities provided by the market. Near Lyons, Beaujolais was highly successful, while near Paris the vineyards spread over a considerable area and whole parishes were entirely covered with vines. It is easy to forget that the Île-de-France was one of the bigger wine-producing regions of France. In Argenteuil, for example, vines covered almost all its 1000 hectares (2500 acres), more than any other parish in France. The pursuit of high yields in response to increasing demand was the cause of the deterioration of wine quality around Paris. While high-quality vineyards produced ten to fifteen hectolitres per hectare, the vineyards around Paris were making fifty or sixty. Growers near Paris relied on Gamay and other high-yielding grape varieties, even though the quality of the wine was not very good.²⁸ The impetus for change in these two cases came from the small producer, and not from the aristocracy.

II

Although it appears that cattle were distributed fairly evenly across France, they were particularly numerous in mountain areas and the surrounding foothills, where farmers could take advantage of high summer pastures. Numbers were also high in some regions in the north, where they benefited from new rotations which allowed them to be kept in stalls and fed on oil cake, and notably in Normandy, where speculative fattening developed on rich grasslands.²⁹

Although cattle numbers were relatively widely distributed, there were distinct regional differences in livestock farming. Some regions had already specialized. There was a traditional distinction between milk-producing mountain regions, and those hill areas producing beef cattle. The former had been making cheese for a long time, for instance in the Beaufortain (in Savoy) or in the Auvergne around Salers or Saint-Nectaire,³⁰ where upland areas also concentrated on the production of animals destined, sooner or later, for the butcher. Meat-producing livestock systems were integrated into complex networks in which the livestock were kept for a period in one region, then sold at specialist cattle markets and sent on to another place to be fattened. There were regions that specialized in breeding animals, for example, Lower Brittany and the Auvergne, which sold on calves or bullocks. Other regions, particularly Normandy, specialized in fattening animals, before sending them to urban markets. Cattle

²⁷ M. Lachiver, *Vins, vigne, vigneron. Histoire du vignoble français* (1988).

²⁸ G. Durand, *Vin, vigne et vigneron en Lyonnais et Beaujolais* (1979); M. Lachiver, *Vin, vigne et vigneron en région parisienne du XVII^e au XIX^e siècle* (1982).

²⁹ J.-M. Moriceau, *Histoire et géographie de l'élevage*

français. Du moyen âge à la Révolution (2005).

³⁰ H. Viallet, *Les alpages et la vie d'une communauté montagnarde: Beaufort du moyen âge au XVIII^e siècle* (1993); A. Poitrineau, *La vie rurale en Basse-Auvergne au XVIII^e siècle (1726-89)* (2 vols, 1965).

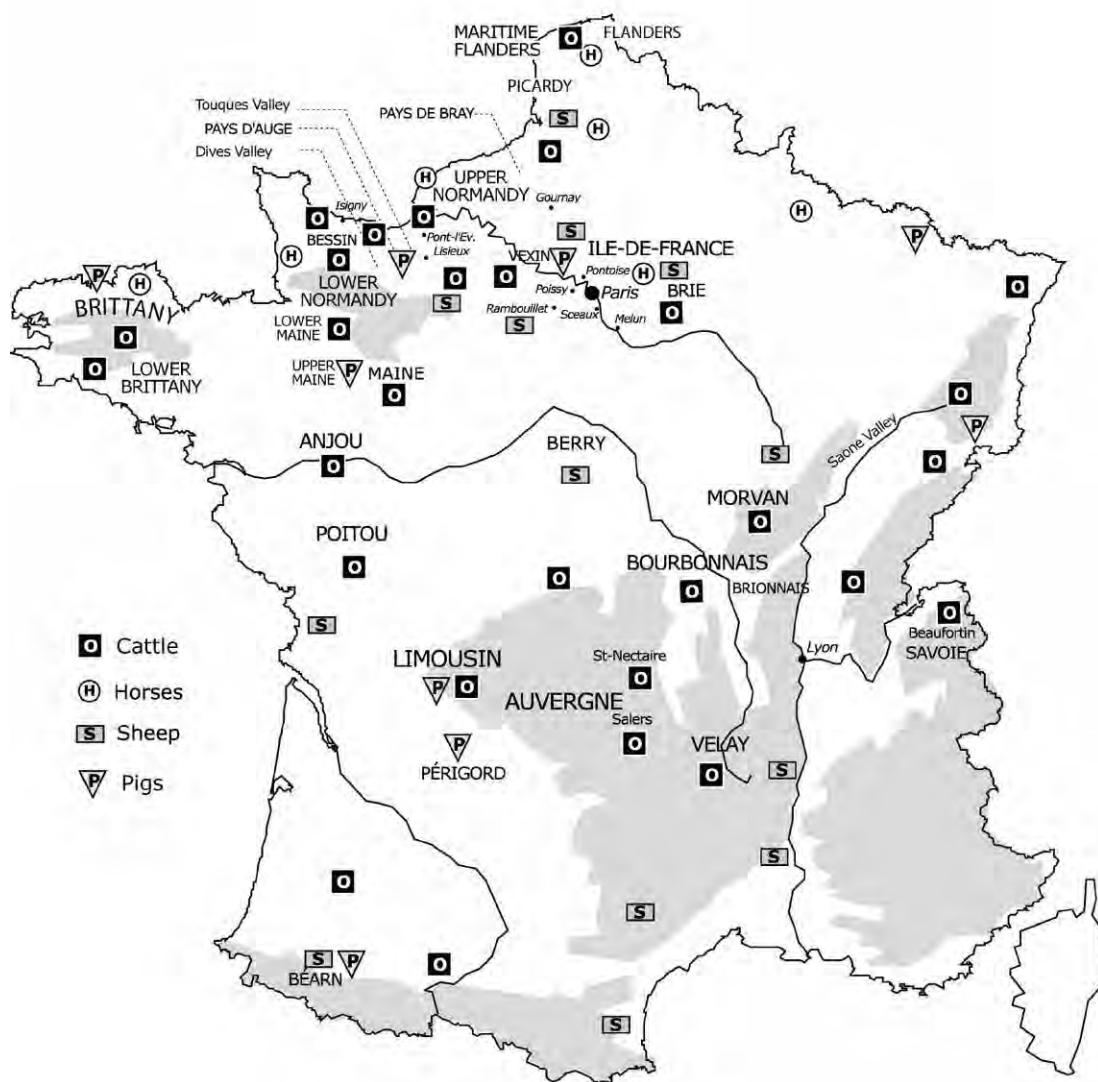


FIGURE 8.2. Livestock in France.

were put out to grass in the Pays d'Auge, the Bessin, and the Cotentin.³¹ In the Pays d'Auge, the land in the two valleys of the Dives and the Touques had been put to this use at an early date and, by the eighteenth century, meadow and pasture took up 95 per cent of the land. Hay meadows spread out beyond the valleys around Pont-l'Évêque: 75 to 80 per cent of the land there was under grass. This specialization continued during the eighteenth century and was extended to new areas. For instance, in the Bessin around Isigny, where at least

³¹ B. Garnier, 'Pays herbagers, pays céréaliers et pays "ouverts" en Normandie (XVI^e-début du XIX^e siècle)', *Revue d'Histoire Économique et Sociale* 53 (1975), pp. 493-52; B. Garnier, 'La mise en herbe dans le Pays d'Auge aux XVII^e et XVIII^e siècles', *Annales de Normandie* 25 (1975), pp. 157-80.

three-quarters of the land was laid down to pasture by the beginning of the nineteenth century. Although the proportion of meadow fell with distance from urban centres, the total pasture area in the Bessin doubled between 1750 and the early nineteenth century, with farmers specializing in butter production rather than beef cattle.

Much of land under grass was used to fatten beef cattle for the Paris market (Figure 8.3a). These had been bought in the Massif Central (Limousin) or other regions of the west (Poitou, Maine, Anjou, Brittany). Paris consumed huge numbers of animals. In 1737 105,000 cattle were sold at the markets in Sceaux and Poissy, from which they were driven to Paris. Sixty per cent of those cattle came from Normandy. The proportion was a little less seventy years later, as the numbers of cattle coming from Maine and Anjou grew.³² The cattle were driven long distances, which left them exhausted, so they were pastured for a time in meadows near Paris before being sent to the butchers. A high proportion of these cattle were slaughtered and consumed in Paris itself. The numbers passing through the toll booths or *octrois* that stood at all entrances to the city grew from 43–44,000 around 1635 to 60,000 around 1715 and 80,000 around 1789. The same growth can be observed at Lyons, which was supplied from the Velay or the hay meadows of the Saône valley: 1000 head of cattle in 1714 grew to 9000 in 1748, and 16,000 in 1773. One area that saw a major shift in its agrarian structure, the Brionnais, had been classic grain country but, during the seventeenth century and particularly during the eighteenth, shifted to become a grazing area, an '*embouche*' like Normandy where lean cattle bought in the Bourbonnais were fattened to be sold in Lyons or even Paris.³³ In the Limousin and the Morvan, animals were fattened either directly for the Paris butchers, or more often sold on from farmer to farmer through complex networks in Normandy. Another case study is Lower Maine, where so-called '*bouvards*', some bought in from other regions, others reared there, were sold at six to eight years old to graziers in Normandy.³⁴ But this was only one of several models for livestock farmers in the regions. Others sold two- to three-year-old heifers on to Paris, or specialized in dairy farming.

The breeding of milk veal calves, fed only on milk and never grass, was a more speculative business. Paris's appetite for this white and tender meat increased throughout the eighteenth century and on into the nineteenth. During the eighteenth century around 100,000 veal calves a year were sold in the Paris market.³⁵ This trade began in Lower Normandy in the seventeenth century but developed in Upper Normandy near Rouen, and rapidly spread into the Vexin near Pontoise, nearer Paris, the point from which the veal calves could be carried to Paris by boat avoiding the need to be driven.³⁶ Graziers bought so called 'river veal', fed as many as they could on milk from their own cows, and later with milk mixed with water,

³² B. Garnier, 'L'élevage et la commercialisation des boeufs en Basse-Normandie (1750–1900)', in A. Antoine (ed.), *Des animaux et des hommes. Économie et sociétés rurales en France (XI^e–XIX^e siècles)*, (Annales de Bretagne et des Pays de l'Ouest, 106, 1999), p. 1.

³³ P. Durix, 'Les structures économiques et sociales dans le Brionnais oriental aux XVI^e et XVII^e siècles' (unpublished thesis, University of Dijon, 1983).

³⁴ A. Antoine, 'Les bovins de la Mayenne (1720–1820).

Un modèle économique pour les campagnes de l'Ouest?' *Histoire et Sociétés Rurales* 4 (1995), pp. 105–36; ead., 'L'élevage en France, XVII^e–XVIII^e siècles' in *La terre et les paysans. Productions et exploitations agricoles aux XVII^e et XVIII^e siècles en France et en Angleterre* (1999), pp. 7–60.

³⁵ Abad, *Grand marché*, p. 384.

³⁶ *Ibid.*, pp. 307–21.

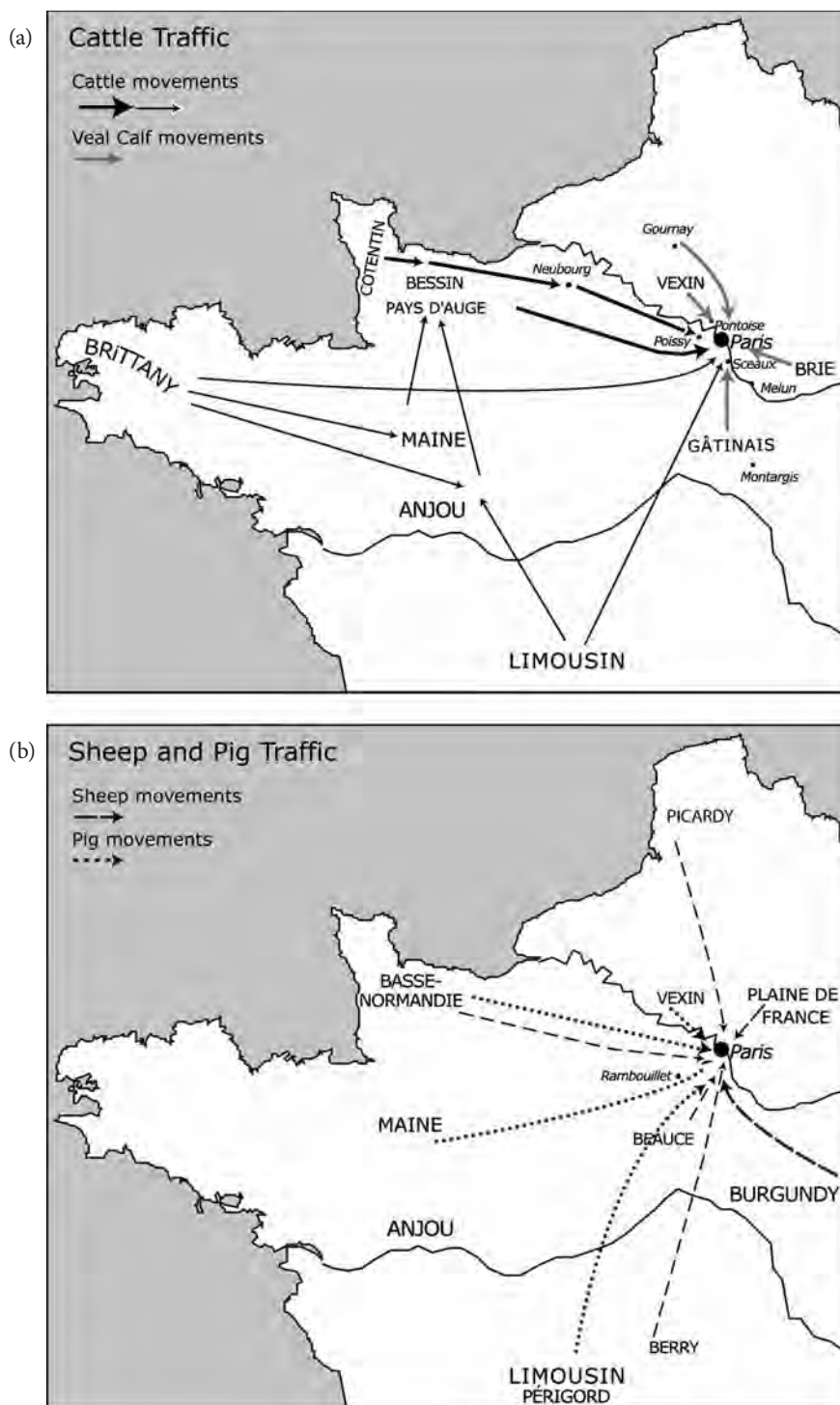


FIGURE 8.3. Provisioning Paris.

so that the animals would be as young and tender as possible to fetch a very high price on the Paris market.³⁷ We can find other livestock specialisms in the eighteenth century. In the Pays de Bray, near Gournay, the pastures had been used for dairying since at least the sixteenth century.³⁸ Its butter and milk veal trade surpassed that of Issigny, which was to become famous in the seventeenth century. Some of this butter was exported, as it was from Brittany.³⁹ Paris was supplied with sheep from Beauce, Île-de-France, Berry and Limousin, some fattened on enclosed pastures, but mainly fed on open fields after harvest to provide manure for next year's crop. Around 400,000 were sent to Paris every year (Figure 8.3b).⁴⁰ Finally, we should not ignore the horse trade. Merchants from Normandy bought young horses at the fairs of north Brittany at the end of the seventeenth century, while horses from Picardy and Flanders were bought and sold in the fairs of the Île-de-France.⁴¹ In general, livestock farming grew as the production of new fodder crops expanded from the sixteenth and seventeenth centuries onwards, while there is little evidence of selective breeding before the late eighteenth century. One striking feature is that (apart from Normandy) those areas specializing in breeding and grazing for the butcher's trade coincided with areas where *métayage* (share farming) was prevalent.⁴² Furthermore it is clear that livestock farming was a speculative and market-orientated business across much of eighteenth-century France, even in those areas historians have considered backward.

III

It is not hard to demonstrate the existence of commercial farming and long-distance trade in foodstuffs in eighteenth-century France, and the elaborate marketing structures that underpinned these trades. What conditions favoured the development of agricultural specialization in France? We can perhaps identify three factors: the spread of ideas and innovations, the importance of markets, and the role of the peasant farmer.

(a) *The spread of ideas and innovations*

It is clear that the government took steps to encourage agricultural innovation. It is easy to find evidence of government initiative at a local level even where it was only partially successful. Government encouraged some crops with support payments and tax exemptions, and tried to introduce new seeds and new breeds. The main thrust of state action was to improve livestock, particularly sheep breeds. Several attempts were made to cross local breeds with Spanish rams, but the opening of the national sheep farm at Rambouillet in 1786 and the

³⁷ O. Fanica, 'La production de veau blanc pour Paris. Deux siècles de fluctuations (XVII^e–XX^e siècles)', *Histoire et Sociétés Rurales* 15 (2001), pp. 105–30.

³⁸ J. Sion, *Les paysans de la Normandie orientale. Pays de Caux, Bray, Vexin Normand, vallée de la Seine. Étude géographique* (1909).

³⁹ Meyer, *Noblesse bretonne*; Antoine, *Élevage en France*.

⁴⁰ Abad, *Grand marché*, p. 384.

⁴¹ A. Croix, *La Bretagne aux 16^e et 17^e siècles. La vie, la mort, la foi* (1981), p. 46; J.-M. Moriceau, *Les fermiers de l'Île-de-France. L'ascension d'un patronat agricole (XV^e–XVIII^e siècles)* (1992; new edn, 1994), pp. 281–2.

⁴² F. Spindler, 'Le métayage et l'orientation de l'élevage en France. Le développement des races bovines à viande', in G. Béaur, M. Arnoux and A. Varet-Vitu (eds), *Exploiter la terre. Les contrats agraires de l'antiquité à nos jours* (2003), pp. 267–76.

arrival of some merinos was the most significant event in this movement. The adoption of merinos really started in 1796, when new flocks arrived from Spain, after which they spread rapidly. Flocks improved dramatically and the size of fleeces for the textile industry increased spectacularly.⁴³

Encouragement for the introduction of alternative crops came above all from the agricultural societies that proliferated in the second half of the eighteenth century.⁴⁴ Notable individuals also played their part. For instance, in Alsace, Michel North of Furdenheim in the Kochersberg introduced a new variety of coleseed and grew madder from 1772, while the postmaster at Stutzheim also introduced madder, illustrating the role of postmasters in agricultural progress.

New crops were not universally received with enthusiasm. First, alternative crops were believed to require a great deal of additional labour, in particular repeated hoeing and the application of massive amounts of fertilizer. Alternatively, they exhausted the soil and the seeds were difficult to find or costly to buy. Secondly, they took up a share of precious arable land and reduced the area sown for grain. Let us take two examples. Madder needed four ploughings and fifty carts of manure to the arpent (approximately one acre). It occupied the ground for eighteen months and it needed to be dried, putting pressure on the supply of wood. Its worst sin was that it supplanted grain and encroached on communal lands; for these reasons, it worried the authorities. Critics argued that it was taking over one fifth of the agricultural land in Kochersberg, the traditional breadbasket of Alsace, which would reduce the supply of food. Growing it on communal land reduced the number of livestock that could be maintained and produced a shortage of manure. Its excessive demands – for fertilizer, labour, and land – were seen as a threat to the grain supply. After 1785 it was grown less in Hagenau, where it had been most popular.⁴⁵ However, government anxieties did not prevent its adoption in neighbouring areas and peak production was reached under the Napoleonic Empire.

For similar reasons, throughout the early eighteenth century the state opposed the expansion of vineyards. Growth in areas under vines and in wine production came despite state restrictions over a long period. The famous and often cited edict of 1731 marks the high point of this struggle against the proliferation of vines, forbidding new planting, and threatening them with uprooting. In fact this edict simply systematized previous partial prohibitions, indicating how unhappy the authorities were when confronted with a development that threatened not only the sacrosanct grain fields, but also pasture. Government was also concerned to reduce the amount of wood used for stakes and barrels. But members of the Parlements who owned large vineyards were selfishly more concerned about the harm done to their interests – brought about by the deterioration in the quality of wine and falling prices as a result of increased vine cultivation – than by a hypothetical lack of grain.⁴⁶ Similar edicts were issued from 1722 onwards for Anjou, Touraine, the Bordeaux region, Champagne, and Alsace.

⁴³ J.-C. Farcy, *Les paysans beaucerons au XIX^e siècle XVIII^e siècle* (1967). (1989).

⁴⁵ Boehler, *Plaine d'Alsace*.

⁴⁴ A. Bourde, *Agronomie et agronomes en France au*

⁴⁶ Lachiver, *Vignoble français*.

These measures failed totally, despite fines and the destruction of vines. Vineyards continued to spread, and the government tacitly refrained from applying the measures, finally suspending the edict in 1759, because public opinion had changed. The physiocrats' great enthusiasm for agriculture favoured crops that produced high revenues, and the 'planting rage' was matched by rapidly increasing consumption. Eventually huge wine harvests of declining quality triggered a ten-year-long crisis, about which historians have written at length.⁴⁷

It was at times when famine seemed to threaten that new crops were especially viewed with scepticism or hostility. People called for the suppression of coleseed and the destruction of vines, and opposed all crops that did not produce staple foods for the population.⁴⁸

(b) *The role of markets*

J.-P. Poussou highlighted the importance of the market for the expansion of alternative agriculture.⁴⁹ It was significant for all such products, but the example of wine provides the most fully documented case study of the motivating effect of the markets.

The growth of the wine industry was driven by sustained urban demand, particularly from Paris, which was growing rapidly throughout this period. According to Lavoisier, Paris alone absorbed some 700,000 hectolitres of wine on the eve of the Revolution. Parisian demand stimulated production by small, independent producers nearby, just as Lyons stimulated the growth of Beaujolais.⁵⁰ In both Paris and Lyons each person consumed about half a litre every day. As we saw, vine growers in the Île-de-France planted lower-quality root stock to maximize production. Paris's role in the deteriorating quality of French wine was all the greater because the metropolis drew in wine from more distant regions such as the Auxerre region of Lower Burgundy, which suffered similar dramatic deterioration. Chablis alone survived because it was less closely linked to the Paris market. In contrast, the wines of the Midi, although possessing similarly fashionable characteristics, were sold outside the region only with difficulty because of their distance from the Paris market and restrictions put on their distribution.⁵¹ Furthermore, producers shifted their production to red wine and gradually gave up white wine because of consumer preference.

Expanding wine production was also dependent on the export market. The success of Bordeaux wines lay in the export opportunities afforded by a major port, and its successful penetration of the English and northern European markets, which took a liking to the new French claret. Bordeaux had been known for a long time, but unsurprisingly, by the end of the eighteenth century, the Bordeaux region, particularly the Medoc area was overproducing wine, with many parishes dominated by vineyards.⁵² This was the first 'wine lake'. Aristocratic wine

⁴⁷ E. Labrousse, *La crise de l'économie française à la fin de l'ancien régime et au début de la Révolution* (1944; new edn, 1990). For a critical view, see M. Morineau, 'Esquisse et crise. Une relecture nécessaire d'Ernest Labrousse', *Annales Historiques de la Révolution française* 68 (1996), pp. 77–107.

⁴⁸ O. Festy, *L'agriculture pendant la Révolution française. Les conditions de production et de récolte des céréales. Études d'histoire économique (1789–95)* (1947),

and id., *L'agriculture pendant la Révolution française. L'utilisation des jachères, 1789–95* (1950); Lachiver, *Région parisienne*; id., *Vignoble français*.

⁴⁹ Poussou, 'Alternative cultures'.

⁵⁰ Lachiver, *Région parisienne*; Durand, *Lyonnais et Beaujolais*.

⁵¹ Dion, *Vigne et vin*.

⁵² R. Pijassou, *Un grand vignoble de qualité, le Médoc* (1980).

producers, or those from the Bordeaux bourgeoisie, could concentrate on producing quality wines, but the small producer found it very difficult to maintain a high-quality product.⁵³

There is insufficient space to discuss all the main wine-producing areas of modern France, but one wine was prodigiously successful – Champagne, a naturally sparkling wine created by a second fermentation. Without the English adoption of Champagne during the Regency period, it would never have been as successful.⁵⁴ Finally, sweet white wines, such as Monbazillac from Bergerac and Sauternes from Bordeaux also depended on overseas markets. They were very popular in Holland, as were the white wines from Charente, which declined from the sixteenth century onwards under pressure from Dutch merchants. In the eighteenth century most production in the Charente was destined for the distillery, where after 1720 it developed its own brand, Cognac.

In general, alternative agriculture was linked to urban, industrial, or export demand. For instance the tree merchants (*marchands d'arbres*) of Vitry near Paris began to grow and sell young trees to landscape the parks of a wealthy aristocratic and bourgeois clientele. They uprooted their vines and used the land to develop this speculative product from which they earned much more than they did from viticulture.⁵⁵ However, most of the output from new crop and livestock production was aimed either at local markets where producers were not too far from a town, or was sent to fairs. Either the small producers themselves, or traders who collected products from the farm or who bought at smaller markets, carried the cheese, butter, eggs, poultry, and all kinds of fruit and vegetables, using carts, hand carts, or baskets, according to the weight of the product and the distances involved, to the nearest urban market for urban consumers, or on to major urban centres through regional merchants.⁵⁶ Only the graziers in Normandy were strong enough to retain control of the beef trade with Paris.

(c) *The role of the peasant farmer*

Large numbers of small producers in the suburbs and adjacent parishes of every significant town produced fruits and vegetables for the urban population, or developed other niche products. Market gardens supported a whole population of small producers on miniscule plots of land.⁵⁷ While many peasants profited from living close to towns, others grasped the opportunity to export their products because they lived near the sea. For instance, some small producers on the coast of Brittany were producing raw materials for the region's textile industries.

Vines were grown almost everywhere and a great number of small producers lived off them. For an equivalent area of land even a poor quality wine brought in two to three times as much income as grain production.⁵⁸ A vine grower could live well from one hectare (2½ acres) of land, or even a quarter hectare (just over half an acre) in the Bordeaux region if he made

⁵³ H. Enjalbert, 'La naissance des grands vins et la formation du vignoble moderne de Bordeaux (1647–1767)', in *Géographie historique des vignobles* (2 vols, 1978), I, pp. 59–88 and 'Comment naissent les grands crus: Bordeaux, Porto, Cognac', *Annales ESC* 8 (1953), pp. 315–28; J.-P. Poussou, *Bordeaux et le Sud-Ouest au-XVIII^e siècle. Croissance économique et attraction urbaine* (1983).

⁵⁴ T. Brennan, *Burgundy to Champagne. The wine trade in early modern France* (1997).

⁵⁵ Traversat, *Pépinières*.

⁵⁶ D. Margairaz, *Foires et marchés dans la France préindustrielle* (1988).

⁵⁷ Boehler, *Plaine d'Alsace*.

⁵⁸ J. Vassort, *Une société provinciale face à son devenir. Le Vendômois aux XVIII^e et XIX^e siècles* (1995).

quality wine. With a two-hectare (five-acre) holding, his family would be employed on the various tasks of wine making throughout the year.⁵⁹

Madder was particularly suitable for small farms because it took up only a small space. Where there was plentiful labour available for its cultivation, it brought in additional money for the smallholder. In the same way, although hemp polluted the water supply and contaminated the grass, it was a boon for the peasant with little land. Finally mulberry trees required very little investment, and brought in large profits, eighteen times more than cereals on the same amount of land, and the silkworm cocoons were extremely light and easy to transport.⁶⁰

IV

J.-P. Poussou pointed out (in contrast to Joan Thirsk) that specialization spread during a period of high prices during the eighteenth century, and was aided by favourable circumstances in so far as it depended on developing markets.⁶¹ Four main points need further attention.

Firstly there were at least three reasons why peasants paused for thought before choosing to grow crops destined for the market:

1. The impact of information flows. The agronomists' ideas were not always very effectively diffused. Peasants looked at many of their ideas, but often remained sceptical. A lack of scientific knowledge and expertise helps explain the slow diffusion of new crops. Peasants wondered whether they were useful, beneficial, or potentially dangerous, and it is understandable that they greeted new crops and techniques with suspicion, and only adopted them gradually.
2. Risk. The smallholder did not have great reserves. To introduce new crops, he usually needed to reduce both the area allotted to traditional ones and the labour applied to them. How prudent was it to pay less attention to well-proven crops and instead concentrate on poorly understood new ones? Such a bold step had its dangers, and could just as easily lead to the ruin of the farmer, or starvation for the smallholder as it did to increased production and profits. The danger was greater because the price of new crops could suddenly collapse if demand failed, and within a few years a crop could disappear. This was particularly the case with industrial crops like madder or mulberry trees, or even with tobacco.⁶² What farmer would be foolhardy enough to experiment on a large scale without really understanding the extent of his risk?
3. The lack of capital and land. Most producers of alternative crops were smallholders. While they could easily mobilize family labour, which was otherwise underemployed, to provide the additional labour required by new crops, they found it more difficult to raise money and provide sufficient land. Again, who would take the risk of buying seed and taking part of his land out of cereal production?

Secondly, specialization was very often found on small or very small farms. Small scale

⁵⁹ Durand, *Lyonnais et Beaujolais*.

⁶⁰ Molinier, *Vivarais*.

⁶¹ Poussou, 'Agriculture alternative?'

⁶² Boehler, *Plaine d'Alsace*, for madder, Vandewalle, *Région de Dunkerque*, for tobacco and Molinier, *Le Vivarais*, for mulberry trees.

farming was traditionally thought to be self-sufficient, outdated, tied to tradition, hostile to innovation and resistant to progress, but is now being rehabilitated and used as a model for larger enterprises which in their turn are being accused of immobility, enslavement to cereal growing and traditional agricultural methods. This reversal is of course much exaggerated, because we know that large farmers in France were both dynamic and inventive, and that by no means all small farms were becoming market-oriented. Nevertheless small-scale farming could provide a path to capitalist agriculture, because of its strong links to the market, and was an additional agent of economic development in the French countryside.

Thirdly, the historiography has been dominated for a long time by themes of self-sufficiency and autarky, as well as backwardness. It was assumed that peasants were determined to increase production of subsistence crops and were fundamentally averse to the market. This explains why French historians worked to ascertain what was the threshold size of the autonomous peasant holding, and what proportion of peasants were able to free themselves from involvement in the market by living from the produce of their own land, which was defined as the gross product minus dues, taxes and rents. In fact few peasants reached or surpassed the minimum size for self-sufficiency. The great majority did not have enough land to be completely self-sufficient, and only a minority had surplus crops to market for profit. They were of necessity immersed in the market economy, either by providing labour on larger farms, by seasonal employment, or by commercial links to urban markets. Peasants were not all excited by specialization and the market, nor were they all fond of alternative crops, but nevertheless self-sufficiency in pre-industrial France was in large part a myth.

Fourthly, specialization and alternative crops could not spread everywhere. They generally needed:

1. A high population density, since these crops required much more labour than grain. It is not surprising to learn that regions of high population density, such as Alsace and Flanders, were involved in those alternative crops where high labour inputs were the key to expansion.⁶³
2. The availability of sufficient additional fertilizer for highly productive crops. The larger the town, the more plentiful the supply of refuse and waste available for cultivation. Around Paris, blood, woollen rags, bone meal, horseflesh, shavings of cattle horns, not forgetting *la poudrette* (desiccated human waste), were all used to supply other mineral elements.⁶⁴
3. Proximity to a large body of consumers and easy availability of adequate transport facilities. Given the available transport, products had to be able to move themselves (livestock), or be not too heavy compared to their value (spirits, vegetables), if they were not to become too expensive to move long distances. So apart from very specific products, only regions close to towns were guaranteed ready access to markets.
4. The possibility of buying food easily, in so far as peasants ceased to produce their own food, or a major part of their own food. In practice, there were few monocultures, and

⁶³ Boehler, *Plaine d'Alsace*; Rosselle, *Béthunois*.

d'Ormesson (1700–1840). *Essai d'analyse économique*

⁶⁴ Rosselle, *Béthunois*; J.-M. Chevet, 'Le marquisat

(unpublished third cycle thesis, EHESS, Paris, 1984).

it was very unusual for peasants not to grow at least a few acres of cereals for their own consumption. Even vine growers who rarely drank their own wine usually grew fields of cereals. For instance in the Eure valley near Chartres, a vine grower had on average 16 ares (about 0.4 acres) of vines to 30 (about 0.75 acres) of cereals.⁶⁵ In general, land growing alternative crops was integrated into rotations, for example in Alsace, where J-M Boehler has described what he calls the 'disorganization' of land.⁶⁶ There, a whole range of plants succeeded each other in calculated disorder to enrich and cleanse the soil, eventually leaving plots covered in a patchwork manner. Even livestock farming was not an isolated activity, and the *métairies* of Maine were both grazing and grain-growing farms.⁶⁷ The need to grow food explains why cereal growing was never completely abandoned, and why there was a certain blurring of specialization at a regional level. What would have become of livestock farming in the Pays d'Auge or Bessin without the adjacent intensive grain-producing areas on the plain of Caen? Could market gardening, or wine growing, have been successful without the proximity of the rich silt tablelands of the Île-de-France, or Beauce? Could alternative crops have expanded in Flanders without the grain from Cambrésis or the Artois region? Farmers needed to be close to water or a zone of cereal production to be able to redirect themselves towards alternative crops or specialization. In a word, without access to low price cereals, alternative crops would not have proliferated. Their dependence on grain-producing areas was real.

So, we argue for a France of much greater sophistication and market-orientation in the century before the Revolution than has sometimes been acknowledged. While, in the right conditions, opportunities for the adoption of new, non-food crops abounded, especially in areas of high population density, there were compelling reasons why the adoption of these crops should have been halting. Not only were peasants themselves suspicious of their merits and constrained by factors such as lack of capital, government itself was ambivalent about any agricultural change that might diminish the supply of grain to urban markets. While subsistence farming in France was a myth, the tyranny of grain had not yet disappeared.

⁶⁵ G. Béaur, 'Land accumulation, life-course and inequalities among generations in eighteenth-century France. The vine growers from the Chartres region', *The history of the family* 3 (1998), pp. 285–302.

⁶⁶ J.-M. Boehler, 'La petite culture en Alsace au XVIII^e siècle', *Histoire et Sociétés Rurales* 4 (1995), pp. 69–103.

⁶⁷ A. Antoine, *Fiefs et villages du Bas-Maine au XVIII^e siècle* (1994).

Producers, crops and markets, 1600–1800

by John Chartres

Early modern Britain showed a distinctive facility for agricultural change. The flexibility of its farmers' responses to changing market and political conditions, especially from the mid-sixteenth century, provided the key to an extended process of 'improvement' in agriculture. From the middle decades of the seventeenth century this bore fruit in the reduction of the threat of dearth in grains, and with this, the evolution of regional and local change in land use led to a more specialized and integrated market for foodstuffs. In turn, this enabled growth through what Richard Britnell has summarized as the 'Smithian' model.¹ It also underpinned Robert Brenner's neo-Marxist identification of 'agrarian capitalism' as a transforming influence from a 'feudal' society.² Subsequent changes to market and transport systems enabled Britain to both feed itself and industrialize incrementally without conceiving change in 'revolutionary' terms. Modern historiographical fashion thus emphasizes evolutionary change in both industry and agriculture as the key to understanding Britain's transformation by the middle of the nineteenth century into an urban and industrial society, still largely self-sufficient in foodstuffs.

Some of these elements can be seen as having direct continuity, with the market already determining rising farm incomes in the later middle ages, particularly the fifteenth century. The differences perhaps lay in their being more widely diffused and sustained.³ The end of civil war at the end of the fifteenth century was accompanied by the beginnings of the sustained rapid growth of London and a number of other large towns, and by a strong, if increasingly indirect, export trade in wool, sustained into the 1540s. For the subsequent centuries, such forces came to apply with still greater force. The island of Britain as a whole came to offer integrated market potential with the pacification of the Welsh marches and then the absorption of Wales under the crown in 1536; parallel benefits were gained in Anglo-Scottish relationships

¹ R. H. Britnell, 'Agriculture, marketing and rural change, 1100–1500', above, pp. 107–20.

² R. Brenner, 'Agrarian class structure and economic development in pre-industrial Europe', *Past and Present* 70 (1976), repr. with a large number of subsequent contributions to the debate, in T. H. Aston and C. H. E. Philpin (eds), *The Brenner debate: agrarian*

class structure and economic development in pre-industrial Europe (1985), pp. 10–63.

³ B. M. S. Campbell, J. A. Galloway, D. Keene, and M. Murphy, *A medieval capital and its grain supply: agrarian production and distribution in the London region c.1300* (1993).

after Flodden (1513), and enhanced with the union of the crowns in 1603, which significantly reduced the running sore of the French 'auld alliance' as major strategic issue, although it was not until after the Civil War, in which Scotland had played a major role, that military invasion from the north was removed as a threat to England.

To these new conditions of peace, and of a politically integrated island, we can add those of rapidly accelerating urban growth, and a movement of urban population towards the larger towns; the development of improved internal communications; and, from the later seventeenth century, explicit government support for export markets. To all of these, as will be argued in this chapter, we can add the increasingly important role of Ireland in an integrating 'islands' agricultural market, increasingly making effective gains from specialization and demonstrating a very flexible response to market changes. This chapter explores a number of case studies of these processes, and in conclusion reflects on their role in helping to make the United Kingdom a very distinctive farm economy in Europe by the earlier nineteenth century. Ironically, this very 'success' and openness of agriculture in the United Kingdom to change may have eased the inversion of its produce market in the mid- and later nineteenth century, as the British farmer became perhaps Europe's first major victim of what we now know as globalization.

I

The suggestion of continuity with the later middle ages is significant because the primary institutional frameworks of marketing in the sixteenth century and after were largely medieval creations. Their value and significance can be seen by the creation of new markets and fairs in less developed regions of early modern Europe, notably Ireland and south-west France.⁴ Expectations of the benefits of regulated markets thus provided an element of continuity, particularly in the middle years of the sixteenth century, when dearth, high prices, currency manipulation, and the Reformation enhanced popular adherence to organic views of society, in England finding expression in the word 'commonweal'. For food marketing, this meant a heightened if anachronistic attachment to policies of plenty, to the open, regulated market place, and hostility to the agencies of change and interregional trade, the middlemen.

From this context comes Figure 9.1, taken from Hugh Alley's *Caveat* of 1598. Though satirical or ironic in purpose, it provides a neat illustration of London's Cheapside Market. Traders from London, and its immediately surrounding counties – Middlesex, Essex, Kent, Surrey, and Hertfordshire – are sketched with a shopper, a porter, and woman riding side-saddle, presenting a normative statement of a market place and urban supply. It signified the more general challenges to the traditional market, and indicated that these were cultural as well as economic in character. As we shall see below, the long term impact of economic forces required change in the traditional weekly or twice-weekly market, but the cultural acceptance of the implications of economic changes was slow to develop: for the whole of our period the experience of dearth initiated protest, conspiracy theories of high prices, demands for the

⁴ D. Dickson, *Old World colony: Cork and South Munster, 1630–1830* (2005); J.-P. Possou, 'Agriculture et commerce au 18^e siècle: l'exemple du Sud-Ouest de la France', in L. M. Cullen and F. Furet, *Ireland et France XVII^e–XX^e siècles: pour une histoire rurale comparée* (1980), pp. 99–115.



FIGURE 9.1. London's Cheapside Market in the late sixteenth century.

Source: Hugh Alley, 'A Caveatt for the City of London', Folger Shakespeare Library, Washington, DC, Folger Ms V.a.318, f.15. I am indebted to the Folger Library for permission to reproduce this page. For a full critical introduction to the Ms, see Ian Archer, Caroline Barron and Vanessa Harding (eds), *Hugh Alley's Caveat: The markets of London in 1598*, Folger Ms V.a.318, London Topographical Society Publication, 137, 1988.

restoration of true prices, and a moral economy that validated seizure and direct sale of grain and other goods at fair prices, the direct equivalent of sixteenth-century 'good cheap'.⁵

By the beginning of our period, the stock of these urban, regulated markets may already have passed its peak. There were new creations, of course, where industrial growth took place and effectively created a new town such as Stourport (Worcs.) or where development was being promoted by landlords, as in north Lancashire and Westmorland, where Hawkshead, Shap, and Ambleside were seventeenth-century creations. Colonial activity produced a surge of new

⁵ E. P. Thompson, 'The moral economy of the English crowd in the eighteenth century', *Past and Present* 50 (1971); A. Everitt, 'The marketing of agricultural produce, 1500–1640', in J. Thirsk (ed.), *The agrarian history of England and Wales*, IV, 1500–1640 (1967), pp. 466–592; J. Walter and K. Wrightson, 'Dearth and the social order in early modern England', *Past and Present* 71 (1976); W. Thwaites, 'Women in the market place: Oxfordshire, c.1690–1800', *Midland Hist.* 9 (1984); J. A. Chartres, 'The marketing of agricultural produce, 1640–1750', in Thirsk (ed.), *Agrarian history*, V (ii), pp. 406–502; R. B. Outhwaite, 'Dearth and government intervention in English grain markets, 1590–1700', *EcHR* 33 (1981).

market creations in Ireland, where Dickson's study of south Munster demonstrated this critical 'developmental' facet of the traditional regulated trading institutions of the middle ages: both markets and fairs continued throughout this period to be perceived as the fundamental institutions of trade.⁶ This masked changes taking place *within* the market town.

Counting 'markets' has consistently proven problematic, because our sources contain a ratchet: they record grants or creations, not active stocks, and estimates for the period 1200 to 1482 have ranged between 2800 and 5000.⁷ By the 1690s, contemporary estimates of 'market towns' ranged between 750 and 874 for England and Wales. It is clear that several changes were taking place within this stock of trading centres, as they interacted with agricultural and transport changes. It has been suggested that, over the whole period from 1500 to 1800, a 'shake-out' of the weakest markets was taking place: some, like that at Somerton (Somerset), of which it was said in 1735 that it, 'begins at 12 o'clock and ends at noon', because other proximate centres were stronger. A maximum count of Norfolk's medieval markets produced a figure of 130, but only 31 active markets in the 1690s, and 27 for the eighteenth century. The seventeenth- and eighteenth-century development of a trading urban hierarchy extended the contrasts between those in the upper and lower ranks of the commercial system. Thus a peak stock of 801 for England contrasted with a minimal listing for 1720 of only 574, and 660 in 1792. In Wales – perhaps reinforcing the suggestion of the late commercialization of peripheral regions – the equivalent numbers were 73, 63, and 68, consistently above the level recorded for the period 1500–1640.⁸ Within the conservative count of totals, numbers of active markets ebbed and flowed, before beginning a later decline.

The other regulated institution, the seasonal fair, has historically attracted rather less attention. Modern descriptive analysis has established its listed numbers and the nature of trade, but without the long-term perspective after the early sixteenth century. Work by Richard Britnell and others has delivered a valuable searchable database for medieval fairs, but there has been no long term attempt to plot numbers for benchmark years after 1516.⁹ There has been no detailed assessment of numbers for Scotland since Marwick's listing, made in association with the Royal Commission in 1890.¹⁰ Analysis of the first explicit almanac, Owen's *Book of Fairs* for 1756, indicated 1528 fairs in England and Wales, with a sum of over 3200 scheduled fair days. The latter was probably an underestimate of days available for trade, since surviving toll books indicate that many fairs ran beyond their scheduled minimum. While many were listed, by 1792, as 'toy' or 'pleasure' fairs, implying some sifting out of lesser trade centres from this total, the fair remained a buoyant commercial institution throughout the period, and was especially important for livestock and livestock produce. An important indication of this was found in the greater proportionate share of Wales in the total for England and Wales

⁶ Dickson, *Old World colony*, pp. 22–3.

⁷ Everitt, 'Marketing', pp. 467–80, esp. n. 1, p. 469, discusses the details.

⁸ Chartres, 'Marketing', pp. 420–42.

⁹ R. Britnell, 'The proliferation of markets in England, 1200–1349', *ECHR* 34 (1981); S. Letters, M. Fernandes, D. Keene, and O. Myhill, *Gazetteer of markets and fairs in England and Wales to 1516* (2 vols, List and Index Soc.,

Special Ser., 32 and 33, 2003). This makes the differences between creations and active stocks potentially even more striking, with, for example, 2022 markets created in England by 1516, but only 675 surviving in 1600 (I, p. 30).

¹⁰ J. D. Marwick, *List of fairs and markets held in Scotland* (1890).

– one in eight as opposed to one in eleven market towns – and the vitality of fair creation in seventeenth-century Munster.¹¹

The final element of long-term background lay in the common experience in the later sixteenth century of revived Malthusian threats, as rising population once more squeezed relatively inelastic grain supplies. Whereas some European countries responded, as in the fourteenth century, by displaying economic retardation, these tensions combined in Britain with other changes, especially urbanization, commercial development, and industrial growth, to break the mould. Sufficient change took place in inherited systems and structures to offer new flexibility and prevent the seventeenth century seeing a recurrence of Le Roy Ladurie's great homeostatic cycle.¹² While not just a matter of serendipity, it is argued here that Britain, and perhaps the British Isles, held the perfect hand of cards to play in the seventeenth and eighteenth centuries. It combined political integration with ready access to coastal shipping and improvable rivers, and was ideally suited in its land communications to rapid urbanization and the development of regional specialization. It was an entity that could be transformed by existing communications technology. While Britain shared many elements of the food crisis of early and mid-seventeenth-century Europe, it was ideally placed for Smithian – even Brennerish – commercial transformation to occur.¹³

II

Superimposed onto this institutional and organizational heritage, a series of testing circumstances and specific changes enabled that transformation to take place. Central to these was the grain supply. Around the middle of the sixteenth century, exacerbated by the deterioration of the currency, food shortages had led to the search for scapegoats, found in middlemen and others, who were subjected to controlling legislation in 1555 and 1563. The threat of dearth was also a motive for the regulation of enclosures. The evidence we have suggests that grain supplies moved from marginal deficiency in the early 1500s, to genuine dearth in the 1540s and 1550s and, despite much urban concern about food security, pressure on grains was reduced by the last quarter of the century. The 1590s displayed both sides of the issue: such were conditions of plenty by 1593 that the enclosure statutes were repealed, the flexibility of land use for the farmer being recognized; it was immediately succeeded by a series of bad harvests, and parliament restored the legislation, but not quite blindly, reflecting local and regional farming practices.

From the beginning of the seventeenth century, there were again fluctuations from plenty to want, which were combined with continued growth in interregional trade, both by river and coastwise. The bulk of such trades concerned the east coast, and by the early seventeenth century this was clearly part of a single 'North Sea pond', in which international trade also took place. The 1620s and 1630s saw scarcities, and population trends have generally been held

¹¹ Ibid, pp.172–93; Dickson, *Old World colony*, pp. 22–3, 413–6. (eds), *Brenner debate*, p. 102.

¹² E. Le Roy Ladurie, 'A reply to Robert Brenner', *Past and Present* 79 (1978), repr. in Aston and Philpin

¹³ I have argued this more fully in a survey of the island in J. Mokyr (ed.), *Oxford encyclopaedia of economic history* (5 vols, 2003), II, pp. 205–10.

to be harvest-sensitive throughout the century, but in mid-century there began a rapid shift from the problems of shortage to those of surplus. Corn laws focused upon the restraint of exports were revised to promote the shipment of surpluses abroad, and the régime introduced in 1674, made permanent from 1689, signified that domestic levels of production had banished the serious threat of famine from Britain. Shortages certainly occurred, and local and regional problems were evident in the 1690s, the 1750s, and the 1790s, notably in Scotland, but famine was no longer an overall threat to the nation. After the famine of 1740–1, much of southern and eastern Ireland underwent a similar experience, and became an exporter of grains to Britain. Agricultural improvement and trade transformed supply conditions.

In most European countries, government continued to regulate markets in dearth years. As Persson has suggested, the characteristic responses to dearth or fear of dearth in early modern Europe remained as in the high middle ages: public granaries and emergency stocks; the assize of bread; restrictions upon middlemen; and limitations upon bakers' profits. The state remained the 'baker of last resort'. In Britain, by contrast, after the middle of the seventeenth century, the market was permitted to attain sovereignty, and its market integration liberated producers and offered greater security to consumers than traditional regulation: policies adopted in the context of glutted corn markets were sustained against political critiques in the more hungry years of the later eighteenth century, and accorded with the precepts of the early advocates of free trade in corn before Adam Smith – Boisguilbert, Bandini, Herbert, Davenant, and Charles Smith. Despite the temptation to regress when corn was scarce, under pressure from the moral economy of the crowd, Britain sustained its liberal market régime throughout the period, and the two forks of its policy – free trade in corn and the poor laws – distinguished its position from that of its European neighbours, and offered greater flexibility in the allocation of factors of production, two previously unconsidered answers to the classic question of 'why was Britain first?'¹⁴

Such changes introduced Britain early to the benefits, for both producers and consumers, of markets internationally harmonized by articulation and extensive interregional trade. Other international changes in the later seventeenth century aided this transition. The revolution in the European carrying trades after the introduction of the Dutch *fluitschip* to Britain, which we consider later; the advance of mercantile networks and systems; and the development of effective marine insurance, all intensified the economic efficiency of the North Sea basin, and Britain was institutionally best placed to gain from this.¹⁵ As a result of comparative change in their respective competitive positions, by around 1700, London came to share the role of Amsterdam as European reference market, and made corresponding gains in transaction costs.

¹⁴ K.-G. Persson, *Grain markets in Europe, 1500–1900: integration and deregulation*, (1999), esp. pp. 1–22. The argument may seem an optimistic economic paean of praise to the supremacy of the market as allocation and distributive mechanism, but it was a radical feature of enlightenment thinking, and clearly differentiated Britain from most of its neighbours, whatever its origins and motivation. Peter Solar added the significant

second factor, the role of the poor laws in freeing the allocation of labour, 'Poor relief and English economic development before the industrial revolution', *EcHR* 48 (1995).

¹⁵ My inference from the research of David Jacks, 'Market integration in the North and Baltic Seas, 1500–1800', *J. European Economic Hist.* 33 (2004).

Internally, Britain had a fairly well integrated domestic market for wheat, barley and malt by the later seventeenth century, in part the outcome of the same developments. Formal statistical evidence from the 1690s onwards has shown the high degree of synchronicity of market price fluctuations in these grains, at least for the east and south of the country.¹⁶ The west, across an imaginary zip-fastener in the island running down from the Pennines to Poole harbour, was more detached, but may have been much more fully integrated into a Bristol Channel–Irish Sea price system, which has as yet to be formally investigated statistically. Certainly, significant supplies of wheat and malt went to Ireland up to mid-century, although contemporaries believed the introduction of an inland bounty for the supply of Dublin in 1757/8 restored the home market to the Irish farmer.¹⁷ Despite the rising trend in prices after the 1750s, this integration of grain prices was maintained well into the mid-nineteenth century, and suggests that these gains to the distributive system were lasting.¹⁸

The second great area of change lay in the rapidity and scale of Britain's urbanization. This clearly interacted with the changes in market structures, and although the argument is somewhat circular, one of the most powerful determinants of market integration before 1650 was population growth.¹⁹ For England, therefore, London's massive growth during the century, and primacy in the urban system, acted as a driver towards the changes necessary for its food supply. There had been minor similar forces at work in the provinces, where the miracle coal town of Newcastle-upon-Tyne had significant impact upon its rural hinterland, but as the one urban centre in a relatively low-intensity farming region, it was insufficient, despite its size and wealth, to transform it. More important, then was the very dramatic rate of urbanization in Britain during the years after 1650: measured only by large towns, de Vries saw England's urbanization growing from around 17 per cent in 1700 to 27 per cent in 1800. On this basis, Wrigley pointed out that between half and three-quarters of Europe's large-town growth was concentrated into this island. Rapidly developing towards log-linearity, Britain's urban system became the most advanced of eighteenth-century Europe, and taking place within the very rapid population growth of the later part of the period, expressed a powerful continuing agency of change.²⁰

¹⁶ Chartres, 'Marketing', pp. 210–16; C. W. J. Grainger and C. M. Elliott, 'A fresh look at wheat prices and markets in the eighteenth century', *ECHR* 20 (1967).

¹⁷ On grain exports, see my 'English grain trades and farmers' strategies in the later seventeenth and earlier eighteenth centuries: a general view', paper delivered to a CORN Conference papers in Ghent, 1999, forthcoming; D. Dickson, 'The place of Dublin in the eighteenth-century Irish economy', in T. M. Devine and D. Dickson (eds), *Ireland and Scotland, 1600–1850: parallels and contrasts in economic and social development* (1983), p. 187.

¹⁸ Based upon testing of first differences of data in R. Perren, 'Markets and marketing' and A. H. John, 'Statistical appendix', both in G. E. Mingay (ed.), *The agrarian history of England and Wales*, VI, 1750–1850 (1989), by Alan Taylor, presented in discussion at the

European Historical Economics Workshop, Lerici, Apr. 1994.

¹⁹ Jacks, 'Market integration', pp. 305–6, 313, citing C. G. Reed, 'Transactions costs and differential growth in seventeenth-century Western Europe', *JEC* 33 (1973).

²⁰ This summarizes a huge and complex literature, in which the critical references are Jan de Vries, *European urbanization, 1500–1800* (1984); E. A. Wrigley, 'Urban growth and agricultural change: England and the continent in the early modern period', *J. Interdisciplinary Hist.* 15 (1985), repr. in id., *People, cities and wealth: the transformation of a traditional society* (1987), pp. 157–93; J. A. Chartres, 'Food consumption and internal trade', in A. L. Beier and R. Finlay, *London, 1500–1700: the making of the metropolis* (1986) pp. 168–96; id., 'City and towns, farmers and economic change in the eighteenth

These forces combined to influence significant development in the domestic transport system. The later seventeenth century saw the expansion of wheeled traffic on roads in western Europe. With these new and more numerous vehicles, pressures for change fell onto bridges and roads: from the later seventeenth century, English turnpiking, some involving the replacement of hilly zigzag routes by contour lines accessible to carts and wagons, the adoption and re-edification of many bridges by county authorities financed by rates, waymarking, and regular scheduled carrier services, all began to develop.²¹ At farm level, probate inventories have shown the increase in investment in the means of carriage by farmers, and a large group of smallholders, petty chapmen and others provided the intermediate carrying services critical to the protoindustrial economy.²² Transport changes dramatically altered the accessibility of town, village, farm, and hamlet, and allowed the fuller expression of the forces for economic change.

The conjuncture of these dynamic forces with the structures of trading institutions discussed above induced sufficient change within the marketing systems to permit flexible adaptation, and a remodelled system that lasted into the era of canal and railway. Within the limits of transport technology available before 1800, it enhanced the capacity of the market to transmit foodstuffs, raw materials, and information, and opened the potential for Smithian gains from the expression of comparative advantage. These incremental changes had radically altered the production possibilities facing the farmer, and their flexibility meant that they continued mutually to adjust to circumstances up to 1800 and beyond.

III

These issues can now be explored more fully in a series of summary case studies. Eastern England, and by the later eighteenth century, eastern Britain, provided a classic case for grains and related crops. In the transport conditions of early modern Europe, it was almost perfectly endowed with the assets that permitted the expression of comparative advantage through the conjuncture of institutional heritage and new dynamic factors. Maritime trade had been conducted between the northern ports, such as Berwick and Alnmouth, and Scotland from

Note 20 *continued*

century', *Historical Res.* 64 (1991); id., 'Market integration and agricultural output in seventeenth-, eighteenth-, and early nineteenth-century England', *AgHR* 43 (1995); J. Langton, 'Urban growth and economic change: from the late seventeenth century to 1841', in P. Clark (ed.), *The Cambridge urban history of Britain*, II, 1540–1840 (2000), pp. 453–90, offers a very different perspective but emphasizes regional differences in growth patterns, and Map 14.1, p. 464, shows the impact of Newcastle-upon-Tyne and its trades on an otherwise relatively undeveloped region.

²¹ J. A. Chartres, 'Road carrying in England in the seventeenth century: myth and reality', *EcHR* 30 (1977); J. A. Chartres and G. L. Turnbull, 'Road transport', in

D. H. Aldcroft and M. J. Freeman (eds), *Transport in the Industrial Revolution* (1983), pp. 64–99; T. C. Barker and D. Gerhold, *The rise and rise of road transport, 1700–1990* (1995); D. G. Hey, *Packmen, carriers and packhorse roads: trade and communications in north Derbyshire and south Yorkshire* (1980); Dickson, *Old World colony*, pp. 427–33 on Munster; and G. Livet, *Histoire des routes et des transports en Europe: des chemins de Saint-Jacques à l'âge d'or des diligences* (2003), esp. pp. 225–8.

²² S. Porter, 'Farm transport in Huntingdonshire, 1610–1749', *J. Transport Hist.* third ser. 3 (1982); M. J. Freeman, 'Transporting methods in the British cotton industry during the Industrial Revolution', *J. Transport Hist.*, third ser. 1 (1980).

the sixteenth century, but it was the seventeenth century that saw the distinctive growth of interregional trade in the North: the spectacular development of the Newcastle coal industry, and of the city itself, spurred local improvements in farming strongly in livestock, but also in grains, with oats and barley the principal crops in the region. Marine traffic from the east coast as far south as Sandwich, but principally from East Anglia, supplied barley and rye, and integration into the North Sea-Baltic trading systems allowed scarcities to be solved by international trade: when harvests failed in 1728, Newcastle shared in imports of large quantities of rye from Danzig and the Netherlands.²³

The combined impact of massive urban growth, political convergence, and growing market integration thus stimulated agrarian change in the north-east, advancing commercial livestock farming and generating innovation in cereals, both in the organization of land and farms, and in cropping, notably with the displacement of traditional bigg by barley and the intensification of oat production. Further south, in the principal domestic regions of supply to Newcastle and its industrializing surroundings along the eastern seaboard, these factors were greatly magnified. As the work of Campbell and Overton has shown, over this period much of eastern England was able to commercialize its farming, led by the example of cereal production in East Anglia, but mirrored by the development of grains, oil and other industrial crops in the inland counties, by the combination of demand expressed through the capital, and in the North Sea grain market for which it was coming to share reference market status. The modern historiography of the period has stressed the very advanced husbandry that characterized many manorial estates of the high middle ages, where clean cultivation with significant inputs of labour, high stocking rates and manure supply, and some uses of leguminous crops produced levels of output per acre and yield ratios not matched before the eighteenth century: east Norfolk in particular displayed a long-term history of mixed husbandry under the influence of the market. This may mean that Britain needed no dramatic breakthrough in the levels of yields to meet its massively rising population in the years before the 1830s: rather, it needed to express the economics of improvement, and to diffuse good systems of husbandry. In this, the broader changes in the market system and the means of trade were critical.²⁴ The combination of an effectively articulated market and the dissemination of best practice may have been sufficient to solve the conundrum, and abolish the need for an 'agricultural revolution'.

Seventeenth- and eighteenth-century eastern England was almost a laboratory design for the transport and communications technologies of the period. The advance of coastwise shipping from the middle decades of the seventeenth century was one major change. Its advent more effectively linked the grain producing regions with London, and helped the latter to become, by the beginning of the eighteenth century, the principal port for international exports and to vie with Amsterdam for primacy among European grain markets. Technological change was one element in this process: improved naval architecture, notably in the Netherlands, in the relatively more pacific trading conditions of the late sixteenth and earlier seventeenth century had produced the *fluitschip*, the unarmed bulk carrier which could carry 1–200 tons with low

²³ Paul Brassley, 'Northumberland and Durham', in Thirsk (ed.), *Agrarian hist.*, V, (i), pp. 39–44.

²⁴ B. M. S. Campbell and M. Overton, 'A new

perspective on medieval and early modern agriculture: six centuries of Norfolk farming, c.1250–c.1850', *Past and Present* 141 (1993).

crewing ratios, and became one of the great secrets of Dutch mercantile marine supremacy. Britain, it is usually argued, snatched many of these vessels in the first and second Dutch Wars (1652–4, 1665–7) and applied their benefits to its own nearby carrying trades, above all for coal and grain. Repair and maintenance of these prizes helped to transfer the new naval architecture to indigenous shipwrights; and, coinciding in the later seventeenth century with supply-side problems in naval timber in the traditional shipbuilding industries of the south-east, such as Ipswich, derivative types began to be built in ‘new’ areas of shipbuilding, particularly north of the Humber.²⁵

Change, however, was not merely a matter of a technological ‘magic wand’, particularly since many of the vessels actually conducting the estuarial and coastwise grain trades were no larger than 40 tons.²⁶ Robust shipbuilding was combined with increased investment and activity rates – higher productivity – and simple access to more business. While setting sail in such small vessels looks unattractive to modern eyes, they had the advantages of low capital cost – making potential entry to the traffic easier – and the capacity to penetrate inland through relatively small creeks and sluices – making harbours of many small places in the Thames estuary, Essex and Suffolk, which were inaccessible to land transport.²⁷ People we observe in shipping records as the masters of small hoys or other vessels, appear in their own localities as fishermen, small merchants or retailer-processors, and were the equivalent of the farmer-carrier on land, part of the expanding sources of connectivity in the eighteenth century that were perhaps more significant than falling transport costs in changing the nature of the market.²⁸ During the course of the eighteenth century, the use of more, larger vessels from more distant ports was increasingly facilitated by harbour investment, especially the state-promoted chain of harbours of refuge running the entire length of the coast.²⁹

After 1660, in several bursts of investment and then engineering activity, rivers themselves were improved to join what contemporaries regarded as the continuous river running round the coast. Although evidence is not completely clear, many of the larger river vessels enabled to penetrate far inland by these engineering works were capable of limited coastal navigation: grains, for example, could be loaded onto a small ship deep into the Great Ouse, Trent, or Humber systems, and be carried in bulk direct to market with no transshipment costs. By the second quarter of the eighteenth century, then, inland ports in cereal-growing zones, such as Boroughbridge, Wetherby, Selby, Wakefield, Burton, Derby, Retford, Newark, Gainsborough, Bawtry, Stamford, St Ives, St Neots, and Bury St Edmunds, were taking advantage of this improvement.³⁰ The effect, by the 1720s, was to open up the whole of the Vale of York, the Vale of Trent, and the inland, felden districts of Cambridgeshire and East Anglia to the possibilities

²⁵ R. Davis, *The rise of the English shipping industry in the seventeenth and eighteenth centuries* (1962), pp. 60–2.

²⁶ J. A. Chartres, ‘Trade and shipping in the Port of London: Wiggins Key in the later seventeenth century’, *J. Transport Hist.*, third ser., 1 (1980); T. S. Willan, *The English coasting trade, 1600–1750* (1938), pp. 11–16.

²⁷ I am indebted for this point to Dr Bronwen Cook, ‘The coastal trade of Maldon, c.1575–c.1702’ (unpublished

PhD thesis, University of Essex, 2006).

²⁸ Ibid.

²⁹ D. Swann, ‘The pace and progress of port investment in England, 1660–1830’, *Yorkshire Bulletin of Economic and Social Res.*, 12 (1960); id., ‘English docks and harbours, 1660–1830’, (unpublished PhD thesis, University of Leeds, 1959); G. Jackson, ‘The ports’, in Aldcroft and Freeman (eds), *Transport*, pp. 177–209.

³⁰ Willan, *River navigation*, Map III, p. 68.

of specialization and the gains from interregional trade.³¹ While later eighteenth-century canal building significantly altered the transport balance of the country, its impact lay most significantly in the dry central Midlands, in coalfields, and in linking the north-west with the south-east.³² Many of these eastern river ports remained as primary centres of agricultural trading and, by the early nineteenth century, enjoyed relatively large concentrations of cornfactors, maltsters and others, displaying the agrarian specialization that was implicit in the evolution of Britain's advanced urban system. Wakefield, for example, grew more slowly than the leading 'industrial' towns of the West Riding of Yorkshire in the later eighteenth century, and had under 10,000 people in its parish in 1821, whereas Leeds had already over 90,000; but Wakefield had specialized as a grain dealing centre, probably the entrepôt from which the clothing districts were supplied, and had 25 corn factors, 30 attending corn dealers, 31 maltsters, and 30 bakers and flour dealers, when Leeds had only 13 cornfactors and 6 maltsters, but more than 90 bakers.³³ Towns too exhibited a division of labour.

These changes allowed other regions to specialize, and the south Midlands provides a classic case-study of the processes of change. Various forms of convertible husbandry had been practised in the Midlands from the later sixteenth century, and the adoption of leys in open fields may have helped redress the corn supply in the region. However it was in the later seventeenth century that evidence of its systematic extension was found, and John Broad has convincingly demonstrated that on the heavy midland claylands in particular, leys were not, as Kerridge argued, a critical innovation *per se*, but rather a transitional stage from open-field arable of modest productivity to permanent pasture, focused largely upon meat production, but also containing, as in Buckinghamshire, specialized dairying.³⁴ The process continued during the eighteenth century and, by its end, half the farmland of the six counties of his study was under permanent grass focused upon commercial livestock farming.³⁵ It is significant that this was also the centre of parliamentary enclosure: its first great wave was heavily concentrated in the Midlands, and again appears to have been concerned predominantly with open-field arable, motivated by the desire to convert low productivity or subsistence arable to commercial grazing land.³⁶ As Chapman has shown, open-field arable took but a minority

³¹ Thirsk (ed.), *Agrarian hist.*, V (i), esp. maps, pp. 61, 91, and 198.

³² Comments based upon the summary map provided by H. J. Dyos and D. H. Aldcroft, *British transport: an economic survey from the seventeenth century to the twentieth* (1969, revised Penguin edn, 1974), pp. 104–5; B. F. Duckham, 'Canals and river navigations', in Aldcroft and Freeman (eds), *Transport*, pp. 100–41, which reproduces the map, pp. 110–11; R. W. Unwin, 'The transport systems of the Vale of York, 1660–1775', *J. Transport Hist.*, third ser. 2 (1981), provides some useful background on the vales of York and Trent, but too little detail on traffic for present needs; F. J. Wood, 'Inland transport and distribution in the hinterland of King's Lynn, 1760–1840' (unpublished PhD thesis, University of Cambridge, 1992).

³³ E. Baines and W. Parson, *History, directory and gazetteer of the county of York* (2 vols, 1822), I, pp. 102, 109, 118, 426, 428, 437.

³⁴ J. Broad, 'Alternate husbandry and permanent pasture in the Midlands, 1650–1800', *AgHR* 28 (1980); E. Kerridge, *The agricultural revolution* (1967), pp. 40ff.

³⁵ Broad's chosen counties were Leicestershire, Warwickshire, Northamptonshire, Rutland, Buckinghamshire, and Bedfordshire.

³⁶ My inference from Broad and several chapters in Thirsk (ed.), *Agrarian history*, V (i), where the boundaries of 'regions' are different: the term 'subsistence arable' is used in that volume as one category for land use, to indicate residual corn growing in regions of grazing or industrial activity, and described in Fig. 0.1, pp. xx–xxi.

share of parliamentary enclosures, which should be seen primarily as land reclamations, but dominated the first phase before the 1790s.³⁷ Together, these substantiate the role of market integration, which permitted the Midlands to concentrate increasingly upon the crop to which they were best suited, grass, and to rely upon the trading system to redress any difficulties in their bread supply. The relatively high incidence of food riots or protests within this region from mid-century may thus emphasize the potential problems for the consumer in populous regions where bread-grains had become residual produce.³⁸

This region of grazing formed an intermediate zone of specialization with the London market and its ancillary fattening enterprises at one end, the final destination of these animals, and an extended network of rearing districts at the other. One set of responses to this increased articulation of the market was the complex system of the great London meat trade, centred upon Smithfield until the mid-nineteenth century, and its related commercial institutions. Beneath the Smithfield system, whereas in the corn trade, London had clearly become a reference market well before 1700, there was an extended hierarchy of fairs, a series of specialized middlemen and traders – graziers, drovers, jobbers, butchers and so on – and a ring of farm enterprises in the inner parts of the metropolitan counties that effectively banked sheep and cattle before they returned to slaughter. In parts of Middlesex, Surrey, Essex, and Kent there emerged by 1700 an intensive zone of pasture farming, with forward purchases of both grass and fodder crops, diverting at least some parts of this zone – much of Middlesex for example – from ‘natural’ exploitation of their soils for arable.³⁹ Spinning off from London’s dominant position as meat consumer and processor for naval stores were secondary industrial activities, such as tanning and related leather trades, tallow, and horn- and hair-using enterprises.⁴⁰

Urban markets created extended chains of supply into the more remote parts of the island and before the Cattle Acts of 1665 and 1667, into Ireland.⁴¹ Wales had supplied some sheep and black cattle to English markets in the fifteenth century, but the trade grew very significantly in scale with the pacification of the Marches and the rapid growth of London from the mid-sixteenth.⁴² The capital’s continuing growth through the seventeenth century advanced the trades, and established a complex of droving, wayside inns and shoeing smithies linking the

³⁷ J. Chapman, ‘The extent and nature of parliamentary enclosure’, *AgHR* 35 (1987). It is unfortunate that Thirsk (ed.), *Agrarian history*, V just predated the publication of Chapman’s work, and does not provide a synoptic view of enclosing.

³⁸ A highly speculative point, but some substantiation may be found in Thwaites, ‘Women’, and A. Charlesworth (ed.), *An atlas of rural protest in Britain, 1548–1900* (1983), esp. chs 2 and 3; comparative regional dimensions for the end of the eighteenth century are discussed by R. Wells, *Wretched faces: famine in wartime England, 1793–1801* (1988), pp. 22–34.

³⁹ Based upon comments in Thirsk (ed.), *Agrarian history*, V (i), in the chapters by R. C. Richardson, ‘Metropolitan counties: Bedfordshire, Hertfordshire and Middlesex’, pp. 245–7; B. M. Short, ‘The south-east: Kent,

Surrey and Sussex’, pp. 284–91; B. A. Holderness, ‘East Anglia and the Fens: Norfolk, Suffolk, Cambridgeshire, Essex, and the Lincolnshire Fens’, pp. 231–6, on Essex; and cf. Chartres, ‘Marketing’, pp. 480–6.

⁴⁰ Still relatively little studied, apart from L. A. Clarkson, ‘The manufacture of leather’, in Mingay (ed.), *Agrarian history*, VI, pp. 466–83. G. Riello’s recent book, *A foot in the past: consumers, producers and footwear in the long eighteenth century*, (2006), pp. 231–2 confirms London as the principal centre of boot and shoe manufacture until late in the nineteenth century.

⁴¹ Dickson, *Old World colony*, pp. 115–16.

⁴² C. Skeel, ‘The cattle trade between Wales and England from the fifteenth to the nineteenth centuries’, *Trans. Royal Hist. Soc.*, fourth ser., 9 (1926); P. G. Hughes, *Wales and the drovers* (1943).

herds built from middleman activity in local fairs with the midland markets, and ultimately the London meat trade. Though eroded to some degree by the spread westward of railheads, the system endured in all essentials until the third quarter of the nineteenth century.⁴³ The Scottish trade developed from the middle years of the seventeenth century, although it had origins contemporary with that of Wales, and was aided by state policies, the suppression of some of the Borders lawlessness from the 1590s, and the gradual development of free trade to England from the act of 1607. In 1663, 18,574 Scots beasts were tolled at Carlisle on entry to England.⁴⁴ Numbers grew to the end of the century, and made Smithfield a market too for inland bills, and the London-Edinburgh exchange rate was said to hang upon the timing of the arrival of droves.⁴⁵ Scots trades developed, producing complaints from northern English rearers, but from the mid-eighteenth century were promoted by English dealers, men like Birtwhistle and Moorhouse from Craven (Yorks.), who purchased direct in the Scottish trysts: the former, famously, built his herds travelling through the Hebrides and the Highlands in the midst of the '45 Rebellion.⁴⁶

Historians are agreed that both Wales and Scotland gained from these trade developments, as did the offshore islands such as Anglesey and Skye, from which livestock swam across fearsome straits, but there has as yet been little evaluation of the total economic impact. It was clear that the traffic raised income levels in the rearing districts – the same applied in much of northern England, Lincolnshire, and the west – and fostered some intensification of farm enterprises, even though the greater parts of value added in the long route to becoming meat accrued to the secondary and tertiary stages of grazing, jobbing, and butchery.⁴⁷ Adam Smith certainly considered that such 'rude produce' as cattle had risen in real value since the Union, to the benefit of farmers, and also produced some improvement in the cultivation of the lowlands, but doubts have been expressed as to how far this could represent a development path. Devine has seen the growth of droving primarily as sustaining the incomes of traditional societies in the Highland zone, and that it thus 'merely perpetuated the archaic societies of the Highlands and Galloway whence most beasts originated and which maintained a stubborn resistance to fundamental improvement into the nineteenth century'.⁴⁸ Improvement as a result of the commercial impact of droving in the peripheral rearing regions must therefore not be read as synonymous with 'development'.

Not all such gains were confined to farm level. A large range of smallholdings, even garths

⁴³ R. Moore-Collyer, *Welsh cattle drovers* (sec. edn, 2006); R. Perren, 'The marketing of agricultural products: farm gate to retail store', in E. J. T. Collins (ed.), *The agrarian history of England and Wales*, VII, 1850–1914 (2 vols, 2000), (ii), pp. 968–76.

⁴⁴ A. R. B. Haldane, *The drove roads of Scotland* (1952, repr. 1997), pp. 18–19.

⁴⁵ Chartres, 'Marketing', p. 232; T. C. Smout, *Scottish trade on the eve of union, 1660–1707* (1963), p. 212.

⁴⁶ Haldane, *Drove Roads*, p. 179.

⁴⁷ For a valuable case study of the Warton grazing estate in Yorkshire, D. M. Woodward, 'Cattle droving in the seventeenth century: a Yorkshire example', in

W. H. Chaloner and B. M. Ratcliffe (eds), *Trade and transport: essays in economic history in honour of T. S. Willan* (1977), pp. 35–58.

⁴⁸ A. Smith, *An inquiry into the nature and causes of the wealth of nations* (1776, Routledge edn, 1880), book I, ch. XI, p. 118; T. M. Devine, 'The English connection and Irish and Scottish development in the eighteenth century', in T. M. Devine and D. Dickson (eds), *Ireland and Scotland, 1600–1850: parallels and contrasts in economic and social development* (1983), p. 16. A similar historiography would also be found in most works on Ireland.

and gardens, also benefited from the changing marketing system. Horticulture had no doubt long been an element of London's history, but had been limited: it was from the later sixteenth century that vegetables came to assume greater importance in the dietary régime of the capital, perhaps first as a means of stretching the bread supply, and later consumed for their own qualities and virtues, becoming, after 1660, fashionable foods. Commercial gardening seems to have been the genuine creation of spade cultivation brought to England by Protestant refugees, and its growth around London was very much a new industry.⁴⁹ It became the ultimate seventeenth- and eighteenth-century symbol of intensification and specialization through the market place, as well as a classic demonstration of the innermost belt of von Thünen's model of agricultural location.⁵⁰ In the Neat House Gardens, Pimlico, there was a particularly intense case where best practice was developed; it was also a place of resort, where tea or drink could be taken, and melons or asparagus purchased direct, and fresh produce enhanced the reputation of producers in Covent Garden or other London markets, supplied by riverboat or overland.

As Thick demonstrates, this was but the top of a huge range of gardening enterprises, which, by 1798, included 'farming gardeners' who cultivated mostly by the plough but also used the spade and employed around 10,000 acres of garden lands. There were 1500 proper gardens in Middlesex alone, generating sales worth over £600,000 per annum.⁵¹ There was also a particularly rich group of gardening enterprises south of the river, from Greenwich and Deptford in Kent, to Battersea, Wandsworth, Putney, and Richmond in Surrey; and the gardening zone stretched as far south as Croydon, Godalming and Carshalton.⁵² By the middle of the eighteenth century, garden supplies were reaching street sellers, and, for the élite customer, new greengrocers' shops in the West End: all reflected the complex supply and marketing system that permitted this intensive specialization. By the early nineteenth century this zone had been pegged back to a corridor along the Thames, and was then squeezed out by higher yielding land uses – including building – but the system of gardening had shifted to road transport, and later rail, which permitted the trade to leapfrog into more distant parts of Middlesex, Hertfordshire, Kent, Essex, and Surrey, again pointing to specialized marketing services as the key to successful farm specialization. In the fashionable new suburbs of west London, residents complained of the early morning rumble of vegetable wagons bound for Covent Garden disturbing their sleep. Horticulture developed too around the growing cities, but, apart from Scola's study of Manchester, the details of specialization and marketing have as yet been little documented by modern historians.⁵³

This was an extreme example of the ways in which intensification within a highly articulated

⁴⁹ Campbell *et al*, *Medieval capital*, pp.32–3; M. Thick, 'Root crops and the feeding of London's poor in the late sixteenth and early seventeenth centuries', in J. A. Chartres and D. G. Hey (eds), *English rural society, 1500–1800: essays in honour of Joan Thirsk* (1990), pp. 279–96; M. Thick, 'Market gardening in England and Wales', in Thirsk (ed.), *Agrarian history*, V (ii), pp. 503–32; id., *The Neat House Gardens: early market gardening around London* (1998), esp. pp. 17–38.

⁵⁰ G. B. G. Bull, 'The changing landscape of rural Middlesex' (unpublished PhD thesis, University of London, 1958), p. 472, cited by Richardson, 'Metropolitan counties', *Agrarian history*, V (i), p. 245.

⁵¹ Thick, *Neat House*, pp. 147–56, 158–9.

⁵² Ibid, p. 56; W. Stevenson, *General view of the agriculture of the county of Surrey* (1809), pp. 380–1.

⁵³ R. Scola, *Feeding the Victorian city. The food supply of Manchester, 1770–1870* (1992), pp. 93–8.

market system could make small units of land viable for family enterprise, but it was not the only possible strategy. A range of specialized crops, many of which emerged during the seventeenth century, offered high cash returns from small acreages if large inputs of family labour were freely available. The growth of cultivation of premium-quality liquorice at the Yorkshire market town of Pontefract provides a perfect example: here miniscule units of land were employed to grow a crop whose fresh herbal fame in the eighteenth century spread as far as Paris. It was controlled by three growers and marketing merchants, who made sales as far as Ireland via Liverpool, and offered gains from backyards and gardens for the townsfolk. For others, who also grew vegetables or produced seeds, it became one cash component in family income. The herbal root elecampane was grown in the town on a similar basis. All this depended upon a reliable food supply delivered by changes in the market to release the full potential of unusual local soils and factor endowments to the growth of a high value-added crop.⁵⁴ Similar cases might be made for some of the industrial dye crops, woad and weld; osiers in the Trent valley, Somerset, and in south Lancashire; and teasel growing on the fenland edges of south Yorkshire, feeding directly into textiles.⁵⁵ All shared some characteristics: they were specialized crops with distant markets; they were of high value and suited small acreages; each was either highly labour-intensive or unpleasant to process, or both; and each, like cottage industry, offered a 'protoindustrial' income as an element in a family earning strategy, one income flow or several, all made possible by the integrated market.

One final theme integrates some of the above, and is a facet of change within British farming of the period, linking the security of the grain supply, droving, and urbanization. Recent work by John Cruickshank has revealed very significant degrees of specialization within the parish of the commercial and industrializing town of Leeds in the seventeenth and eighteenth centuries, and suggested patterns of market responsiveness and specialization that were probably replicated elsewhere in analogous situations, in Manchester, Liverpool, Nottingham, and so on. Cruickshank's work on a single township, Headingley-cum-Burley, identified specialization in modest farm units to supply the growing town and the contiguous protoindustrial townships of the parish, such as Armley. Headingley itself remained largely agricultural throughout the period, and provided oats for feed, wheat, some malt and barley, and dairy cattle suggesting that its proximity to central Leeds provided opportunities for a fresh milk trade; its extensive woodlands were coppiced and supplied timber; but more significant was its position as provider of 'accommodation land', some leased by Craven graziers, where cattle and sheep were held for slaughter – the long drift roads to the north-west of the township led naturally into the moorlands and along Airedale.⁵⁶ The developing system of integrated trade, and

⁵⁴ J. A. Chartres, 'A special crop and its markets in the eighteenth century: the case of Pontefract's liquorice', in R. W. Hoyle (ed.), *People, landscape and alternative agriculture: essays for Joan Thirk* (Agricultural History Rev. Supp. Ser. 3, 2004), pp. 113–32.

⁵⁵ J. Wilkes and P. Barfoot, *Universal British directory* (4 vols, 1793–8, repr. 1993), IV (i), p. 362, appears, for example, to record a single English dealer in weld, in Rotherham, Samuel Raby, which is suggestive

of another highly concentrated zone of specialized production, proximate to but not located within the textile regions.

⁵⁶ J. L. Cruickshank, 'Headingley-cum-Burley, c.1540 to c.1784', (unpublished PhD thesis, University of Leeds, 2003), pp. 151–201. His work suggested that other township studies might demonstrate similar specialization in the North, where the characteristic form of settlement was the large multi-township parish,

relatively secure corn supply that fed the clothing manufacturing districts within the Leeds parish and the towns further west, notably Halifax, permitted and encouraged specialization at farm level and added further to the subtlety and efficiency of the British food market. In the classic woollen districts west of Leeds, dependence upon grains imported from outside the region was central to the economy, and to the development of great corn markets, such as Wakefield, on its fringes.

IV

This chapter has argued a case for Britain's historical serendipity, and to identify in it an island ideally fitted to gain from the flow of technical improvements to the transport system in the years after about 1550. Although in the long term the world came to regard the British story as one of canals, coal, and steam, the background to industrialization came partly in incremental changes involving wind, human and animal power sources, and improvement – not radical breaks with the past. Historians are familiar with the period from the mid-seventeenth century as one of protoindustrialization, even if many feel uncomfortable with the implication of staged transition to 'full' industrialization; our evidence on transport links, food trades, and market structures has explored the other side of the equation, arguably the more important one, by which incremental but very significant improvement was released in agriculture.

Britain's population growth in the sixteenth century differed significantly from those of some immediate European neighbours. While the pangs of hunger were felt, and mortality remained harvest-sensitive for a century or so more, the country did not quite stagnate; indeed, as the experiences of the 1590s suggested, shifts towards the plough under the stimulus of the demand for grains, particularly for the rapidly growing capital, were already correcting the balance of agricultural output. In the absence of wars of religion, at least until the 1640s, these processes of adjustment were able to continue, even though state intervention in the form of Laud's fines for enclosers and engrossers in the 1630s added complications. Despite the heavy disruption of the Civil Wars, by mid-century the British farm system seemed to have overcorrected, and by doing so a century of opportunity for the meat farmer began, with new opportunities for those who could produce fashionable vegetables and exotic fruits. The growing impact of transport changes – wheeled traffic, better roads, waymarking and bridges – helped the virtuous spiral of improvement to continue, and for enhanced specialization to take place in the farm system. Incremental gains from growing local and regional specialization proved more than adequate to the task of feeding the nation and, up to the 1750s, of providing a small but significant surplus for export.⁵⁷

Less obviously, changes in the ownership and management of land clearly assisted. What Allen has called the 'landlords' revolution' clearly provided an incentive for the tenant to improve efficiency, and to enforce change through lease covenants and so on. It may also have taxed 'surplus' to a greater degree, and thus encouraged farmers to continue to seek

Note 56 *continued*

in contrast to the southern half of England, where township and parish tended to be conterminous.

⁵⁷ See the discussion by W. Abel, *Agricultural fluctuations in Europe: from the thirteenth to the twentieth centuries* (1980), pp. 190–3.

ways to raise income, removing the risk of stagnation. Others clearly offered direct assistance in making these changes, or offered examples, and many provided a flexible managerial context in which change could take place: the complex links between these landlord factors, tenant farmer incentives to improve and to restructure production, and the market system that made such changes possible, were seen to particular advantage in the south Midlands – the heartland of parliamentary enclosure – where prior reorganization by agreement had also made an impact, and ‘subsistence, open-field’ arable was making a change towards commercial livestock. Ultimately, reorganization by act of parliament was important, but, at least in this region of England, should perhaps be seen primarily as the outcome of flexible specialization within a relatively open and commercializing market. Flexible attitudes in the management of land, so long as rents were met or were paid within acceptable limits of arrears, were thus another distinctive element in the British mix.

By the early nineteenth century, after the Napoleonic Wars, Britain had attained the maximum degree of accessibility and market integration possible without the displacement of wind and muscle power. Integrative transport changes were beginning on the east coast, with the introduction of steam coasters by the 1820s, and this further enhanced the access of distant rearing regions to urban markets, notably in permitting Scotland to enter the fatstock supply of London. This very high degree of market orientation, and openness through trading and transport systems, may have opened Britain to potential invasions from foreign food suppliers. There was thus some rationale in the 1815 Corn Law for a decade or so, and when, later in the century, the meat famines of the early 1860s and the harvest failure of 1874 opened Britain to overseas producers, the market was perhaps more open to full import penetration as a result of earlier extensive and successful integration than it might otherwise have been. Free trade and reduced transport costs combined to invert the gains of earlier integration, and permit Britain to abandon so much of its domestic food supply for imports, and to accelerate its shift of labour from the farm to town and factory, the early gains in free labour supply so important to its economic growth. As Avner Offer suggested, ‘In the Victorian era the British margin of cultivation was pushed to the edge of the American cornfields and the British urban fringe ran through the suburbs of colonial and American towns’.⁵⁸ Arguably the efficient and integrated farm economy of the eighteenth century became the first casualty of globalization in the nineteenth.

⁵⁸ A. Offer, ‘Ricardo’s paradox and the movement of rents in England, c.1870–1910’, *ECHR* 33 (1980), p. 245. For a survey of the changes of this period, see E. J. T. Collins, ‘Food supplies and food policy’, in Collins (ed.), *Agrarian history*, VII (i), pp. 33–71.

Growing peaches in Corbeil and Montreuil-aux-Pêches: how horticultural production adapted to Parisian demand, 1500–1800*

by Florent Quellier

According to Liébault and Estienne's *La maison rustique* of 1564, the best peaches were those grown in Corbeil, south of Paris, where small fruits with dry, firm flesh grew on trees planted in the vineyards.¹ A century later, Jean Merlet, author of the first French study of fruits, classified the Corbeil peach as a locally grown peach of reasonable quality,² while at the end of the seventeenth century Jean-Baptiste de La Quintinie classed it amongst the bad peaches, dreary and insipid in taste.³ In the following century this low status was confirmed by Le Grand d'Aussy who noted in 1782 that 'only poor people buy them'.⁴ What happened that rendered a fruit of excellent reputation in the sixteenth century mediocre and ordinary in the eighteenth? The answer lies in the clear improvement in the quality of fruit grown from the seventeenth century onwards. At the same time as the reputation of all fruit produced from standard peach trees was being undermined, the technique of training espalier varieties was being developed and improved in the village of Montreuil, to the east of Paris, where it became a specialism. An increase in available varieties also allowed the selection of juicy peach varieties, sweeter and larger, which were unknown in the sixteenth century.⁵

The changing fortunes of Corbeil and Montreuil peaches are of more than anecdotal interest, as they forcefully underline the importance of the history of taste in the study of urban food supply and agricultural specialization. They also reveal the existence of centres of

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¹ C. Estienne and J. Liébault, *L'agriculture et maison rustique* (1564, 1586), p. 210.

² J. Merlet, *Abrégé des bons fruits* (1667), p. 35.

³ J.-B. de La Quintinie, *Instruction pour les jardins fruitiers* (1690, modern edn, 1999), pp. 441–2.

⁴ Le Grand d'Aussy, *Histoire de la vie privée des Français depuis l'origine de la nation jusqu'à nos jours* (3 vols, 1782), (i), pp. 186–7.

⁵ F. Quellier, *Des fruits et des hommes. L'arboriculture fruitière en Île-de-France, vers 1600-vers 1800* (2003).

horticultural excellence that acted as quality benchmarks, and deal another blow to the myth of an unchanging rural economy. Neither products, nor horticultural techniques, remained unchanged in the period from the sixteenth to the late eighteenth centuries, and the key horticultural advances took place during the seventeenth century, an era with a poor reputation for agricultural progress.

The taming of climatic extremes, improvements in the techniques of training tree branches, together with the multiplication of available varieties in the countryside close to Paris, made it possible to produce fruit and vegetables to a standard unknown a century earlier. A dynamic, commercially-oriented peasantry, liberated from the tyranny of subsistence grain growing, created an 'alternative agriculture'.⁶ However, the proximity of numerous residences belonging to rich Parisians and families connected to the court, to these fruit- and vegetable-growing communities cannot be totally divorced from these horticultural advances. These élite families were obsessed with the kitchen garden in the two centuries before the French Revolution, and a blossoming French gastronomy favoured delicate herbs, fresh vegetables, and juicy fruits.

I

In an age of slow transport services many types of fruit and vegetables needed to be grown close to Paris to satisfy the city's demand for fresh produce. Compost, mulches, glass cloches, and south-facing walls were all used to produce early-maturing vegetables, to stretch the growing season for fruit, and to grow produce that was ill-adapted to the Parisian climate, such as apricots, figs, melons, and peaches. The pre-eminent symbol of the taming of the elements was the espalier fruit tree, which is discussed in every treatise on market gardening in the seventeenth and eighteenth centuries, and was a talking point for those at court, for fashionable Parisians, and for visitors from abroad.

The principle of the espalier is extremely simple. A tree trained in espalier shape benefits from the micro-climate around a south-facing wall, generally around three metres in height, which protects the trees from late frosts and cold winds, reflects the sun's rays, and retains overnight heat stored up during the day. Increasing numbers of trials of early and late varieties made it possible to draw out the length of the ripening period of the crop, and so profit from seasonal price fluctuations. The progressive reduction in leaf growth helped to increase the fruit's exposure to the sun, and to bring out the full colour of that fruit. To utilize this sheltered spot to the maximum, the unused space at the foot of the wall was used to germinate seedlings, grow early vegetables, strawberries, or even flowers, while sometimes a trellis of Chasselas or Muscat grapes was trained over the espalier trees.

Espalier techniques were developed by trial and error in the countryside around Paris during the first half of the seventeenth century, in the gardens of aristocratic and bourgeois families as well as on peasant plots. Sixteenth-century treatises on rural economy made no mention of these techniques, which were set out in print for the first time in 1638 in the work on J. Boyceau de la Baraudière.⁷ But it was not until more than a decade later that the techniques were described

⁶ J. Thirsk, *Alternative agriculture: a history from the Black Death to the present day* (1997).

⁷ J. Boyceau de la Baraudière, *Traité de jardinage selon les raisons de la nature et de l'art* (1638), p. 84.

in detail, in the treatises of Nicolas de Bonnefons (1651), and Le Gendre (1652), signalling the advent of a new horticulture.⁸ This chronology is confirmed by leases, and sale contracts in the Paris region, as well as recommendations of gardeners that describe their expertise.⁹

The development of the espalier provides an example of incremental innovation, in the shelter of garden walls, which Jean Meuvret once described as 'places of marvel, and experiment'.¹⁰ The multiplicity of ways of training trees described by Le Gendre and Bonnefons, and the use of the term 'pallisade' rather than 'espalier' in contracts drawn up by Parisian notaries in the 1650s suggest the absence of a single source of innovation and support the theory that progress took place on individual plots. The authors did not claim to be the inventors of these techniques, rather posing as improvers and popularizers. The current state of research does not allow us to use the term 'espalier' before the first half of the seventeenth century. The technique was developing during the reign of Louis XIII (1610–43), and became the subject of theoretical discussion and as well as being widely utilized under Louis XIV. Unsurprisingly there is evidence for fifteenth and sixteenth century antecedents in a picture of vines growing on trellises near Paris, displayed in the Louvre, and in archaeological finds at the Stade de France in St-Denis.¹¹

Building on these seventeenth-century innovations, the system of growing peaches against walls at Montreuil provides a perfect example of the refinement of this way of taming climatic conditions and its impact on quality fruit production. The peach walls built during the eighteenth and nineteenth centuries at Montreuil and in adjoining villages are remarkable for the creation of a unique, enclosed landscape as well as for the sophistication of the highly intensive production methods. The main walls were set six to twelve metres apart, aligned north-south, with partition walls at right angles every ten or fifteen metres. They formed a chequer-board landscape that was extended further during the nineteenth century as a result of the sale of church and aristocratic lands.

Espalier-grown peaches were far from being a specialist monoculture, but from the eighteenth century onwards they were grown side-by-side with apples, pears and plums, with early season cherries, gooseberries and strawberries, Chasselas dessert grapes and early vegetables and flowers for sale in the Paris markets. Montreuil's high reputation in horticulture was firmly established by the mid-eighteenth century according to the Abbé Roger Schabol, who described peach trees carefully trained along walls made with rough lime plaster. The lime plaster allowed the wall to settle without cracking, prevented insects from nesting close to the ripening fruit and, above all, allowed nails to be driven in. The form of training used was simple and flexible: the gardener trained the branches of the tree along the wall in a fan-shaped pattern, with the help of small pieces of cloth known as *les loques* which were nailed into the plaster. Along these well-trained peach tree branches, large, sweet, juicy fruits ripened

⁸ N. de Bonnefons, *Le jardinier françois* (1651); Le Gendre, *La manière de cultiver les arbres fruitiers* (1652).

⁹ Quellier, *Des fruits et des hommes*, pp. 132–7.

¹⁰ J. Meuvret, 'Agronomie et jardinage en France aux XVI^e et XVII^e siècles' in *Eventail de l'histoire vivante. Hommage à Lucien Febvre* (2 vols, 1953), (ii),

pp. 353–62.

¹¹ G. Gibault, 'Notice sur un tableau du musée du Louvre et l'origine des espaliers', *Société nationale d'horticulture de France* (1905), pp. 1–6; J.-Y. Dufour, 'Essai d'archéologie horticole en banlieue parisienne', *Histoire et Sociétés Rurales* 7 (1997), pp. 11–40.

despite the occasionally adverse Parisian weather. This cultivation was also made possible by the plentiful availability of manure and night soil brought out from Paris.

The development of a very similar system for producing table grapes at Thomery, south-east of Paris, follows a remarkably similar timescale. There, vines rather than peach trees were trained up walls, to ripen Chasselas dessert grapes for the early autumn market, using the processes described by the Abbé Rozier around 1800. Apart from the excellent growing environment, the superiority of Thomery grapes owed much to the practice of thinning out bunches to allow the growth of large grapes. Only the very best grapes were left in the bunch and the progressive removal of vine leaves exposed them to the sun to ensure they were perfectly ripe.¹²

However, foreign visitors were particularly surprised by the fig trees they found growing near Paris. The Englishman Martin Lister, visiting the royal vegetable garden at Versailles late in the seventeenth century, was impressed by the 700 fig trees found there and, together with 'other examples in Paris', led him to the conclusion that 'here they have a great liking for figs'.¹³ However, at first sight, the growing of figs seems something of a lottery given Paris's natural climate. For all that, the craze for growing fig trees from the early seventeenth century onwards is a further example of the successful adaptation of a species of fruit tree that was not naturally well-adapted to Parisian winters. During the seventeenth century careful selection from a range of wild varieties resulted in trees that could flourish in the climate, even though the later decades of Louis XIV's reign were marked by several particularly hard winters; in the following century they would be given names – the white fig of Versailles or of Argenteuil – that signalled the success of their climatic adaptation. In aristocratic gardens the fig trees could be grown in tubs interspersed along the whole length of the garden wall, and moved into a green house or orangery for the winter. In middle class and peasant gardens, a trained fig tree took its place against a wall among other espalier trees, perhaps in a sheltered corner of the wall, or besides a chimneystack. But fig trees were also grown in open fields, for instance in the vine-growing parts of Argenteuil and of Chanteloup to the north west of Paris.

Growing fig trees in tubs was an expensive solution to the problem of protecting trees from frost, and other methods were found. Where the fig trees grew in espaliers, in late autumn they could be detached from the wall, their branches lowered to ground level and covered with straw. For fig trees grown in bush form away from sheltered garden walls such procedures were even more necessary, and trees were covered with an awning. When grown in open-field conditions, the trees were planted to grow at an angle, and as winter approached the main branches were bedded down in trenches eight inches deep or more, and covered with straw, followed by a layer of straw mixed with a few shovels full of earth. Those branches not buried in the trenches were gathered together and then wrapped around with more straw. Despite all these precautions, in some years, such as 1670, 1675, 1676 and particularly 1709, the trees caught the frost; when that happened all that could be done was to cut the growth back to ground level. What was done to grow figs near Paris is a perfect example of how a craze for a particular fruit could drive changes in arboriculture and facilitate a commercially-driven group of peasants to adapt to a

¹² M. Pons, 'Le chasselas de Thomery, un raisin de luxe en Île-de-France (1730–1970)' in J.-R. Trochet, J.-J. Péru, and J.-M. Roy, *Jardinages en région parisienne*

XVII^e–XX^e siècle (2003), pp. 49–61.

¹³ M. Lister, *Voyage de Lister à Paris en 1698* (1873), pp. 185 and 200.

market with which they were in constant touch, It involved a search for technical solutions that were not particularly ground-breaking, to allow a variety of trees to be acclimatized, and to adapt to both fashions and the speculative nature of the crop.

In the market gardening areas of Paris, production was intensified, regularly using large inputs of urban night soil and horse dung to produce early vegetables, and varieties not naturally adapted to the Parisian climate such as cucumbers and delicious melons.¹⁴ Generous use of manure formed a layer that varied seasonally, to which was added leaf-mould. The heat produced by the rotting compost brought on seeds and seedlings at a quicker rate. Straw matting was used as a wind break and could be used to cover plants when there were hard frosts. The adoption of glass cloches, which became widespread from the eighteenth century onwards, made it possible to concentrate heat and protect plants from bad weather. In the second half of the eighteenth century growing crops in frames spread slowly across the market gardens of Paris despite its high costs. These large, wooden box frames topped with a panel of square glass set at an angle were much easier to use than cloches. The system also used a network of wells and trenches to ensure constant water availability. The market gardeners of the Parisian *marais* were thus able to produce a wide variety of early vegetables, and to plant a succession of crops in the same soil in the course of a single year. This highly intensive market gardening, which had freed itself in part from the constraints of climate, was made possible by extremely easy access to the urban market, by constant, heavy applications of manure, and by the hard work of the people of the area.¹⁵

The peach trees were trained by using techniques designed to make the best use of sheltered garden positions, and to optimize the use of limited space. Once a tree was planted against a wall, it could only be trained along the wall, and to the height of the coping stones. Equally, a standard tree grown in a confined space was trained to a specific shape, though in the walled gardens of the elite aesthetic considerations played their part in the shaping process. The need to grow plants and trees to high densities in gardens also influenced the selection of particular varieties of fruit trees. Experiments were made with other tree forms and types of training, and with root stock that tended to limit branch lengths: dwarf varieties and semi-standards, with espaliers and reverse espaliers responding to these changes.

Seventeenth- and eighteenth-century French treatises on horticulture were preoccupied with the problem of pruning trees, in contrast with the techniques described in previous centuries. Just as grafting techniques had been mastered during the middle ages, early modern improvements in pruning were aimed both at shaping the trees and encouraging fruit buds. This volte-face in horticultural treatises shifted the focus from grafting to pruning, and it was in that area of expertise that the *arboristes*, as enthusiasts for fruit-tree growing were called, gained their spurs, and sparked controversies over the merits of hard and light pruning.

The systematic and regular pruning of fruit trees in market gardens was engendered to make the best use of their climatic advantages, to adapt to space limitations, and to take advantage of the demand for high-quality fruit, all putting to good use the highly labour-intensive tradition

¹⁴ F. Charbonneau, "Melon pervers". *Attraites et périls de la bonne chère au siècle de Vatel, XVII^e siècle* 217 (2002), pp. 583–94.

¹⁵ R. Abad, *Le Grand Marché. L'approvisionnement*

alimentaire de Paris sous l'ancien régime (2002), pp. 624–44; T. Kleindienst, 'La topographie et l'exploitation des "Marais de Paris" du XII^e au XVII^e siècle', *Paris et Île-de-France, Mémoires* 14 (1963), pp. 7–167.

of market gardening: for these reasons the élite discourse added an environmental canon to its prescriptions. The evidence from accounts of gardening practice suggests that fruit trees in market gardens were regularly pruned, while those planted in fields and vineyards were only lightly pruned in a manner described as *nettoyage* (tidying, or cleaning) in the relevant clauses of seventeenth and eighteenth century leases. Unfortunately the phrasing of the technical lease clauses does not normally distinguish between different types of pruning. But a better overall understanding of pruning increased fruit production, and the practice of thinning out the fruit made it possible to grown larger individual fruits.

The evidence of horticultural treatises, nurserymen's catalogues and details of horticultural practice such as leases, probate inventories, testimonials of expertise, and fruit contracts all show the rich variety of fruit and vegetables grown in the country around Paris. The first French pomology (specialist book on fruit growing) was published in the mid-seventeenth century.¹⁶ Cherry trees, cultivated, wild, and white-hearted (*guigniers*), redcurrants and gooseberries, mulberries and figs, medlars, cornels, nuts and chestnuts, all grew abundantly in the countryside around Paris. In the last two centuries of the *ancien régime*, 23 varieties of pear, 12 varieties of apple, and 7 plum varieties are specifically named in records of horticultural activity that survive for the Montmorency valley north-west of Paris. These records show that the fruit actually growing in the Paris region is a good match with the best varieties recommended in contemporary gardening books. These statistics can only be a base figure, as there must have been more than seven varieties of local and indigenous plum trees in the region. There was an equally diverse range of varieties in the vegetable garden. J.-M. Roy has identified more than 20 different species of vegetables and herbs in production in the suburban market gardens of suburban Paris: classic cabbages, kohlrabi, and leeks were planted side-by-side with artichokes, pumpkins, melons, and so on.¹⁷

These production centres benefited from Paris's purchasing power, for the city drew in new varieties from the Loire valley and Provence in particular, but also from overseas. But new local varieties that came from experiments in cross-breeding with ungrafted suckers, and hybrids selected from the practical observation in market gardens. Only samples selected from a grafted stock would allow the continuation of identical characteristics in the fruit, for a tree raised from pips, or nuts, could develop natural genetic mutations. In a culture in which seeds were saved by the producers themselves, vegetables were bound to undergo unplanned mutations. But this diversity in varieties was something that contemporaries researched and supported. These practices whetted the appetites of the élite for making collections of things while, for the peasantry, they brought considerable economic security.

II

An analysis of the common features of the main production centres helps clarify the nature of horticultural progress in this period. The centres had in common a farming population that

¹⁶ Merlet, *Abrégé des bons fruits*.

¹⁷ J. Hubert-Brière and J.-M. Roy, 'Esquisse d'une spécialisation des jardiniers-maraîchers parisiens aux

XVII^e et XVIII^e siècles', in J.-R. Trochet *et al*, *Jardinages en région parisienne*, pp. 19–29.

could not participate in large-scale grain farming. They worked lands conveniently situated for major urban markets and could develop an 'alternative agriculture' that had its risks, but covered itself by deliberately producing a diverse range of products.

Peaches were produced in many places apart from Corbeil and Montreuil. However, large-scale fruit production was concentrated in five specific areas, which were in a broken circle of gardens and orchards around Paris. Some market gardens were even interspersed in the urban fabric of Paris. These Parisian market gardens of the inner suburbs were commonly called the *marais*, producing vegetables, aromatic plants (herbs) and to a lesser extent fruit, particularly apricots, as well as flowers such as wall-flowers and carnations.¹⁸

Four of the main production areas straddled the communications routes, and covered the back slopes of the hills and valleys within a radius of about 20 miles around Paris: on the western side along the valley of the Seine and on land close to Versailles; to the north-west along the Montmorency valley; to the east, Montreuil and the adjacent villages of Bagnolet and Charonne, and to the south around Corbeil. The fifth major centre lay 60 kilometres (37 miles) south of the capital on the left bank of the Seine around Thomery, close to Fontainebleau. The existence of this belt of market gardens and orchards all around Paris was hardly unique, for every major town had an equivalent inner zone producing perishable goods that could not be grown further away. However, Paris's supply area was uniquely wide in its scale, because of the size of the city, with its 604,000 inhabitants in 1780, and the opportunity this gave for the development of new fruit and vegetable régimes.

In an environment favourable for fruit production, the main growing centres developed close to major routes, near vineyards and forest areas.¹⁹ The centre furthest from Paris was close to the banks of the Seine, and the fruit it produced was sent down river in what were called 'Thomery boats'. Three of the five principal production centres were close to the Seine. Of the others, the Montmorency valley is crossed by two important main roads, the one linking Paris and Normandy, from St Denis to Rouen via Pontoise, and the other linking Paris and Picardy, from St Denis to Amiens passing through Beaumont-sur-Oise. The centre west of Paris on the left bank of the Seine also had access to the roads linking Paris with the royal residences at St Germain-en-Laye and Versailles.

Fruit trees were never grown far from vine stock, and the technical, economic, and mental linkages between the two is clear.²⁰ Both used the same kinds of land, often shared the same plots, and were excellently suited to a highly divided pattern of land tenure with small plots. The two crops share the same persistent problem of how to manage a plant crop that produces no saleable produce in its first few years. Pruning vines and trees, fixing vines to lattices and trees to espaliers, and hoe cultivation require the same practical knowledge and expertise and make similar demands on labour. Both viticulture and fruit tree growing were a natural area of operation for particular kinds of peasants: those who were market oriented and, because they were not held back by the pressures of a grain-growing monoculture, could develop

¹⁸ Ibid.; Abad, *Le Grand Marché*, pp. 625–44.

¹⁹ J. Tricart, *La culture fruitière dans la région parisienne* (1948).

²⁰ On vine growing near Paris, see M. Lachiver, *Vin, vigne et vigneron en région parisienne du XVII^e au XIX^e siècle* (1982).

an 'alternative agriculture'. Both vines and fruit trees flourished on hillside sites that were unsuitable for grain growing.

Again, the main production centres near Paris were close to great forests: the forest of St Germain-en-Laye and Marly to the west, of Montmorency to the north, Vincennes in the east, and Fontainebleau in the south. The forests provided a reservoir of wild fruit rootstocks on which to experiment, particularly the wild cherries, and it is possible to demonstrate that they were used in this way right up to the Revolution. It undoubtedly made it possible to select wild fruit species such as currant bushes. The forest origin of certain kinds of apple trees was readily admitted in contemporary market gardening treatises, and some varieties even had names reflecting those forest origins, such as the *Bondy* apple. The forests were also an essential and complementary space providing essential leaves in which to wrap fruit for dispatch to market. Baskets of fruit were lined and covered with a bed of leaves so as not to bruise the fruit on journeys made on pack animals or even on men's backs. At Paris they were used on the fruit sellers' stalls both as an indication of the freshness of the produce, and to bring out the colour of the fruit. The only problem with the forest was the competing demands of hunting. In the *cahiers* of complaints in 1789, losses from damage by game animals were a source of bitter complaint. However, hunting was also an indirect factor explaining the development of arboriculture, because it ensured that the roads were kept in good repair, and also attracted the monied classes to build houses close by so that they had easy access to the forest.

The forests also complemented fruit and vine culture in that they offered peasant families opportunities to exploit sales of pruned wood, which gave them a more regular income than selling fruit. Horticultural progress was possible because of integrated thinking in a rural economy accustomed to diversified production. Even in the *marais* areas of Paris itself, there seems to have been a greater diversity of production at the beginning of the period than in the eighteenth century. Unlike Joan Thirsk's model of an 'alternative agriculture' in England, what was happening in the countryside around Paris did not simply modify cereal rotations. In the seventeenth and eighteenth centuries neither the price of cereals nor the price of wine had a significant influence on the growth of fruit crops around Paris.²¹ The main production centres were at the margins of mainstream cereal production, using land on hillsides much less suitable for cereals than the adjoining wide plateaux. In a traditional rural economy centred on grain production, the guaranteed availability of staple foodstuffs was a necessary precondition for the development of 'alternative agriculture'. Such hillsides were close to Paris and to secondary urban centres, with access to a highly sophisticated market in agricultural products. Instead of competition for land, we are talking about complementary use of different terrains. These new types of farming did not develop from a traditional agriculture squeezed dry by falling grain prices, but as a dynamic and speculative agriculture focused on urban markets.

The risks of this crop diversification were acceptable because no centre depended on early or late ripening crops or an unpredictable harvest of cherries or peaches. There was no total specialization even where particular localities were renowned for one particular crop. Quite

²¹ Thirsk, *Alternative agriculture*; on how this system was adapted to the French conditions, see J.-P. Poussou, "L'agriculture alternative"? À propos d'un livre de Joan Thirsk', *Histoire et Sociétés Rurales* 12 (1999), pp. 131–47; Quellier, *Des fruits et des hommes*, pp. 116–24.

the contrary: this rural economy depended on a speculative diversification of crop types and varieties. Contemporary leases show that several different kinds of fruit trees were frequently found on the same plot. Producers grew fruit trees that did not flower all at the same time, aiming for a succession of fruit crops that extended over the greater part of the year, which gave them some insurance against freak weather. There were varieties that ripened in summer, autumn, and winter, early and later cherries, and apples that could be kept. An analysis of probate inventories shows that in the seventeenth century these producers were already bringing fresh fruit to market all through the year.²²

These peasants did not specialize in a single fruit crop but were producing a range of products for sale, from wine, vegetables, aromatic herbs, eggs and cheese, to hay and straw, wood and flowers. This was a truly market-oriented group of smallholders who were quite accustomed to adapting and diversifying their product range. They were already tied into existing commercial networks, which made possible their diversification into horticulture. A prime example is the village of Montreuil, where espalier walls for growing peaches were not built in large numbers until the eighteenth century, but a century earlier the village had already established a market culture and orientation that facilitated espalier fruit growing. Peasants from Montreuil were already sending eggs cheese and wine to the Paris market in the mid-seventeenth century, and the acreages devoted to new crops such as asparagus, strawberries and raspberries were significant enough to attract claims to tithes from them.²³ This diversified range of crops were all highly labour-intensive, and the close proximity of densely populated areas was a major asset.

The existence of pre-existing commercial networks also facilitated product diversification and horticultural improvement. Fruit and vegetable growers close to Paris sold their produce directly in the markets there, but also used peasant middlemen, widening the social range of these commercial networks. These peasant-merchants bought fruit and vegetables from other peasants, from noble and bourgeois landowners, and from clerical estate owners, and took them to market. They also had the perks of taking fruit from the trees planted beside royal and seigniorial roads. To facilitate this trade, such men negotiated season-long contracts worth considerable sums of money. The largest known buyer's contract is for the Montmorency valley, between 1640 and 1691, for 1400 French *livres*. These tie-ups smoothed the management of the trade by linking contracts for soft fruits with those for less perishable crops such as pippins and nuts, which were grown on both espalier and open ground. More remarkably these peasant middlemen were also long-distance traders. In the second half of the seventeenth century the fruit merchants of the Montmorency valley bought fruit from their own area, but also from areas to the west, the Vexin; to the north, as far afield as Picardy; and to the east, into the area around Brie. The middlemen of Thomery performed an identical role to the south of the Île de France. In the eighteenth century they scoured lower Burgundy and the Auvergne to the east, across to the Nivernais and Anjou to the west buying up fruit, particularly apples.²⁴

²² Ibid., pp. 282–5.

²³ M. Baulant, 'Du bon usage des dîmes dans la région parisienne', in J. Goy and E. Le Roy Ladurie, *Les fluctuations du produit de la dîme. Conjoncture décimale et domaniale de la fin du moyen âge au XVIII^e*

siècle (1972), p. 31.

²⁴ P. Brunet, 'Thomery. Genèse d'une arboriculture de banlieue', *Extrait des annales de l'Université, deuxième série, n°5, actes du 73^e Congrès de l'AFAS* (1954).

III

The dynamic production of market gardeners around Paris demonstrates the far-from-static nature of French rural society, showing how it was adapting both to urban demand and competition from other regions. The market gardeners produced fruits that were in fashion – pears, peaches and figs – and fine vegetables such as asparagus. Naturally, these were the fruits and vegetables favoured by those who developed the new French cooking style in the seventeenth and eighteenth centuries. There is a simple correlation in the two-way process of interaction between the availability of new crops and the development of a new cuisine. The new cookery was characterized by an infatuation with fresh vegetables and a rejection of exotic spices in favour of indigenous flavours. The mixture of herbs in a *bouquet garni* spurred the production of spring onions, shallots and above all parsley in Parisian market gardens.²⁵ These sought-after, delicate herbs could not be grown at any distance from the point of consumption because they depended on their freshness. The rejection of salted and pickled foods, and of dried vegetables, made local production of fresh vegetables even more important, although the importance of hot, cooked foods can be over-stated. When roast meats were served, the accompanying vegetable garnish was traditionally composed of cold vegetables, both raw and cooked. Desserts and collations were dominated by fresh fruit. These new dietary preferences and the state of contemporary technical knowledge were bound to stimulate local production of fruit and vegetables as well as of garden herbs and salad crops.²⁶

The need for fresh produce, transport difficulties, and the shelf life of foodstuffs, all determined what was grown in the market gardens of Paris and the surrounding region. For instance, the number of fruit trees grown close to Paris decreased continuously from the sixteenth to the eighteenth century because that land could be more profitably used for market gardening than for growing fruit just as easily produced in the surrounding countryside. In addition, land close to Paris lacked the walls necessary for espalier crops, and was expensive. In the same way production of cabbages in the *marais* decreased over the same years and was taken up on the flatlands between Vertus and Aubervilliers, north of the capital.²⁷

Competition between different production centres for fruit and vegetables, space constraints and the immediate proximity of Paris markets, all encouraged those gardening in the *marais* to abandon uncompetitive products and to increase specialization. Thus the *marais* followed a strategy diametrically opposed to that of the fruit-producing areas around Paris, specializing more and more after 1650 while those further afield diversified.²⁸

The countryside around Paris produced pears and peaches, cherries, raspberries and currants, because these products would not travel far. The villages concentrated on growing quick-ripening and luxury fruits. The high reputation of particular areas near Paris was linked

²⁵ Hubert-Brière and Roy, 'Esquisse d'une spécialisation', pp. 19–29.

²⁶ B. Ketcham Wheaton, *Savoring the past* (1983); J.-L. Flandrin and P. and M. Hyman (eds) *Le cuisinier français* (1983); S. Mennell, *All manners of food. Eating and taste in England and France, from the middle ages to the present* (1985); J.-L. Flandrin and M. Montanari

(eds), *Histoire de l'alimentation* (1996); J.-L. Flandrin, *L'ordre des mets* (2002).

²⁷ J.-M. Roy and F. Turek, 'Les cultures légumières à Aubervilliers. Aspects techniques et commerciaux' in *Paris et Île-de-France, Mémoires* 43 (1992), pp. 7–37.

²⁸ Hubert-Brière and Roy, 'Esquisse d'une spécialisation', p. 29.

exclusively to those fruit products that the state of early modern technology prevented from travelling any distance: Corbeil peaches, Montmorency cherries, Argenteuil figs, peaches from Montreuil and Vitry. In contrast, there was no equivalent level of specialization in apple production because bulk shipments reached Paris along the Seine from Picardy, Normandy, and Limagne. Equally, dried fruits were not produced close to Paris after 1650 because they had a long shelf-life, and merchants were prepared to look further afield for such products, to the advantage of producers of dried figs and raisins in Touraine and south-west France and along the Mediterranean seaboard.

The transformation of horticulture was the achievement of a commercially-oriented and dynamic class of peasant who realigned his products to satisfy the changing requirements of the Paris market in the face of competition from other producers. He produced the fruit and vegetables that were fashionable at the time, and invested in ways of taming climatic conditions to grow early and late varieties of fruit, and early vegetables. This is all a million miles from the stereotypical idea of the peasant lifestyle. A closer look at the landscape environment of the most renowned horticultural areas shows that as well as the three characteristics already discussed – proximity to forest areas, vineyards and good transport links at hand – there was a fourth that may have been even more important, the presence of the country retreats of élite families.

IV

Élite families engaged in a feverish rash of building works in the countryside near Paris in the seventeenth and eighteenth centuries. Such families sought places that gave easy access to the seats of power, were close to forests where they could hunt, and were on hillsides that could provide the pleasant prospects that were necessary components of the design specification for French buildings and gardens. These were identical to the topographical requirements of fruit-tree growing. As a result these suburban élite retreats were found cheek-by-jowl with commercial fruit growing regions. Thus every country house worthy of the name had its own vegetable and fruit garden, and élite families became interested in gardening. It is perfectly easy to see how the tree-growing obsession of the élite came into contact with the fruit-growing peasantry.

But was the interest taken by the élite in fruit and vegetable gardening a key component in the rise of horticulture in the Paris region? The standard historiographical position is that agricultural science was dormant in France between 1600 and 1750 and that both aristocratic and bourgeois élites took no interest in it.²⁹ This judgement is perhaps correct for a history of the rural France of cereal production and monoculture, which for so many years has dominated research, especially with its debates over an agricultural revolution that principally concerned wheat yields. Yet writers of books about market gardening, writing for élite landowners, were particularly concerned with the selection of fruit varieties, the pruning of trees, and the taming of the climate, three topics that are part of agricultural science and characterized horticultural progress at that time.

²⁹ A. Bourde, *Agronomie et agronomes en France au XVIII^e siècle* (1967), p. 59; G. Duby and A. Wallon (eds), *Histoire de la France rurale* (new edn, 4 vols, 1992), (ii), p. 196; J. Boulaine, *Histoire de l'agronomie en France* (1996), p. 11.

At one level we can appreciate the contribution of *élite* market gardening to the wider picture of agricultural improvement, but we need to show how peasant farmers could come into contact with those *élite* enterprises if we are to demonstrate substantial interaction. The horticultural treatises of the time described the fruit and vegetable garden of the *élite* in terms of an ideal landscape, a bubble of urban civilization sealed off from a rural world of which the *élite* inhabitants took little notice. But, at the same time, judicial proceedings and contracts for both garden work and fruit sales show that the enclosed fruit and vegetable gardens of *élite* landowners were well known to the village community. Their doors were open to gardeners and seasonal workers; middle-men came in to calculate the size of that part of the harvest that was to be sold; teams of pickers invaded closes and gardens, and at night, or when the owners were away, these gardens were the location both of thefts and of symbolic acts of vandalism by those who disapproved of this bourgeois encroachment. Thus fruit and vegetable gardens of the *élite* had the paradoxical function of simultaneously marking out social boundaries with their walled perimeters, and promoting intercourse between social groups.

This scenario offered opportunities for information exchange between those who read horticultural treatises and a peasantry deeply involved in market gardening. Is it not the case that the many treatises on market gardening published after 1650 claimed to 'instruct gardeners through the example of the best professionals'?³⁰ Thus the gardener working in a country retreat was manoeuvred into the role of cultural intermediary between the *élite* landowner and the wider village community. Unfortunately, the technical detail in surviving market gardening contracts is too imprecise to make it possible to demonstrate that middle-class ideas influenced local horticultural practice. Despite this, the most revealing clause about pruning fruit trees has been found in an agreement emanating from a Paris merchant. It instructed the lessee to 'cut and remove those branches that are superficial and will impede each other's growth'.³¹ Both the vocabulary used, and the type of pruning recommended, reflects the preoccupations of contemporary manuals. Equally, the one occasion when precise details of the depth and width of planting trenches are set down is in a lease drawn up by a citizen of Paris.³² It is most likely that technical progress was transmitted visually and orally rather than in writing, since meetings and conversations between the owner and his gardener were frequent. When the landowner was resident at his country retreat, such meetings may have been daily. The gardener also travelled regularly to the town house in Paris to deliver fresh fruit and vegetables. If we accept the working hypothesis that landowners passed on technical information to their gardeners, the gardener assumes a strategic position as one of the chief channels by which information spread from the walled estate garden to the village community. Unfortunately, very few sources survive to confirm likely roles except those leases in which the gardener was the lessee.

Luckily, one such contract has survived. On 12 November 1660 Michel Pommery, a

³⁰ R. Schabol, *La pratique du jardinage* (1770), preface, p. xii.

³¹ Archives départementales du Val-d'Oise, 2 E 7/516, lease, dated 19 Oct. 1664.

³² Archives départementales du Val-d'Oise, 2 E 7/531,

lease, dated 22 Feb. 1723, Saint-Brice: 'Faire faire des trous de deux pieds de diamètre sur un pied et demy de profondeur'. (Have holes two feet in diameter made, to a depth of one and a half feet.)

gardener resident in La Chevrette,³³ leased vines and fruit trees in a field for six years to a vine grower. The technical clauses about the vines are standard, but those concerned with the management and maintenance of the plot planted with fruit trees provide much more information: the lessor required a precise quantity of manure to be spread at the foot of each tree, even defining the quality, and permitted the lessee to use appropriate pruning skills on the fruit trees.³⁴

This one lease lends support to the idea that the gardener was a cultural channel between the élite, with their walled gardens, and village society. The unusual clauses in the lease are about fruit trees rather than vines. They provide no bland list of requirements, but precise technical instructions. They allow us to see that this gardener expected his trees to be manured and pruned, an expectation that before 1660 would have only been found for garden trees rather than those in the open field. It seems that this gardener was forcing his lessee to provide the same standard of care that he lavished on the fruit trees he managed himself. This lease is all the more telling because the lessor's place of residence is a favoured location for orchards and market gardens, which was also sought after by bourgeois and aristocratic families for their houses. In the 1640s, the Englishman, John Evelyn, advised those wanting to view excellent espaliers to visit La Chevrette. This instance gives qualitative evidence that techniques employed in the gardens of the élite could be diffused into the countryside by gardeners. Such mechanisms could also work in reverse, with practical gardeners instructing their landlords. The fruit and vegetable garden was one vector for the diffusion of good practice amongst peasant farmers bringing techniques from beyond their local horizons. This was the case with the form of slit grafting practised in the Montmorency valley,³⁵ and for the management of espaliers in Montreuil in the second half of the eighteenth century. Keen gardeners among the élite learnt about local techniques and methods when they hired village labourers, watched how they worked, and discussed their work with them. Where these indicated improved results, they were adopted in the gardens of the élite. From these networks it is possible to postulate a wide diffusion of techniques across the region facilitated by networks of amateurs.

What the élite landowners undeniably brought to the horticulture of the Paris region was a diversity of plant varieties. The local presence of an élite country retreat was an important factor in expanding the range of locally available varieties that reflected the good taste of the landowner, whether bourgeois, noble or clerical, manifest in the growing of new species and varieties of fashionable fruit and vegetables. The frequent vandalizing of rare ornamental trees on bourgeois land both in town and country was primarily evidence of a challenge to the existing social order, but it also testifies to the role of the élite in introducing new fruit varieties. In 1709, a citizen of Paris reported the theft of three young apple trees he had just planted on lands he occupied at Saint-Brice, claiming that one had been replanted on a wine grower's plot. Giving his evidence, the expert witness was categorical: it was definitely one of the three stolen trees. Not only did the tree carry a mark identical to those on the other young apple trees recently planted on the family holding of this particular citizen, but this variety

³³ This château currently lies in the commune of Deuil-la-Barre, north-west of Paris.

lease dated 12 Dec. 1660.

³⁴ Archives départementales du Val-d'Oise, 2 E 7/88, p. 171.

³⁵ La Bretonnerie, *Correspondance rurale* (1783),

of apple trees was unknown in the fields where it was found. This last point is crucial since it shows how absentee landowners were responsible for introducing new varieties.³⁶

Once a new variety had been introduced in an area, the inhabitants could observe its properties – its fruit's size and yield, its flowering and harvesting dates – and compare its performance when grown in the open or in enclosed gardens. They could get their information through the gardener himself, or from day labourers employed to help him. Once established in a particular parish, the new variety could spread easily by sale or exchange of grafting stock. This practice was warmly recommended in horticultural treatises, but was seen as the province of keen élite amateur gardeners not of peasant producers. But the evidence from numerous court cases concerning the theft of fruit tree branches provides evidence of the major means by which new fruit varieties spread locally. And the filching of a small branch or of a bud was particularly easy for a gardener, a casual worker, or even a passer-by, and left no record.

Thus Paris contributed to the development of fruit and vegetable growing through the mechanism of urban demand, and through the spread of good practice and innovation in urban gardens. One of the reasons for the remarkable dynamism in fruit growing in the Île de France after 1640 was the heavy concentration of aristocratic and bourgeois gardens in the niche localities that were economically, ecologically and mentally ready to adopt and create a dynamic and diversified gardening economy. Élite landowners supported and nourished agricultural specialization by introducing new species and varieties of fruit and vegetables, and by spreading knowledge of fashionable products and new pruning techniques.

The remarkable rise of Parisian horticulture was certainly driven by the historically-recognized need to satisfy urban demand, but this was supplemented by a strong social and cultural interaction between the growth of a new cuisine that favoured fresh indigenous aromatic herbs and the willingness of a commercially-oriented peasantry to respond to these demands by developing a dynamic, diversified and market-responsive horticulture. The beginning of this conjuncture can perhaps be found in the first half of the seventeenth century. The simultaneous appearance in 1651 of the *Cuisinier françois* of La Varenne, and of Nicholas de Bonnefons's *Jardinier françois* seems, in this respect, to be particularly symbolic of not only the strong link between the development of new cooking styles and the progress of Parisian horticulture, but also the chronology of change. Neither book foreshadows future changes but rather gives written confirmation of changes that were already happening. The perfecting of pruning techniques, the taming of climatic conditions, and the multiplication of varieties of fruit and vegetables, made it possible to produce high-quality fresh fruit and vegetables for the urban market, while the diversification of crops reduced the economic risks associated with a bad harvest. At the same time slow transport services limited the extent to which more distant production centres could compete even when their climate was more favourable. These circumstances were not reversed until the nineteenth and twentieth centuries, with the coming of the railways, the evolution of refrigeration, and the unrestrained growth of metropolitan Paris.

³⁶ Archives départementales du Val-d'Oise, B 95/1290, deposition dated 30 Dec. 1709 and report of visit on 31 Dec. 1709.

Technical improvement and rural change

Millstone production and trade in Europe as an indicator of changing agricultural practice and human diet, 1300–1900*

by Alain Belmont

In 1860 a merchant from the French Midi penned the following words with typical Latin fervour:

All care is taken to obtain good quality grain in large quantities, but very little to ensure good flour. The regions of Dombes, Les Landes, and Sologne are laboriously improved to produce grain that will be badly milled ... and then local people are naively surprised that they are provided with bread of very mediocre quality from grain of superb appearance that is judged to be of high quality.

He added ‘the most common cause of imperfect milling is poor millstones, or a general tendency to set up millstones defectively’.¹ The truth of these statements needs to be recognized, despite the author’s heated language. In the long sequence of processes bringing food from the soil to the plate, better milling was as important as land improvement or higher labour productivity.

Milling techniques were not stuck in a traditional mould, any more than agriculture in general. In the eighteenth century men such as César Bucquet and Oliver Evans made improvements to milling technology as great as the contributions of ‘Turnip’ Townshend or Olivier de Serres to crop rotation and management.² Their contributions have been studied in depth, but a discussion of them here would sidetrack the argument.³ However a further eighteenth-century advance has been neglected: the ever more rigorous selection of the types of stone used for milling grain. In Parmentier’s words, ‘the choice and quality of millstones ...

* The author’s research funding reference is LARHRA, UMR CNRS 5190.

¹ A. Piot, *Traité historique et pratique sur la meulerie et la meunerie* (1860), p. iv.

² C. Bucquet, *Mémoire sur les moyens de perfectionner les moulins et la mouture économique* (1786); O. Evans, *Guide du meunier et du constructeur de moulins*, fifth

edn, trans. from the English by M. N. Benoit (1830).

³ Amongst others by S. Kaplan, *Les ventres de Paris. Pouvoir et approvisionnement dans la France de l’ancien régime* (1988)

is an essential component of the process of extracting the full potential from wheat grain, in terms both of quality and quantity'.⁴

This chapter examines developments in the art of producing millstones and the consequences of these changes and their contribution to improvements in agriculture and food production. The chapter begins with a detailed case study of changes in France, before widening its scope to encompass the whole of Europe.

I

The mountain of Sényépy is situated near Grenoble, to the north-west of the alpine region, in a region called *la Matheysine*. Over the centuries eight stone quarries have been gouged out of its sides to provide millstones (Figure 11.1). The evidence for the oldest of these quarries goes back to the thirteenth century and the most recent were worked until the nineteenth.⁵ These quarries were not all worked at the same time. While the millers of the period of the Hundred Years War chose millstones from the northern flanks of the mountain, particularly from the quarry at La Motte-Saint-Martin, their successors in the eighteenth and nineteenth centuries sought out a quarry on the southern slopes of the mountain, the quarry of Prunières.

Why did they change their source of millstones? The quarries on the northern side of the mountain were far from exhausted and could have provided millstones for centuries more. The answer to this enigma seems to lie in the fact that between the fourteenth and eighteenth centuries the nature of the bread eaten in the region changed. Fourteenth-century manorial accounts provide indirect evidence that rye was then the primary grain consumed: of eleven mills in *la Matheysine*, only three paid any dues in wheat and eight paid only with rye (Table 11.1).⁶ Four centuries later, a report of 1730, describing the harvest of that year, shows a marked expansion in wheat production (Table 11.2). Rye was still the predominant cereal grown, but wheat now represented thirteen per cent of the volume of harvested grains in *la Matheysine*, and rather more than one third if the figures for *maslin* (a wheat-rye mixture) are added to it.⁷ In some communes that in the fourteenth century produced no wheat – for example Ponsonnnas, Prunières, and Sousville – the acreage of wheat and *maslin* planted exceeded the acreage of rye.⁸ Some generations later, around 1800, widows' pensions and artisan wages almost always mention only wheat, or occasionally *maslin*. Between the middle ages and the century of the enlightenment, village bread changed from being black bread, to brown bread, and then to white bread.

The stone quarried at La Motte was adequate for milling rye, but quite inappropriate for wheat. It is a very coarse schist conglomerate, black, grey and red in colour. Chemical analysis shows that it is essentially silica, but with a high percentage of aluminium and iron, which contaminated the flour with an unsightly grey and reddish powder. On the other hand, the stone

⁴ A.-A. Parmentier, *Avis aux habitants des villes et des campagnes sur la manière de traiter et de conserver leurs grains, de les moudre et d'en faire du pain* (Valence, an XIII), p. 18.

⁵ AD 38, 2 Mi 955, *Inventaire Marcellier*, vol. 5, fo. 230, 1261. For the nineteenth century see: AD 38, 7 S

1/1, Enquiry on mills, 1809.

⁶ AD 38, 8 B 61, fos. 18 and 26.

⁷ *Méteil* is a mixture of wheat and rye.

⁸ Bibliothèque Municipale de Grenoble, 1 Mi 2, Enquiry by the intendant Fontanieu.

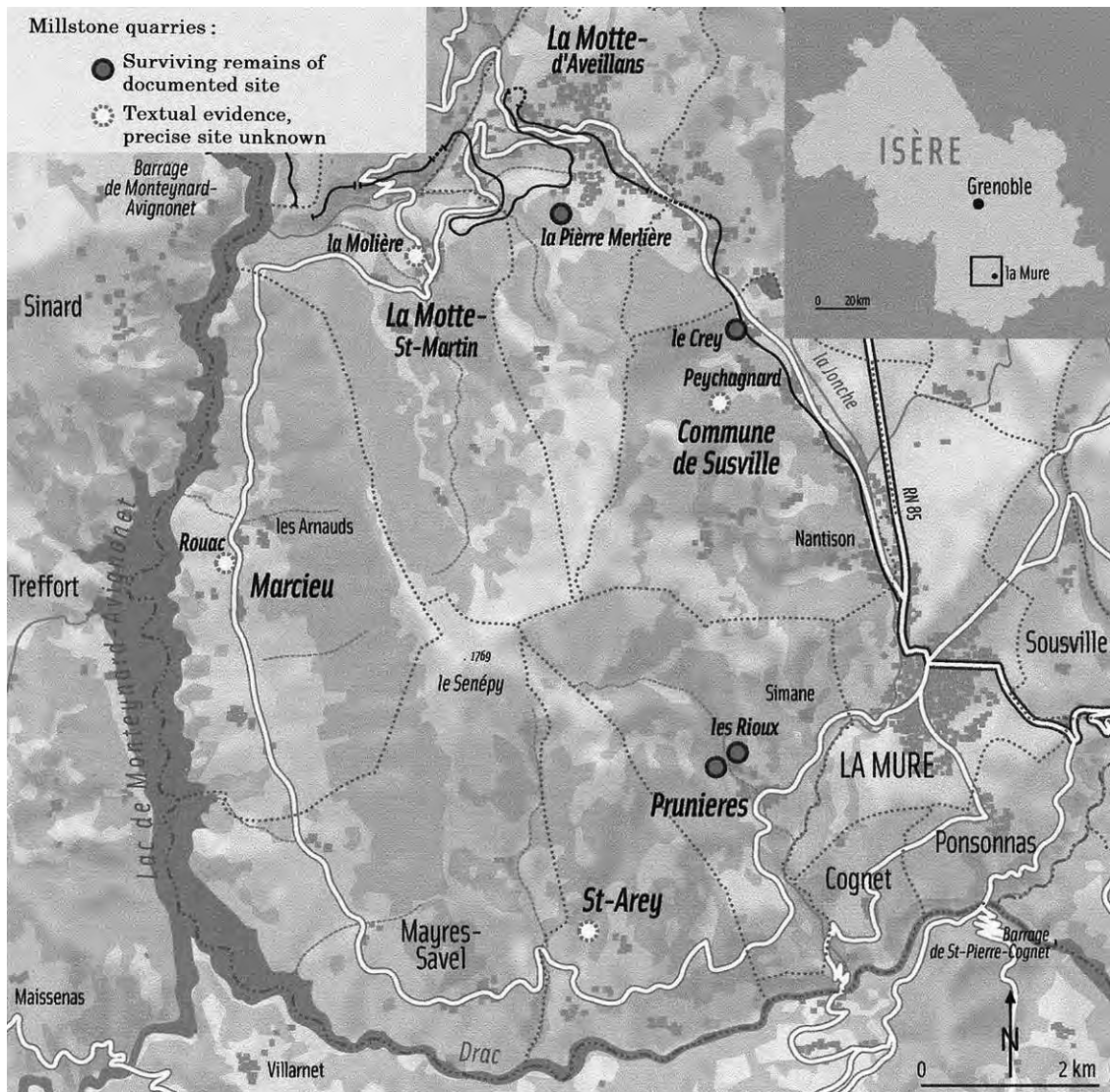


FIGURE 11.1. The millstone quarries of Senépy.

Cartography: N. Esperguin, CPI.

from Prunières – used by the millstone makers in the eighteenth and nineteenth centuries – is a white calcareous breccia, predominantly composed of calcium, with a low iron and aluminium content, and therefore not liable to contaminate the flour (Table 11.3). Millers changed the kinds of stones they used to adapt to their clients' requirements. They also responded to changing consumer tastes with the equipment in their mills. Instead of using one pair of millstones to grind all types of grain indiscriminately, they installed a second pair, so that they had a 'brown mill' and a 'white mill'. The brown mill used coloured stones and was used to grind rye and barley, while the white mill used snow-white stones and was reserved for grinding wheat.

TABLE 11.1. The output of mills at *la Matheysine* in 1370.

<i>Mill location</i>	<i>Rent = wheat</i>	<i>Rent = rye</i>
La Mure	X	–
Mayres	X	X
La Salle	X	X
Prunières	–	X
Ponsonnas	–	X
Sousville	–	X
Quet	–	X
Pierre de Podilon	–	X
Fontagnieu	–	X
Saint-Michel	–	X
Saint-Laurent	–	X
Total	3	10

Source: AD 38, 8 B 61, fos 18 and 26.

TABLE 11.2. Grain harvested at *la Matheysine* in 1730 (in quintals).

	<i>Wheat</i>	<i>%</i>	<i>Méteil</i> (<i>wheat and</i> <i>rye mixture</i>)	<i>%</i>	<i>Rye</i>	<i>%</i>	<i>Barley and</i> <i>oats</i>	<i>%</i>
La Mure	800	8.1	1100	11.2	5437	55.3	2500	25.4
Mayres-Savel	470	23.4	825	41.1	700	34.8	14	0.7
Motte d'Aveil	1000	25.6	800	20.5	900	23.1	1200	30.8
Prunières	250	19.1	300	22.9	600	45.8	160	12.2
Ponsonnas	250	28.4	300	34.1	200	22.7	130	14.8
Sousville	250	16.5	500	33.0	500	33.0	250	16.5
Quet	150	14.0	150	14.0	750	70.1	20	1.9
Saint-Arey	120	10.7	350	31.3	400	35.7	250	22.3
Cognet	120	21.4	250	44.7	150	26.8	40	7.1
Susville	100	4.6	1100	51.0	700	32.4	258	12.0
St Laurent	200	6.7	600	20.2	1900	64.0	270	9.1
St Michel	80	4.5	50	2.8	1145	64.5	500	28.2
Total	3790	13.1	6325	21.7	13382	46.0	5592	19.2

Source: Bibliothèque Municipale de Grenoble, 1 Mi 2, enquête de l'intendant Fontanieu.

TABLE 11.3. Chemical composition of stones taken from the millstone quarries of La Motte and Prunières.

<i>Chemical</i>	<i>La Motte, 14th century (%)</i>	<i>Prunières, 18th century (%)</i>
Silica	67.9	4.44
Aluminium	16.93	0.71
Iron	6.38	0.61
Manganese	0.03	0.037
Magnesium	1.19	0.61
Calcium	<0.001	51.07
Sodium	0.25	0.09
Potassium	3.5	0.18
Titanium	1.02	0.038
Phosphorus	0.06	<0.001
Loss in the process of heating to 1000°C	3.71	41.03
Total	100.97 %	98.82 %

Source: Analysis made for the author by CRPG, Nancy (France).

Millstones and millstone makers thus turn out to be sensitive proxies for larger changes. They enable us to trace the development of crop production, and particularly changes in the diets of ordinary people, a matter that historians find extremely difficult to pin down. Although archival sources provide few detailed statements about the quality of bread, millstones and their composition provide plentiful evidence in a good state of preservation. Unlike paper, discarded millstones do not turn to dust.

II

The line of research that began at the Senépy mountain has been extended over the last ten years to cover most regions of France: 4000 registers and manuscript collections have been examined in over 30 *départements* of France. One hundred and thirty-six quarries have been visited and stones from more than 50 of these have been chemically analysed, while two sites were subjected to archaeological excavation.⁹

An initial overview of the results of this research shows that in the middle ages and the early modern period, France had a huge number of small and localized sources for millstones. Most villages had one, especially those in mountain regions where quarries are even more densely clustered than on low-lying lands. What marks out these small quarries is their low production (perhaps less than a dozen millstones) and the poor skills of the craftsmen who fashioned them. Responsibility for getting millstones from such sites fell to the village blacksmith, or

⁹ For more detail see A. Belmont, *La pierre à pain. Les carrières de meules de moulins en France, du moyen âge à la révolution industrielle* (2 vols, 2006).

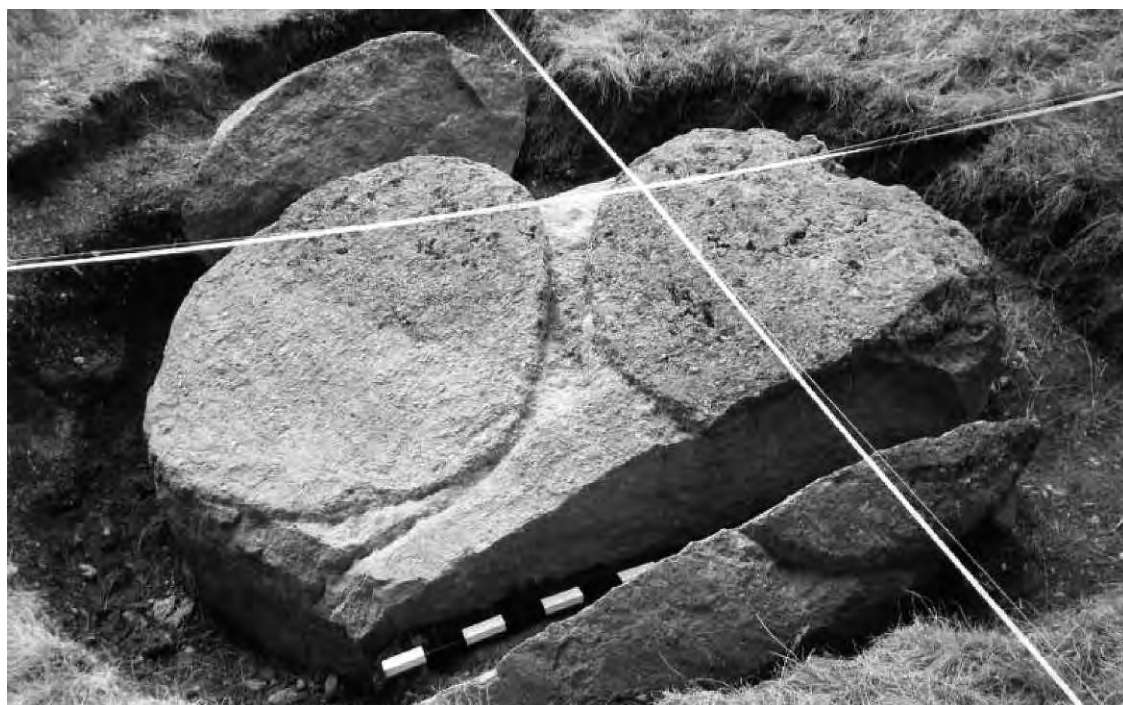


FIGURE 11.2. A millstone from Brandes-en-Oisans.

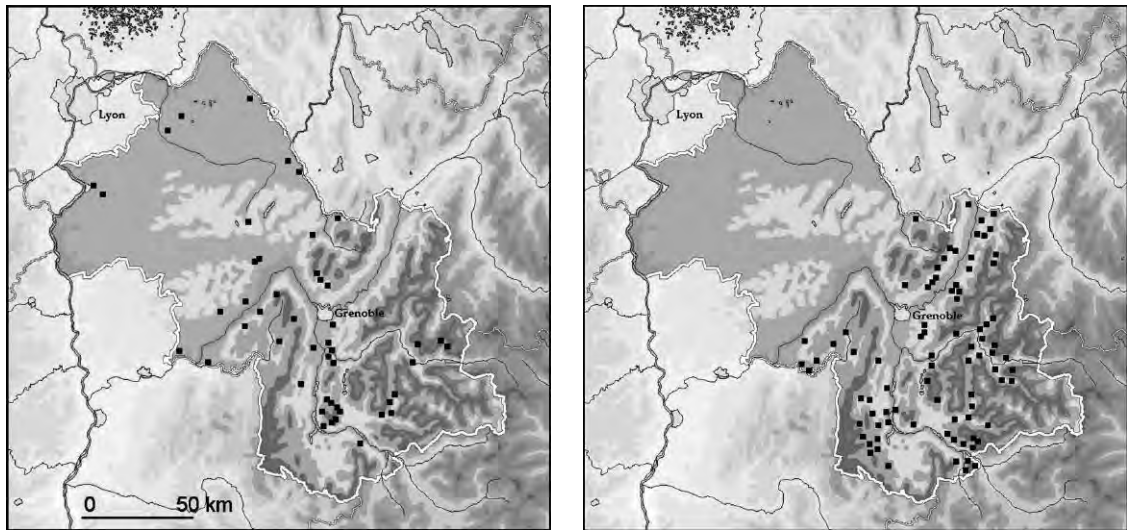
Photography: A. Belmont.

the mason or carpenter, or even to the miller himself and not to specialist millstone makers. Thus at Brandes-en-Oisans in the ninth or tenth century AD, a block of conglomerate had been worked by particularly unskilled hands, which made two attempts to cut a millstone from it (Figure 11.2).¹⁰ Quarries like these produced all kinds of stones: calcareous, gneiss, schist, mica-schist, basalt, tufa, granite, silica, gritstone, breccia, and various conglomerate rocks. The only types of rock villages were really deterred from using for milling were sandstone and oil shales.

But, in addition to this multiplicity of small, local producers, there already existed much larger millstone quarries in every French region. Such millstone quarries were always close to major commercial routes and were producing much higher quality stone than the local millstone quarries, principally gritstone, and conglomerates of granite and flint. Montmirail in Provence provides an example of a regional source, with its 20 underground chambers from which several thousand millstones were cut from the fourteenth century onwards, to be used within a radius of about 50 kilometres.

Small and large millstone-making enterprises only worked side-by-side for a limited period. At the end of the middle ages, and during the modern era, production became concentrated and the regional quarries were favoured over local sources of millstones. This progression seems to have taken place from the thirteenth to the sixteenth centuries in the most advanced economic

¹⁰ Dating ETH-30751, Age ¹⁴C AMS conventional: 1090 ± 50 BP (δ¹³C measured from -22,60 ± 1,2‰ vs PDB).



(a) In the twelfth to seventeenth centuries.

(b) In 1809.

Cartography: A. Belmont.

FIGURE 11.3. The millstone quarries in the Isère.

regions, such as the Paris basin. It then spread outwards to most parts of France between the sixteenth and eighteenth centuries. These changes are clearly shown on two maps showing the millstone quarries of the *département* of Isère, one for the twelfth to the seventeenth centuries, and the other for 1809 (Figure 11.3). A quick glance at these maps might give the false impression of a rise in the number of sites between the two periods. In fact they show exactly the opposite tendency. The 1809 map was based on a survey report listing all the millstone quarries that were known at that date, while that for the early period draws upon necessarily incomplete data from multiple sources, and only gives an approximation of the position during that long period. The conclusion that should be drawn from a comparison of the two maps is that millstone quarries disappeared from the plains of the northern half of Isère, and even from parts of the mountain zone. This is the case at Senépy: of the eight millstone quarries, only two remained in production in 1809. One of many other possible examples is the millstone quarry at Ecouges, in Vercors, which the University of Grenoble excavated in 2005. It was abandoned in the late fifteenth or early sixteenth century. Large numbers of quarries remained only in the heart of mountain regions, where the absence of good transport facilities inhibited the importation of millstones from distant quarries and forced a continuing reliance on local stones.

The disappearance of local quarries that came about in the early modern era was to the advantage of regional millstone sources, where both the quantity produced, and the production techniques employed, were on an industrial scale. Each French *département* had on average two regionally important millstone quarries, which indicates a total of around 200 sites across the whole country. These millstone quarries covered several hectares or more: the largest spread over dozens of square kilometres. In Languedoc, not far from Carcassonne, the quarry of Saint-Julien-des-Molières covered the best part of ten hectares: the fields and orchards described in a fifteenth-century cadastre give way to a lunar landscape of towering heaps of discarded stone



FIGURE 11.4. An example of a regional millstone quarry at St-Julien in the commune of La Livinière (Hérault).

Photography: A. Belmont

and depressions blocked by abandoned rough-hewn millstones. The most staggering source was in Poitou, where the ‘forest of millstone quarries’ was aptly named. The central core of this millstone source, included 4000 quarries concentrated in an area of around 300 hectares (750 acres), while outlying workings covered an area of almost 30 square kilometres (Figure 11.4).

The total production of such enormous enterprises is difficult to estimate. Saint-Julien probably produced more than 20,000 millstones, while the ‘forest of millstone quarries’ probably turned out more than 100,000. Written sources suggest an annual production between 30 and 600 millstones in the eighteenth century.¹¹ The teams of craftsmen involved typically varied from around a dozen men to more than 100 employed in the largest enterprises. The more modest enterprises were run by a master millstone maker drawing on his own family for labour,

¹¹ In Quercy, the millstone quarry at Cabrerète produced ‘30 or 40 millstones’ in 1807 and its two contemporary neighbours at Saint-Cirq-Lapopie ‘25 or 30 millstones’ and ‘about 60 millstones’, *Journal des Mines* 127 (1807). In Franche-Comté, the quarry at Moissesey and Frasne-les-Meuilières fabricated ‘around five or six hundred a year’, O.-P.-A. Dufrenoy, ‘Rapport sur le gisement des pierres meulières des environs de Paris’, *Bull. Société d’Encouragement pour l’Industrie nationale* (1834), pp. 397–405 and 411–23.

while at the most advanced, a classic industrial employment structure evolved with workers of greater or lesser skills at the bottom, quarry masters above them, and entrepreneurs at the head of the whole business. Such entrepreneurs belonged to the commercial bourgeoisie. They controlled capital to the value of hundreds of thousands of *livres*, and could tap commercial networks spread across a province, or even several provinces. Thus the 'forest of millstone quarries', controlled by the mayor of Châtellerault, exported millstones as far as Brittany and Normandy, more than 300 kilometres from the source.¹²

The champion of champions in millstone production was the area of quarries opened up around La Ferté-sous-Jouarre in Brie. Ever since the fifteenth century, a hundred or so workers had shaped the millstones supplied to the expanded north-west quadrant of France; in the sixteenth century, millstones from these quarries were used as far afield as the Loire estuary, the Dauphine, and even Provence. In the reign of Louis XVI no less than 4000 workers were producing between 2000 and 6000 millstones a year, either in single blocks, or in segments for reassembly. They sent stocks to a whole range of depots entrusted to factors and used this indirect method to distribute *briardes* or *françaises* as they called these millstones, to over two-thirds of France. Thus in 1791 the network of factors and clients of the firm of Gueuvin-et-fils covered an area from the Austrian Netherlands to the Atlantic coast and Mediterranean ports (Figure 11.5).¹³ These factors sold millstones from La Ferté to merchants who exported to distant overseas markets. An indication of this comes in a letter written by a middle-class Birmingham traveller, Tertius Galton, who, describing a journey from Nancy to Paris, declared he had seen nothing worth remarking 'unless it is the immense collection, many thousands, of mill stones at La Ferté sous Jouarre. These millstones are sent to England, America and I believe everywhere else for the purpose of grinding corn'.¹⁴

The dispatch of millstones weighing between one and four tons the length of France, even across the world, required considerable organization and power, and the use of special vehicles and adapted boats. It was also expensive. In the mid-eighteenth century a millstone from Brie cost between 500 and 700 *livres* to install in the Dauphiné, which is the equivalent to the cost of building a house.¹⁵ For comparison, a millstone hewn from regional millstone quarries would have cost only about 200 *livres*, and a locally sourced stone even less.¹⁶ But the best stones were a profitable investment: stones from Brie were reputed to be the best in the world, a view confirmed by modern experiments in the laboratory. The millstones from La Ferté-sous-Jouarre are cut from a decayed flint formed in the quaternary era, which can properly be called 'millstone' flint. This flint has a surface full of sharp breaks, which make it ideal for milling grain. Consisting of 96–98 per cent pure flint, it is extremely solid and hard: whereas a local millstone probably withstood a pressure of 10 megapascals (0.1 t/cm²) and a

¹² AN, F 20/295 et 296, enquête sur les moulins de France, 1809.

¹³ AD, 77, 35 E 25, probate inventories of Jean-Louis and Pierre-Louis Gueuvin, 1791.

¹⁴ Birmingham City Archives, MS 3101/C/D/10/10, 29 Sept. 1818. I am grateful to Peter Jones of the University of Birmingham for this.

¹⁵ For example in 1757 the Commandery of St-Paul-

les-Romans bought one at Lyons for 550 L., to which 110 L. were added for transport costs making a total of 660 L. (AD 69, 48 H 224, letter of 16 Nov. 1757 and 48 H 557, payment orders dated 18 June and 10 July 1757).

¹⁶ In 1759 the owner of the mill at Murinais, not far from Romans, paid only 191 L. for a millstone sourced at Quaix. AD 38, 3 E 4672, 15 Mar. 1759.

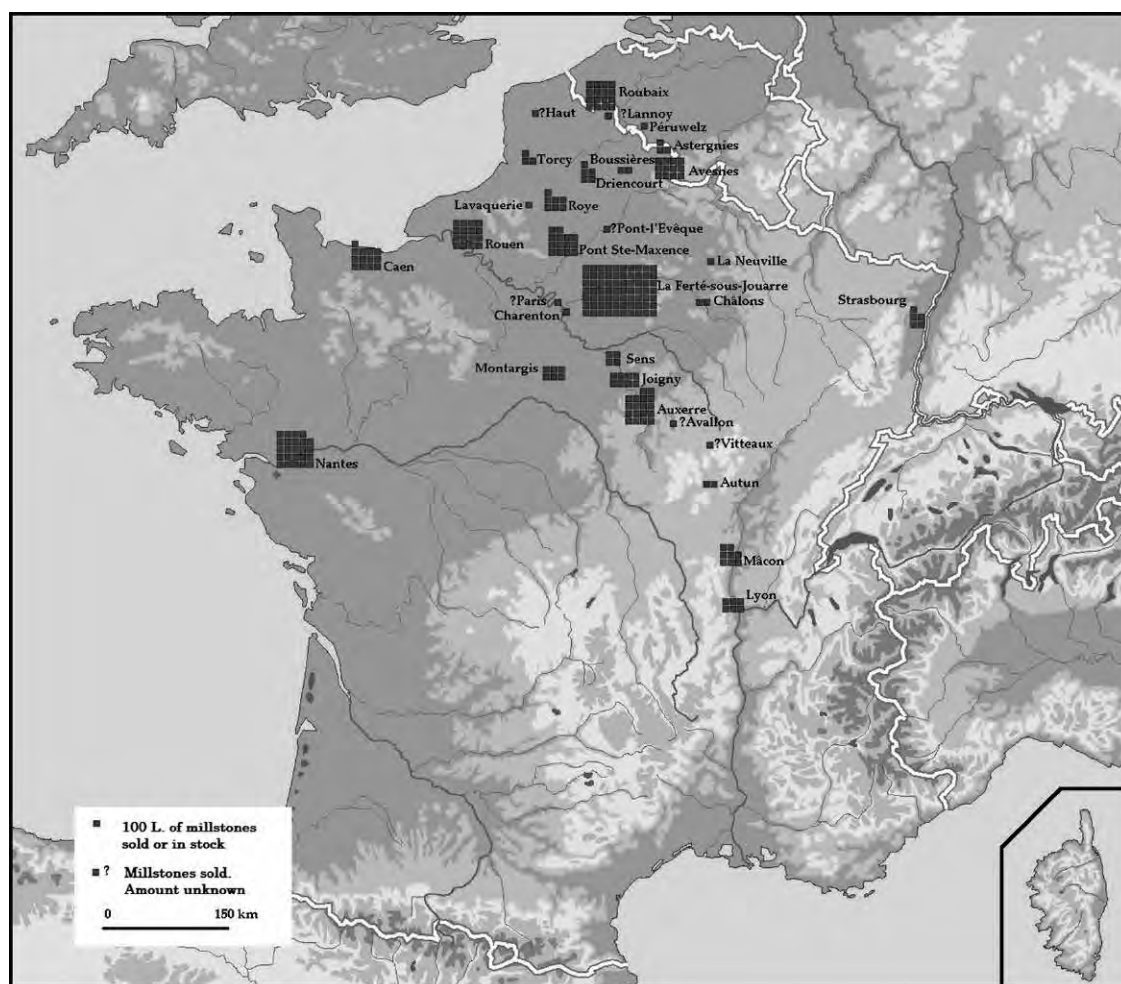


FIGURE 11.5. Location of the agents and customers of the firm of Guevin-et-fils, based at La Ferté-sous-Jouarre, in 1791.

Cartography: by A. Belmont.

Note: 100 L. = 100 livres.

regional millstone a pressure of 30 to 40 megapascals (0.3 to 0.4 t/cm²), Brie stone resists up to 240 megapascals: 2.4 tons per square centimetre. What this meant was that a millstone two metres in diameter could withstand a weight of 72,000 tons.

These physical qualities explain why it was that between the end of the middle ages and the beginning of the Industrial Revolution, French mills were converted to flint millstones. By 1809 almost every *département* adopted millstones brought in from Brie, or from deposits whose quality approached it, such as those from Châtellerault, Dordogne, Chavarot and Cinq-Mars-la-Pile (Figure 11.6).¹⁷

¹⁷ AN F 20/295 et 296, enquête sur les moulins de France, 1809.

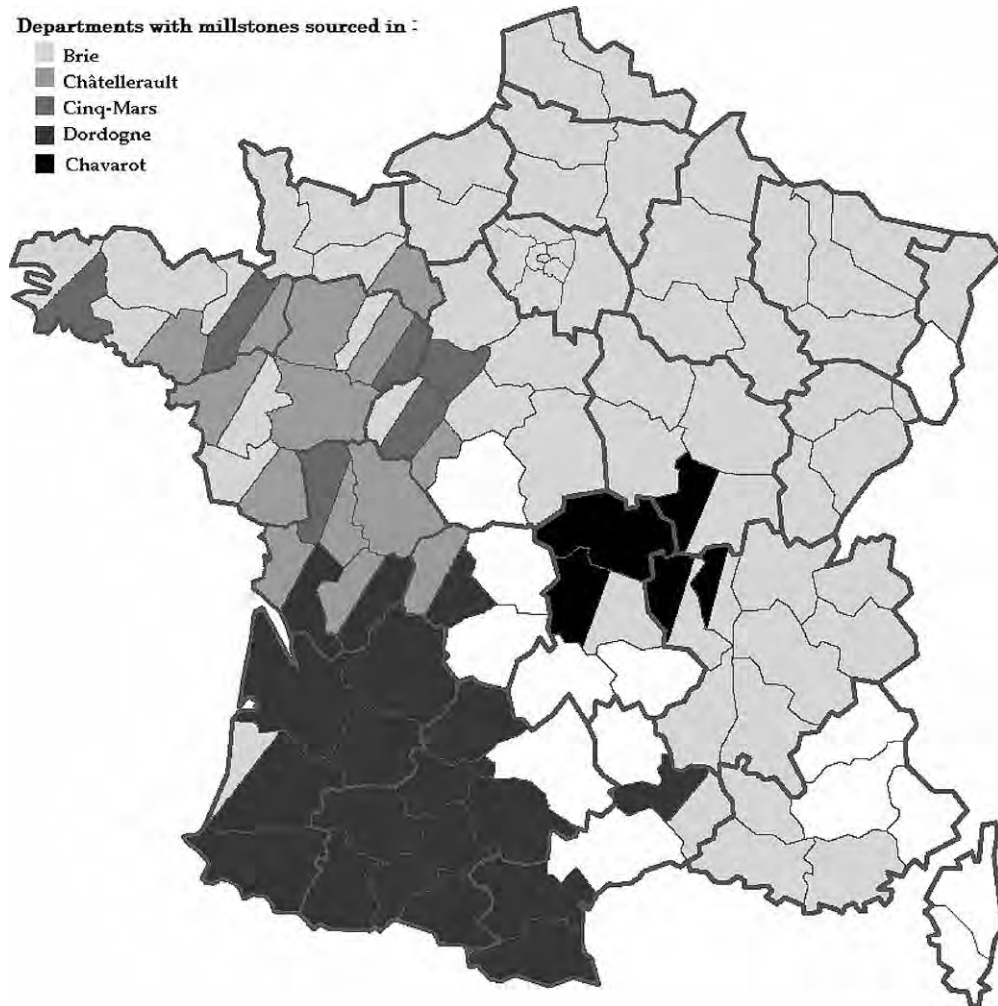


FIGURE 11.6. Domination of French milling by flint millstones, 1809.

Cartography: A. Belmont.

Note: White indicates that no flint millstones have been found.

III

The conversion of French mills from locally-sourced millstones to, first, better-quality stones from regional quarries, and then to millstones from the great production centres of western France and the Parisian basin, brought about a true revolution in the art of milling. The least important aspect of this progress was the profitability of the investment for mill owners. Buying a regional millstone, or one from Brie, cost three or four times what a local stone cost, but the Brie stone had a useful life of 20 years or so, compared with three to eight years for the local product. The purchase of a Brie stone was therefore an interesting investment decision, involving weighing a variety of factors and risks.

This calculation became even more nicely balanced as efficient modern milling spread across France from the middle of the eighteenth century. We may recall that milling involved passing the grain through the mill several times to maximize the amount of flour extracted. This required the use of particularly hard millstones, even though these were used for a just a few half-years only. It has been argued that the diffusion of *briarde* millstones was a consequence of the spread of efficient milling,¹⁸ but this cannot be right, since the *briarde* stones had begun their conquest of the French countryside at least a century before these new milling techniques were developed. These 'French' millstones seem rather to have accelerated the spread of new milling techniques that were close to the heart of Parmentier and the physiocrats.

Better millstones also undoubtedly had a part to play in the rise of white bread. The millers' responses to the enquiries of 1793 and 1809 show that flint millstones were used to mill wheat, whereas rye, barley, oats and maize were milled with ordinary stones. At Pouilly-Saint-Genix near Geneva, millstones were 'partly made up from blocks of what are commonly called French stones which are preferred for white bread over serpentine stones'.¹⁹ In the Ornans district of the *département* of Doubs, the mill at Mouthier-Haute-Pierre was described as 'fit to mill wheat, called brie', while that at Cléron there were a 'pair of millstones described as "from Brie" for milling wheat'. Elsewhere there were millstones with 'brie for wheat and others for barley ... and oats'. In the Puy-de-Dôme two of the ten mills in the Artonne district were equipped with 'millstones from brie ... used for white bread', while the other eight had only 'millstones of gritstone' and were used for 'brown bread'.²⁰

Historians today find it extremely difficult to follow the precise pattern of diffusion of white bread consumption. When did white bread first appear on village tables? Current historical opinion points predominantly to very late adoption. Thus, Fernand Braudel concluded that the addition of white crown loaves to the diet was a slow process that occurred only in the late nineteenth century. Up until then white bread was a luxury item, which the urban poor gazed at from a distance, and of which village people often knew nothing.²¹ Did then Louis XIV's and Louis XVI's subjects only consume 'coarse round brown loaves'²² or 'coarse bread ... heavy and indigestible',²³ which, 'because it was badly cooked, poorly leavened, and badly stored, tasted sour or mouldy'.²⁴ This scenario is totally incompatible with what we know of the investment made in new equipment for France's corn mills.

The evidence for the spread of improved millstones, suggests that white bread appeared on village platters distinctly earlier. Table 11.4 shows that in the northern Dauphiné, that is to say in a region of plains and plateaux, the brie millstones were used in 'brown' mills, and in the

¹⁸ H. Amouric, 'Moulins et meuniers en Basse-Provence occidentale du moyen âge à l'ère industrielle' (unpublished 3rd cycle thesis, Université de Provence Aix-Marseille I, 1984), p. 264.

¹⁹ Archives d'État de Genève, ADL B 730. See also R. Jagnaux, *Traité de minéralogie appliquée aux arts, à l'industrie, au commerce et à l'agriculture* (1885), p. 277, 'The flint at La Ferté ... is easily fashioned, lasts for a long time without adjustment, and above all produces very white flour'.

²⁰ C. Gindin, 'Les meules dans l'enquête de l'an II

sur les moulins à blé' in M. Barboff, F. Sigaut, C. Griffin and R. Kremer (eds), *Meules à grains. Actes du colloque international de La Ferté-sous-Jouarre, 16-19 mai 2002* (2003), p. 265.

²¹ F. Braudel, *L'identité de la France* (1990), p. 757.

²² P. Goubert, *Les paysans français au XVIIe siècle* (1982), p. 107.

²³ E. Le Roy Ladurie, *Les paysans de Languedoc* (1985), p. 179.

²⁴ J.-M. Boehler, *La paysannerie de la plaine d'Alsace (1648-1789)* (3 vols, 1994), II, p. 1697.

TABLE 11.4. Changes in the use of 'French' millstones in the grain mills of the northern Dauphiné, 1600–1799.

	1600–1649		1650–1699		1700–1799	
	Number of mills	%	Number of mills	%	Number of mills	%
Active 'brown' mills	8	36%	8	33 %	1	6.5%
Disused 'brown' mills	12	54%	9	38 %	1	6.5%
Active 'white' mills	0	0%	2	8 %	7	47%
Disused 'white' mills	2	10%	5	21 %	6	40%
Total	22	100%	24	100 %	15	100%

Source: S. Grare, *Moulins et meuniers en Val d'Ainan, 16^e–17^e s.*, Master of History directed by A. Belmont, Grenoble University (1999), II, p. 37.

milling of rye at the beginning of the seventeenth century. Then, beginning in the reign of Louis XIV, the emphasis changed: brie millstones were primarily used in 'white' corn mills, whereas 'brown' corn mills were only provided with regionally-sourced stones. This switch tempts us to draw a picture of the democratization of wheaten bread, which is confirmed by other sources.

The use of the word 'democratization' rather than 'appearance' is deliberate. The impact of flint millstones on village diets was effectively much greater in the seventeenth and eighteenth centuries than later. Even before flint millstones from Brie began to be used to grind wheat, the limestone millstones were undertaking this work, as we can see from the case study of the Senépy millstones earlier in this chapter. If we now analyse a map of the medieval Dauphiné, which shows the colour of the millstones used in mills, we find that even in the fourteenth and fifteenth centuries, the majority of mills in the northern sub-region of plains and plateaux were employing 'white' rather than 'brown' millstones (Figure 11.7). To secure millstones appropriate for milling white flour, the people of the Dauphiné were prepared to use quarries situated high in the mountains, at over 1000 metres.²⁵ Even in the period of the Hundred Years War, the colour of breadcrumbs was already significant to ordinary folk in a region that was amongst the poorest in western Europe. The same was true of other French regions.²⁶

Let us return to Table 11.4, where the left hand column shows that, at the beginning of the

²⁵ This was the case with the millstone quarries of Mont-Saint-Martin, in the massif of la Chartreuse at a height between 1000 and 1200 metres above sea level, for which there is evidence from 1327 onwards, but which were abandoned in 1519.

²⁶ The Dauphiné is not a special case. Brown and white millstones also appeared in other parts of medieval France. In the Albi region in the fourteenth century, 'we use millstones called *brusquières* for brown flour (rye, rye and wheat mixed, barley), and stones called

bourdelèses [bought at Bordeaux] for grains giving a white flour (wheat)'. See G. Sicard, *Aux origines des sociétés anonymes. Les moulins de Toulouse au moyen âge* (1953), p. 47. In Lomagne in Aquitaine, '*molas blancas*' and '*molas deu molin negre*' were recorded from 1480, at Lectoure from 1525, at the Repassac mill; see E. Ducassé, 'Meules et moulins en Lomagne', *Bull. Société archéologique et historique du Gers*, 96e année, 3e trim. (1995), pp. 281–2.

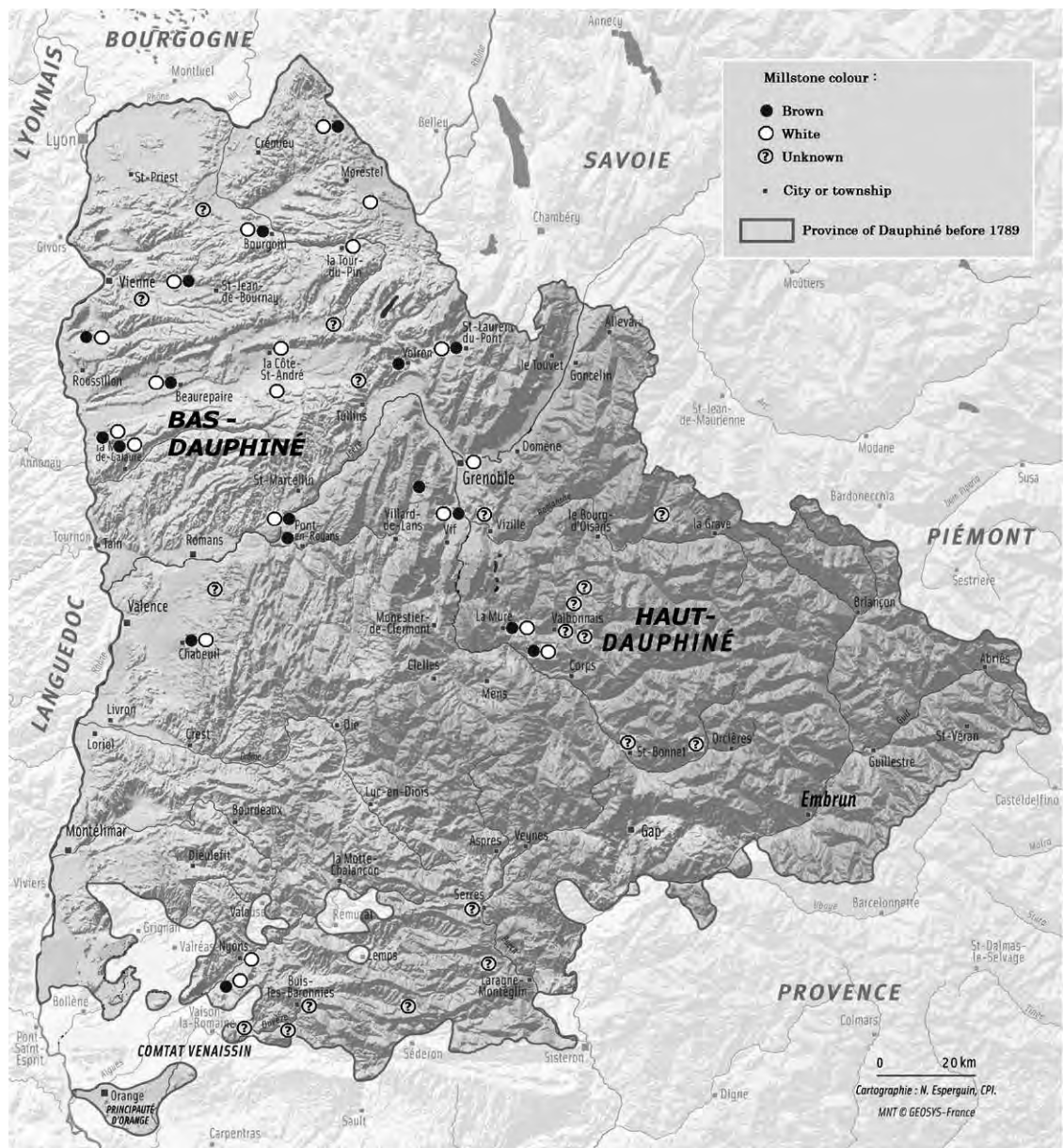


FIGURE 11.7. 'White' and 'brown' mills in the Dauphiné in the fourteenth and fifteenth centuries.

Cartography: N. Esperguin, CPI and A. Belmont.

seventeenth century, brie millstones were mainly installed in 'brown' grain mills. The reason for this cannot have been related to the economics of milling, or even the refinements of white bread, if we recall that these were installed in 'brown' mills not processing wheat. The financial investment made by the millers has another explanation: the preservation of their customers' teeth. Millstones from local quarries, and even from some regional quarries, often

had the drawback that they contaminated the flour with granules of sand from the stone. Unless there was a sufficiently fine sieve, these particles turned up in the bread, making it as digestible as a fistful of sand. In 1615 the famous economist Monchr stien let fly against the flour produced by these millstones: ‘crude, mixing in gravel and stones, which ends up between the teeth; this deserves exemplary punishment!’²⁷ Similar complaints can be found all across France. At Roybon in the Dauphin , ‘the flour produced with such soft millstone is full of sand, which is to the great prejudice of the said inhabitants, as it is almost impossible to eat the bread made from the flour produced in the said mills’.²⁸ At Engins, the inhabitants stopped using the mill, because the millstones ‘were in poor condition’; one farmer testified that ‘some time ago the Lady Belle told him to sample her bread, and asked him if he did not think there was sand in it, that he ate it and found that it cracked when he bit on it’.²⁹ At Salon-de-Provence the normal millstone was ‘soft’ and ‘sandy’, and ‘cannot stand up to pressure and spoils the flour’.³⁰ In Aunis where the millstones were made ‘of a breccia stone which is a combination of silica and quartz held together by a cement of heavy fluorspar, and dull white in colour, the flour produced contained large numbers of small grains of sand which crunched between the teeth’.³¹

Because the French population of yesteryear had to eat bread mingled with sand day in, day out, throughout their lives, they wore away their teeth even if they managed to avoid breaking them on a rather larger than normal granule. Their skeletal remains bear even greater witness to what they suffered than the written record. Those medieval men and women who survived beyond the age of forty show a high degree of tooth wear. Frequently, the crowns of their molar teeth have lost half or more of their original height to the point where the neck of the tooth shows. When the tooth became too thin it broke and fell out. Alternatively, the pulpar cavity was exposed and became infected. This brought on a tooth abscess, accompanied by agonizing pain, and in turn led to the tooth falling out. In extreme cases the jawbone could become infected, spreading through the body and causing death.

Archaeologists and anthropologists have been aware of heavy dental wear for a very long time,³² but the hypotheses that have been erected to explain the phenomenon are far-fetched. Amongst the bizarre explanations was one that the dead man was a professional painter who had chewed on his paintbrush all day long. More serious explanations sought answers in the texture and nature of the diet: that a diet based primarily on cereals and raw ingredients would make more demands on the teeth than one based on meat and cooked ingredients. However the quotations about flour quality cited earlier suggest that poor quality millstones should be high on the list of causes of tooth wear. This is reinforced by further examination

²⁷ A. de Montchrestien, *L’ conomie politique patronale. Trait  de l’ conomie politique* (1615), p. 263.

²⁸ AD 38, 3 H 28, *proc s-verbal* of the inhabitants of the community of Roybon, 17 May 1712.

²⁹ AD 38, 14 B 764, deposition of the miller Pierre Jay-Durand, 27 Dec. 1774.

³⁰ Text of 1709 cited by Amouric, ‘Carri res de meules...’, p. 462.

³¹ AN, F/20/295, ‘Enqu te sur les moulins de France’,

response of the prefect of Charente-Inf rieure, 1809.

³² H. Brabant, ‘Observations sur la denture humaine en France et en Belgique   l’ poque gallo-romaine et au moyen  ge’, *Bull. groupement international pour la recherche en stomatologie* 6 (1963), pp. 169–296. G. J. R. Maat and E. A. Van Der Velde, ‘The caries-attrition competition’, *Int. J. Anthropology* 2 (1987), pp. 281–92.

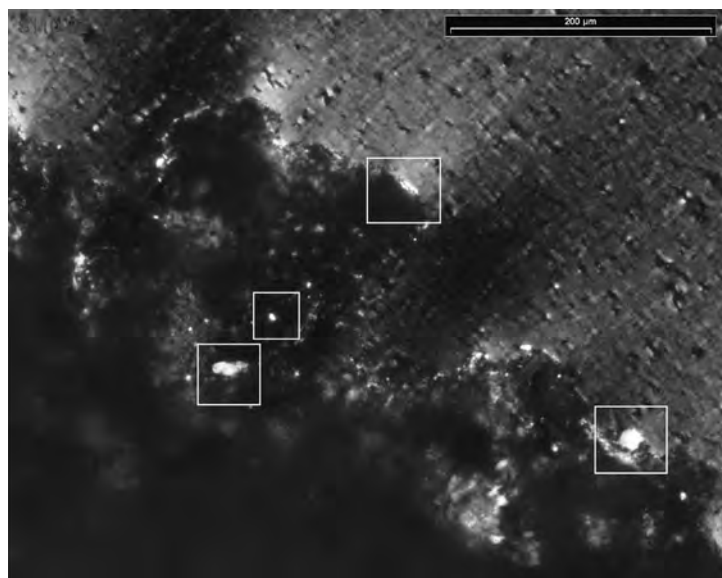


FIGURE 11.8. Dental tartar seeded with fragments of flintstone, Grenoble, thirteenth century.

Photography: E. Carrio-Schaffauser, Grenoble University.

of skeletal remains undertaken by a team put together by the University of Grenoble, which recovered thin slivers of tartar deposits from the teeth of people who died in the town during the thirteenth and fourteenth centuries. When these were examined under a microscope they were shown to contain countless sand particles, derived from very poor millstones (Figure 11.8).

Our ancestors were well aware of this problem and knew how they could remedy it. In the mid-sixteenth century, Jean Bruyérin, a doctor, provided a solution – which was picked up by the more celebrated Charles Estienne and Jean Liébault in their celebrated *L'agriculture et maison rustique* of 1578 – that flour mills should use:

a millstone of hard stone, all in one piece if possible, like those found in Brie and Champagne, particularly those from La Ferté-sous-Joarre: because millstones from soft and yielding rock always shed chippings as they turn, which become mixed with the flour and spoils the taste and texture of the bread, and very often harm teeth.³³

This advice was repeated in every edition of the book throughout the seventeenth century. Eventually, people took notice. When flint millstones became dominant in French mills, discussion of the health issues surrounding worn teeth disappeared from medical and agricultural treatises, and complaints about flour full of sand particles were then found only in mountain regions where the millers continued to use local rock types. Skeletons recovered from seventeenth and eighteenth century cemeteries smile at us with a full set of teeth: their molars no longer show evidence of catastrophic wear, and silica particles disappeared from samples of their tartar deposits.³⁴ It would be logical to suppose that pathological conditions caused by tooth wear were also reduced, and that this played its part in raising life expectancy.

³³ C. Estienne and J. Liébault, *L'agriculture et maison rustique* (1578), p. 311.

³⁴ A study of over 200 skeletons interred in one part of the cemetery of Saint-Laurent de Grenoble in the

To sum up, the study of millstone quarries and their modes of production, and the processes by which they expanded the commercial availability of their millstones, bring to light a fundamental revolution in food supply. Between the fourteenth and seventeenth centuries, though at considerable cost, French men and women shed many of their health problems by adopting the culturally fashionable white loaf as their staple food. Classic round and long loaves simultaneously became things of beauty, and healthy articles of consumption. The 'best millstones in the world' gave birth to the 'best bread on earth'. Meanwhile, what was happening elsewhere in Europe?

IV

The history of millstones in Europe goes far beyond scattered anecdotal remarks, for researchers, notably in Switzerland, Germany, England, Sweden and Norway have pursued the topic, as well as others in the United States. Unfortunately, most of the available studies are either concerned with the classical or medieval world, or with the production from a single millstone quarry. It is therefore premature to offer a definitive synthesis for the whole continent.

Nevertheless, the research that has been completed indicates that some parts of Europe went through a process akin that in France, but with some differences in timing. Except for countries such as the Netherlands and parts of Prussia, which lacked suitable rock formations, most countries seem to have used a wide variety of local sources of millstones during the high middle ages. For example, in England, as well as a number of major millstone quarries 'there were many other places where suitable rock was found and used for making millstones which were adequate at least for local use, even of not widely used'.³⁵ In Italy there was also a large number of small quarries. A survey of 1809, undertaken when the peninsula was under French domination, describes a hundred or more millstone quarries, most of them in hilly parts of the country. The survey also brings out the importance of one great quarry in the mountains above Lake Maggiore. From here, millstones were sent to Pavia, which became the centre from which millstones were sent up the river Po, or coastwise to various Mediterranean ports, allowing them to be set up in the various Italian principalities.³⁶

Similar centres existed to a greater or lesser extent in every European country.³⁷ The secondary literature, and eighteenth- and nineteenth-century printed sources, have brought to light some twenty regionally important quarries, and make possible a first attempt at a

Note 34 *continued*

thirteenth and fourteenth centuries, and in another part in the seventeenth and eighteenth centuries, showed this. E. Herrscher, 'Meulières et pathologies humaines: un rapport effectif? Analyse d'une documentation dentaire entre le XIII^e et le XVIII^e s. à Grenoble', in A. Belmont and F. Mangartz, *Mühlsteinbrüche. Erforschung, Schutz und Inwertsetzung eines Kulturerbes europäischer Industrie. Les meulières. Recherche, protection et valorisation d'un patrimoine industriel européen, antiquité-XXI^e s.* (Actes du Colloque de Grenoble 2006), pp. 99–108.

³⁵ G. D. Tucker, 'Millstone making in England', *Industrial Arch. Rev.* 9 (1987) p. 168.

³⁶ AN, F 20/295 et 296, 'Enquête sur les moulins de France', in particular the response from the *département* of Marengo. There is evidence of another major centre near Bergamo in the seventeenth century: 'the country has many stones good for milling; they are used to make millstones', P. Duval, *Le voyage et la description d'Italie* (1656), p. 198.

³⁷ For more information, see the *Atlas of European millstone quarries*: <http://meuliere.ish-lyon.cnrs.fr>

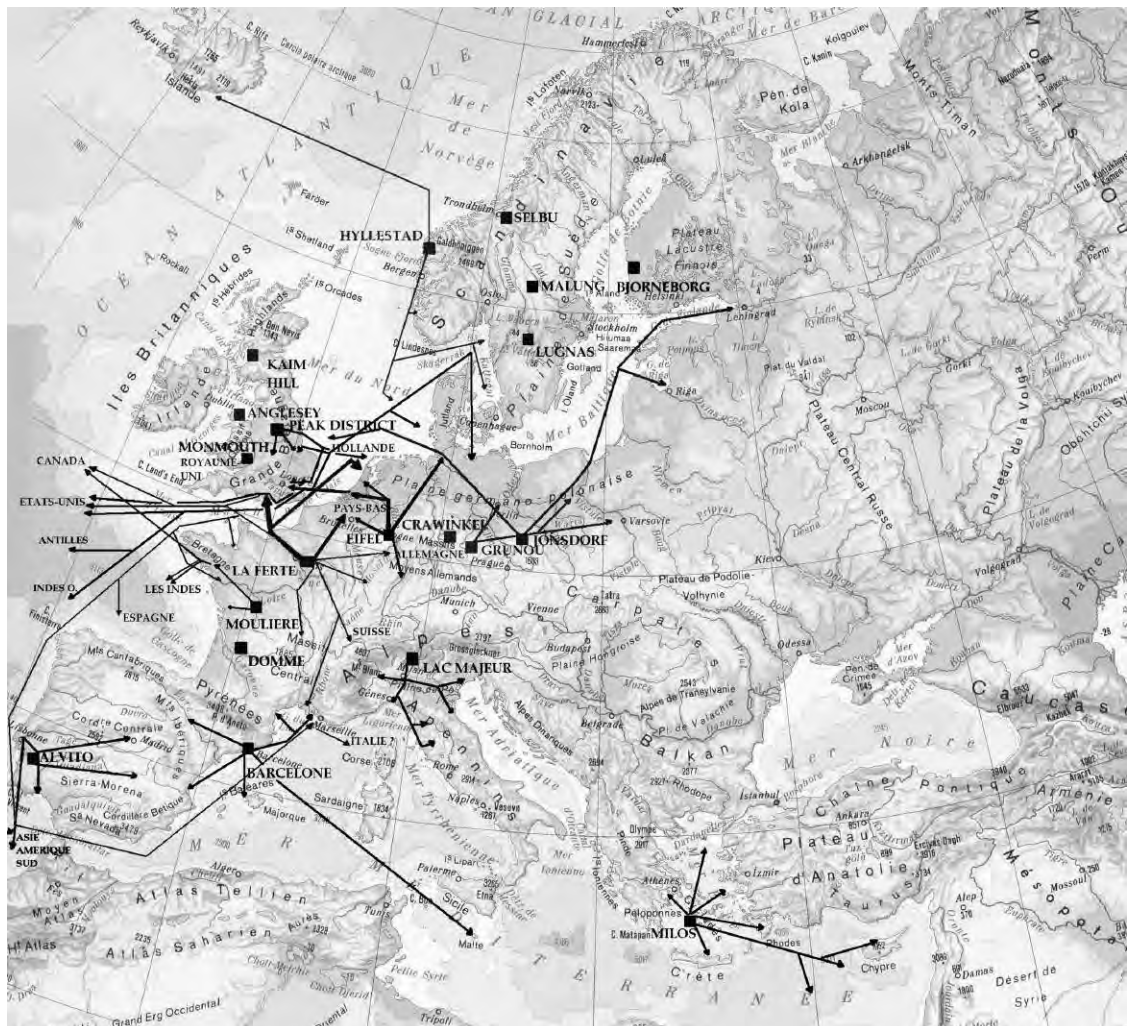


FIGURE 11.9. The principal European sources of millstones and their channels of trade.

Cartography: A. Belmont.

Europe-wide map of millstone quarrying (Figure 11.9).³⁸ The first conclusion to be drawn from it is that the prime sources of millstones were always close to navigable water, whether the sea (at Hyllestad, Milos, and Barcelona) or a navigable river (at La Ferté-sous-Jouarre and Niedermendig). However sites far from navigable water could provide stones that were carried to

³⁸ AN, F 20/295–296, ‘enquête sur les moulins de France’, 1809. Barthélemy Faujas de Saint-Fond, ‘Description des carrières souterraines et volcaniques de Niedermennich, à trois lieues d’Andernach, d’où l’on tire des laves poreuses, propres à faire d’excellentes meules de moulins’, *Annales du Muséum National d’Histoire Naturelle* 3 (1802), pp. 181–93; J.-E. Guettard, ‘Mémoire sur la pierre meulière’, *Histoire de l’Académie royale des Sciences, année 1758* (1773), pp. 203–36; A. Mongez (l’aîné), ‘Mémoire sur les meules de moulins employées par les anciens et les modernes, et sur les meules à bras, antiques, trouvées près d’Abbeville’, *Histoire et mémoires de l’institut royal de France, classe d’histoire et de littérature ancienne* 3 (1818), pp. 441–80.

distant parts. According to the French Academician, Mongez, millstones from Grunou, close to the source of the Elbe, were sent as far afield as Brandenburg and Poland, while those from Jonsdorf travelled as far as Russia.³⁹

In Mediterranean Europe, three millstone sites were internationally important. The first was the island of Milos, whose volcanic stone had been worked since classical times, and which supplied the whole eastern Mediterranean seaboard with its millstones during the eighteenth century.⁴⁰ Second, Barcelona's 'molar quartzite', which had been widely used during the middle ages, was still being sold as far afield as Malta in the eighteenth century.⁴¹ Thirdly, the three Portuguese producers at Condexa, Cezimbra, and Alvito produced 'very hard and very white millstones' that were shipped 'to Castille, and even to the West and East Indies'.⁴²

In northern Europe, the millstone quarries were never far from the Baltic – those at Givslövshammar, in Scania, were right by the sea – and several were of high reputation. Lugnås, near Lake Vanern, was a site with 300 open-cast and 60 underground quarry sites, which exported millstones all over Scandinavia until its final decline between 1915 and 1922. Further north, the quarry at Östra Utsjö in Malung commune in Dalecarlia had production rock faces almost two kilometres in length, and was thought worth a visit by Linnaeus in 1734. Its silica-rich gritstone supplied northern Sweden and Norway until forced into decline by millstones from the quarries of Selbu near Trondheim.⁴³

In western Europe, the Eifel massif around Mayen and Niedermendig took the lion's share of the market (Figure 11.10). The Eifel is the German equivalent of La Ferté, the other pre-eminent European supplier. From the middle ages onwards its basalt millstones were widely used across the Holy Roman Empire, the British Isles, Denmark, Norway and the Baltic coast. In 1559 the Cologne merchants Godart Schlebusch shipped a large number of millstones to North Sea and Baltic ports: for example, 22 to Hamburg, 28 to Lubeck, 23 to Wismar.⁴⁴ Under Napoleon I, 'this trade spread not just to Holland and England, but as far as the Antilles and the East Indies'.⁴⁵ Tens of kilometres of underground galleries, up to 70 feet in height, still survive and are visited by 200,000 tourists every year.

In Britain, research has advanced further than elsewhere and already had enough momentum for a systematic study of millstone sources to be undertaken over 40 years ago. There seem to have been four significant production centres: the Derbyshire Peak District, Monmouthshire and Anglesey, and Kaim Hill in Scotland.⁴⁶ Peak millstones gained a good

³⁹ Ibid., p. 479; G. Bost, 'The millstone quarries at Jonsdorf', *Int. Molinology* 64 (2002), pp. 30–2.

⁴⁰ E. Chalkoutsaki, 'Les pierres meulières de la Grèce, le cas de l'île de Milos', in M. Barboff *et al.* (eds), *Meules à grains*, pp. 184–7; E. Egoumenidou and D. Myriantheis, 'Trade and use of millstones in Cyprus during the recent past (18th–20th century)', *ibid.*, pp. 175–83.

⁴¹ S. Caucanas, *Moulins et irrigation en Roussillon, du IX^e au XV^e siècle* (1995), p. 148. Mongez, 'Mémoire sur les meules de moulins', p. 477.

⁴² Ibid., p. 477.

⁴³ M. Jacobson, *Upptäck Kvarnstensbrottet i Östra*

Utsjö, Malung (1998); B. Hange-Persson, *Kvarnstensbrottet i Lugnås* (2004). Also see the research led by Irene Baug, of the university of Oslo, on the medieval mills of 'Hyllestad, Kvernsteinsbrota i Hyllestad – bergveksdrift frå forhistoria', *Arkeo* 2 (2002).

⁴⁴ F. Hörter, 'Gewinnung und Handel rheinischer Mühlsteine in Schrift-belegen vom 9. bis 16. Jahrhundert', in Barboff *et al.* (eds), *Meules à grains*, p. 173.

⁴⁵ de Saint-Fond, 'Description des carrières souterraines', p. 181.

⁴⁶ See the papers by G. D. Tucker, 'Millstone making at Penalt, Monmouthshire', *Industrial Arch.* 8 (1971), pp. 229–39, 'Millstones, quarries and millstone makers',

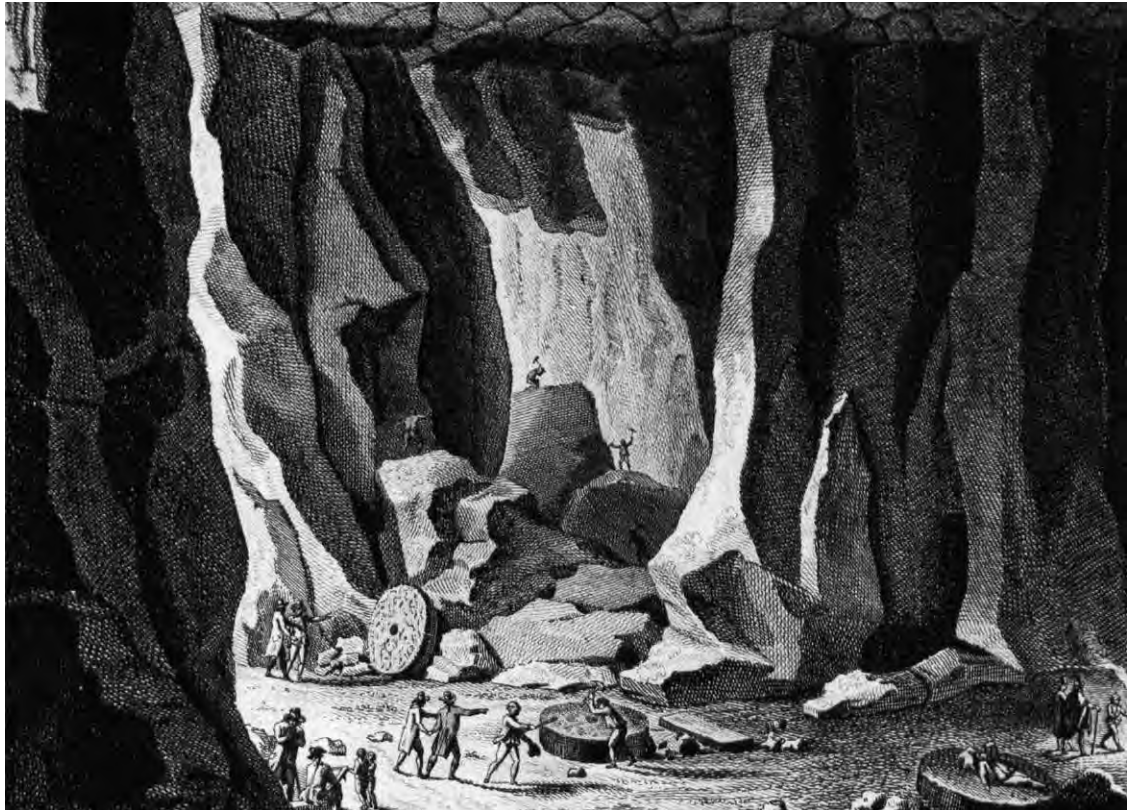


FIGURE 11.10. A millstone quarry in the Eifel region of Germany at the end of the eighteenth century.

Source: B. Faujas de Saint-Fond, 'Description des carrières souterraines et volcaniques de Niedermennich, à trois lieues d'Andernach, d'où l'on tire des laves poreuses, propres à faire d'excellentes meules de moulins', *Annales du Muséum National d'Histoire Naturelle* 3 (1802), p. 192, pl. XIV.

reputation in the fourteenth century, and by the seventeenth century were used as far afield as the south coast. The Duke of Newcastle bought up quarries there in 1705.⁴⁷ Nevertheless production began to fall and the distribution area became more circumscribed after the end of the seventeenth century. Cut from gritstone, Peak millstones fell out of favour as white bread became fashionable, just as happened to the other English quarries and the majority of their French counterparts. The link between increased wheat growing, the fashion for white bread, and the sourcing of millstones is clearly shown:

Native millstones were satisfactory for grinding oats, barley and rye, but for wheat milling it was better to import millstones and domestic quernstones: those made of dark Rhenish

Note 46 continued

Post-Medieval Arch. 11 (1977), pp. 1–21, 'Millstone making in Scotland', *Proc. Soc. Antiquaries of Scotland* 114 (1984), pp. 539–56, 'Millstone making in the Peak district of Derbyshire: the quarries and the technology',

Industrial Arch. Rev. 8 (1985), pp. 42–58, and 'Millstone making in England', pp. 167–88.

⁴⁷ J. P. Polak, 'The production and distribution of Peak millstones from the sixteenth to the eighteenth centuries', *Derbyshire Arch. J.* 107 (1987), pp. 55–72.

lava ... produced fine but discoloured flour; more expensive French stones were necessary for white flour.⁴⁸

We can identify the same trend in Britain as in France: a decline in rye bread as white wheaten bread became more widely eaten, indicated by the progressive adoption of French millstones in Kent in the fifteenth century, and in Oxfordshire and Norfolk in the seventeenth century. The adoption of French quartz millstones by English millers was so marked that a technique of setting up the stones, which was introduced into France in the late eighteenth century, was described by the French as 'English millstones'.⁴⁹

Other regions of Europe probably experienced a similar shift from locally produced to superior, internationally marketed millstones. Thus, in the Low Countries, although the first Brie millstones did not begin to challenge the predominance of Eifel millstones until 1558, by 1776–7 the Netherlanders alone imported between 1000 and 3000 metric tons of millstone blocks.⁵⁰ In Germany, French stones achieved a degree of market penetration in the late sixteenth century, when, for example, the burghers of Neustadt in the Palatinate insisted on the purchase of millstones from Brie.⁵¹ But the combination of the availability of good quality Eifel millstones, and the continuing fashion for black 'German bread', limited the penetration of Brie millstones to the western fringes of the Holy Roman Empire.⁵² Southern Europe appears to have made the transition to white bread before the arrival of French millstones, but there are not enough completed or readily accessible syntheses of regional research to make more sophisticated generalizations.⁵³

The effect of these changes on people's teeth is a subject that needs more research. Improvements in the general state of teeth between the middle ages and the eighteenth century has been noted in both Britain and the Netherlands.⁵⁴ But this medical advance has been put down to the improved sieving of flour and a more general change in the texture of everyday foods, such as the advent of puddings. This research does not seek to specify the precise part played by millstones in this amelioration. But there is evidence in the early nineteenth-century exchange between two members of the Academy, one French and one English, when the naval blockade cut off the supply of French millstones from their English compatriots:

I must nevertheless say this, in advance, that millstones made of certain kinds of basalt sometimes produce quite a thick dust of a type which when you eat the bread made from

⁴⁸ Ibid, p. 55; E. J. T. Collins, 'Food grain, grain foods and milling techniques', in Barboff *et al.* (eds), *Meules à grains*, pp. 338–43.

⁴⁹ O. Ward, 'Les meules françaises', in Agapain, *Les meuliers. Meules et pierres meulières dans le Bassin Parisien* (2002), pp. 60 ff.

⁵⁰ AN, F 12/243, commerce de la France avec l'étranger, 1776–7.

⁵¹ Hörter, 'Gewinnung und Handel', p. 172.

⁵² In 1809, taking the four German *départements* then incorporated in France, only the Saar declared that it used millstones from the Champagne quarries, in the districts of Saarbrücken and Trier, AN, F 20/295–6.

⁵³ Thus, in Portugal, where since the fifteenth century 'we distinguish between mills called *trigueros* (for wheat) and *alveiros* (producing white flour), and mills called *secundeiros* (which milled second-order cereals). The former were equipped with quartzite, while the latter only had granite millstones', R. Durand, 'Les moulins hydrauliques dans le Portugal médiéval', in P. Galetti and P. Racine (eds), *I mulini nell'Europa medievale. Atti del convegno di San Quirino d'Orcia, 21–23 Sept. 2000* (2003), p. 95.

⁵⁴ Maat and Van der Velde, 'Caries-attrition competition', pp. 281–92.

their flour, you feel it crunching between your teeth. That is what I learnt from Mr Blagden, secretary of the Royal Society of London. He says that when the last war interrupted all trade between France and England, that kingdom could not longer get its millstones from the best millstone quarries as it had for so many years previously, and had to use basalt millstones from Scotland and Ireland. This substitution necessarily had the unfortunate result of producing poor quality bread.⁵⁵

V

Millstones, it could be conceded, are not the only factor determining the quality of bread, even if breadmaking is the only reason for setting up millstones. Ideally, we should compare the evidence from the physical evidence of millstones with a corpus of textual sources telling us about the colour and consistency of village bread in the same period. We cannot do that in detail, even if the little evidence we have suggests changes that point in the same direction as the evidence from millstones.⁵⁶ At this point all we can do is to urge caution in making clichéd assertions about the omnipresence of mediocre black bread until very recent times. Is it so incongruous to suppose that modern Europeans, who were capable of considerable advances in civil engineering, in agricultural techniques, in art, were also able to find ways of improving the chief staple element in their diet, bread? There are good studies of urban bread, beginning with Steven Kaplan's.⁵⁷ We need a companion volume on rural diets. A combination of archaeological and textual sources will have to be used to advance this research. Modern and contemporary historians will have to tread the path their medievalist colleagues took long ago in scrambling about in muddy excavation trenches. That would enable us to retrieve information about the quantities, varieties, and types of grain that were milled, and about the kinds of bread found on our forefathers' tables.

⁵⁵ Mongez, 'Mémoire sur les meules de moulins', pp. 468–9.

⁵⁶ Amongst other examples, in Roussillon, the accounts of communal bakers show that 'the obsession with white bread was not a Parisian preserve' but involved a wide section of the population during the century of the Enlightenment: see M. Brunet, *Les pouvoirs au village. Aspects de la vie quotidienne dans*

le Roussillon du XVIII^e siècle (1998), p. 106. The same fashion gathered momentum in Aquitaine but ... in the thirteenth to sixteenth centuries! See F. Mouthon, 'Le pain en Bordelais médiéval, XIII^e–XVI^e siècles', *Archéologie du Midi médiéval* 15–16 (1997–8), p. 211.

⁵⁷ Kaplan, *Les ventres de Paris*; id., *Le meilleur pain du monde. Les boulangers de Paris au XVIII^e siècle* (1996).

The English model farm and agricultural improvement, 1700–1900^{*}

by Susanna Wade Martins

Model farms are a uniquely British building type. They gave physical form to the landlord–tenant system of capitalist farming typical of much of British agrarian society by the middle of the eighteenth century. Model farms began to appear earlier in the century, coinciding with the concentration of land in the hands of estate owners, who, particularly after about 1770, were determined to capitalize on rising agricultural prices. Coupled with this development, the division of responsibility for the provision of capital was formalized. It became the responsibility of the landlord to provide the fixed capital of farming in the form of farm buildings and layout, and of the tenant to provide the working capital of the farm as well as maintaining the land and the buildings.

Firstly we need to define what we mean by ‘a model farm’. For present purposes a model farm is defined as one that was consciously planned as a complete unit, often by a well-known architect and frequently for a wealthy landlord who wanted to impress his friends and neighbours (who, if he were politically inclined, might also be his electorate), to set an example to his tenantry, and satisfy his own architectural taste. A model farm might be where new techniques were tried and displayed. The buildings themselves might form the backdrop to agricultural extravaganzas such as the sheep shearings at Holkham in Norfolk and Woburn in Bedfordshire.

Less substantial than the model farms are the planned farms, again built and designed as a unit, but for tenants rather than as a home farm, and often forming part of an enclosure or land reclamation scheme. They differ from the model farm in that they are typically of a more functional design and rarely the work of a named architect. They are particularly to be found across vast areas of eastern Britain from Caithness to Norfolk where they dominate their planned landscapes, frequently placed in the centre of large square fields.

^{*} Much of the survey work that provides the raw material for this chapter was undertaken for English Heritage between 1996 and 2000 and was published with their financial support in 2002 (S. Wade Martins, *The English model farm, building the agricultural ideal*). I am grateful to Jeremy Lake of English Heritage for his support and encouragement in this project.

A landlord with a desire to improve his estates, who was often classically educated and well travelled, was therefore in control of much of the rebuilding and reorganization of the countryside. Many were influenced by the ideas of the Enlightenment and the confidence that nature was something to be conquered and forced to give up her riches. Some regarded farm buildings as part of a parkland landscape and their aesthetic values were of primary importance, while others placed more emphasis on their functional qualities. Most were influenced by the philosophy of combining beauty with systems and utility which was so often apparent in the eighteenth-century literature of 'improvement'. The interest of these buildings lies in the way in which they manifest this philosophy, as well as the degree to which they demonstrate and influenced farming change.

I

The origins of the model farm can be seen as arising from two traditions. Firstly they can be traced to the vernacular traditions of the manorial farm where the buildings were often arranged around a courtyard as at Cranley in Suffolk (Figure 12.1), and secondly to the villa-farm architecture that Palladio developed for the private estates around Venice, which were bought by wealthy merchants in the sixteenth century and drained and developed by them (Figure 12.2).

Palladio's recognition of man as a farmer with dominion over the land through cultivation is one that would have been recognized and understood by the eighteenth-century gentleman, and his courtyard designs easily adapted to British conditions. Translations of *The four books of the architecture of Andrea Palladio* were available from 1720 and were to be found in many of the libraries of great houses in Britain. The strict rules of proportion that these books laid down would have appealed to and been understood by their owners, as would statements such as:

An edifice may be esteemed commodious when every part or member stands in its due place and fit situation, neither above or below its dignity and use ... cellars and granaries are conveniently disposed in their proper places ... the stables, the granaries and other parts for the use of the villa are on each side of the court. The middle part of this fabric is the master's habitation ...¹

If we look at the earliest published designs for farms, those in Daniel Garrett's book of 1747,² we can see their similarity to Palladio's designs. Garrett's designs are neat, symmetrical and simply arranged around a courtyard, designed for tenants rather than as home farms (Figure 12.3). The only surprise is the lack of shelter for animals. Unfortunately, no farm buildings survive that can be definitely ascribed to him.

Model farms were therefore matters of taste and aesthetics as well as practical contributions to agricultural practice. Their relevance to agricultural improvement was questioned, right from their first appearance in the mid-eighteenth century. Landlords were often enthusiastic about their grand schemes, but their agents could be much more cautious. The land surveyor,

¹ A. Palladio, *The four books of the architecture* (1727), book 2, ch. 14.

² D. Garrett, *Designs for the farm houses etc. for the*

counties of Yorkshire, Northumberland, Cumberland, Westmorland and the bishoprick of Durham (1747).

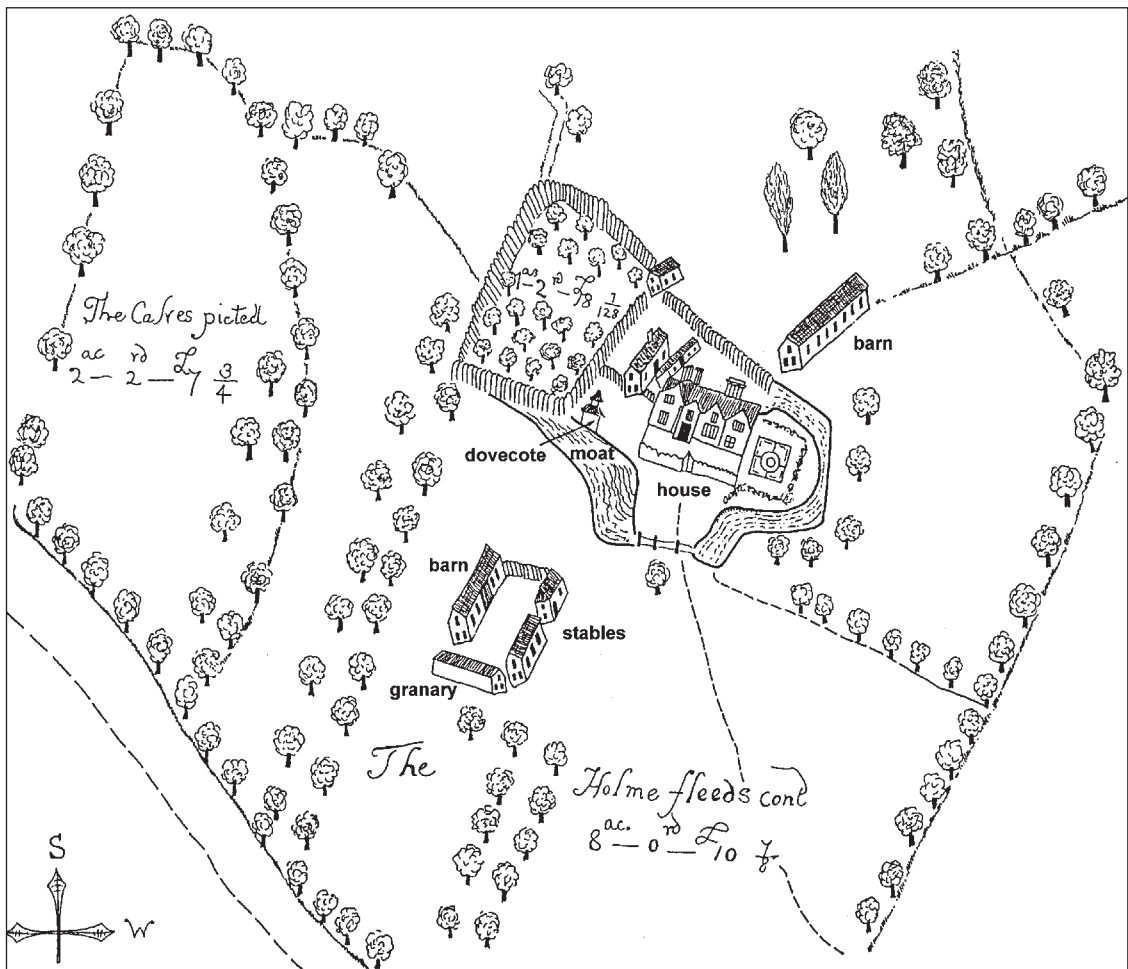


FIGURE 12.1. Plan of Cranley Hall, near Eye, drawn in 1626, showing a courtyard of farm buildings at a distance from a moated manor house.

Source: Suffolk Record Office IHD 78, redrawn by Phillip Judge.

Nathaniel Kent recommended economy to his clients. The second Duke of Northumberland drafted a list of criteria for the building of new farms on his Alnwick estate. In 1806, in the terms of the appointment of his estate architect, David Stephenson, he stated that all new plans should be approved by him personally:

Whenever it becomes necessary to build a wholly new farmstead, the architect, the bailliff of the district and [significantly] the tenant of the farm shall have consultation whether the whole site is in the properist place for its renewal or whether the general and material interests of my estate may not be benefited by its building on a more proper site.³

³ Alnwick Castle Ms B/24/1.

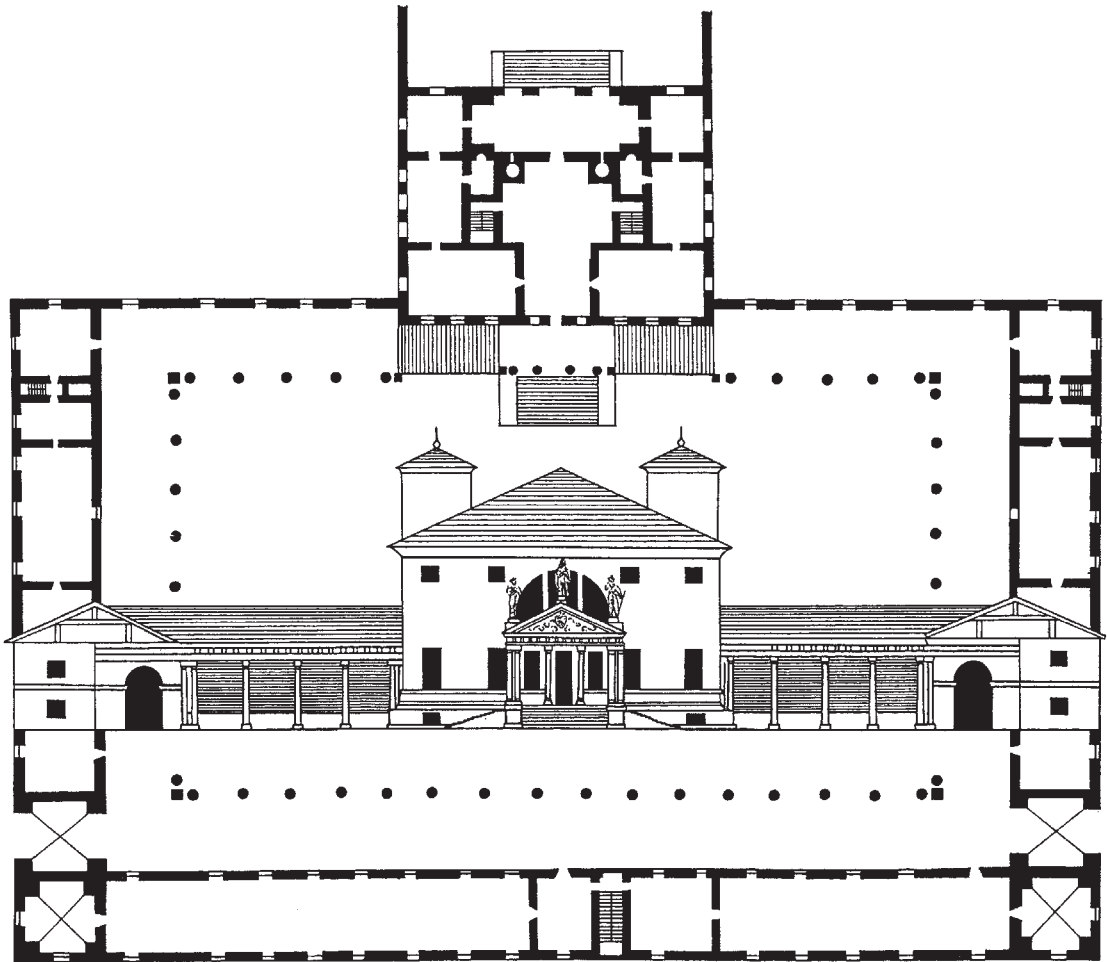


FIGURE 12.2. Palladio's illustration of Villa Dicani from his *Quattro Libri*, showing a villa farm in a style taken up by British architects.

Source: From A. Palladio, *The four books of the architecture* (1727), redrawn by Phillip Judge.

Until at least the mid-nineteenth century writers on agricultural matters always emphasized the position of landowners as leaders in agricultural change: after all, they relied on them for patronage. Landowners were seen as amateur scientists, observing and experimenting on their own farms. The agricultural commentator, Arthur Young, recognized that 'farming gentlemen could be divided into two types: those who needed to make a profit by farming and those whose fortunes are so considerable as to be above attention to economics'. For the latter, the home farm provided the opportunity to experimenting, and experiment was a way to:

render pleasure subservient to the public good. A gentleman of large fortune practicing farming without improving upon the customs of his neighbours, instead of deserving praise,

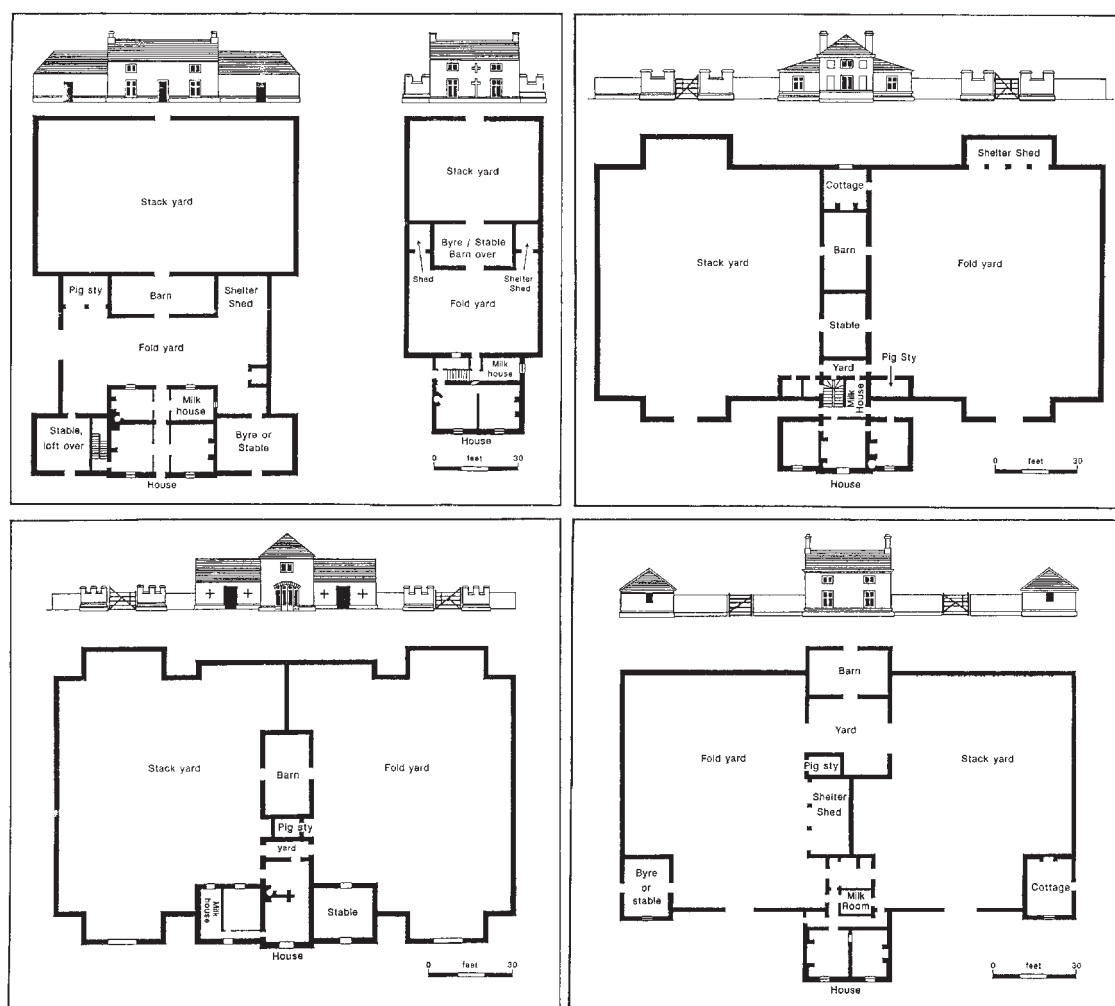


FIGURE 12.3. Illustrations from Daniel Garrett's book of farm designs, published in 1747 as examples for north-country improvers to follow. The house is always on one side of a yard and the symmetrical layout is reminiscent of Palladio's plans.

Source: From D. Garrett, *Designs for the farm houses etc. for the counties of Yorkshire, Northumberland, Cumberland, Westmorland and the bishoprick of Durham* (1747), redrawn by Phillip Judge.

merits nothing but disgrace ... profit ought not to be the aim of these pursuits but the good of mankind.⁴

Some landlords and their agents saw themselves as duty-bound to remodel the economy and society as well as the landscapes of their properties. The phrase 'capable of improvement' occurs frequently in estate surveys from the mid-eighteenth century, reflecting the almost moral duty to exploit the full potential of their land, which was felt by some. The duty to improve can be seen in the buildings for tenants and on the home farm.

⁴ A. Young, *The farmer's guide to hiring and stocking farms* (1770), pp. 470–3.

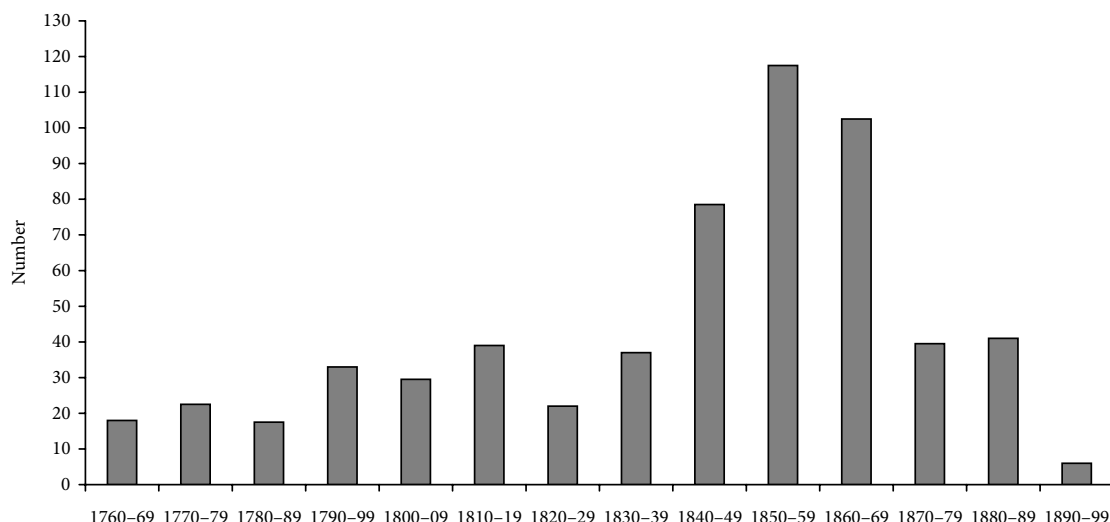


FIGURE 12.4. Number of dated farm buildings identified during the English Heritage survey, by decade.

Source: Compiled from evidence collected for the English Heritage Survey.

In the following section we look briefly at the timing of the building of model farms and their distribution across England (which is not to deny that there are many more across Scotland). We then turn to look at no more than a handful of model farms and consider the motives behind their building, how the design and philosophy changed in the period up to 1900, as well as their impact on farm building and agriculture as a whole.

II

Model farm building falls firmly into two phases. First there was the Hanoverian phase, particularly during the years of the Napoleonic wars (1796–1815), with very high grain prices. A survey undertaken by English Heritage identified 166 dated buildings from this period (Figure 12.4). Although these figures cannot be regarded as definitive, they are at least representative of the total. Forty four of these were built between 1800 and 1810 – a period of escalating grain prices when rents rose by anything from 50 to 175 per cent. War made it a patriotic duty to improve: interest in enclosure and improvement was at its greatest in these years.

A second, much larger peak, occurred between 1840 and 1870, coinciding with the age of high farming. Interest in farm building reached a climax in 1850 with the Royal Agricultural Society of England's competition of that year. We shall see that the type of building after this date was very different to earlier ones or, as Philip Pusey wrote in 1850, 'farm buildings, like certain countries are really in a state of revolution'.⁵ Model farms led this movement to a new style and layout to suit the changed methods of farming.

Model farm buildings in these two phases were distributed differently across England. Those

⁵ P. Pusey, *What ought landlords and farmers to do?* (1851), p. 35.

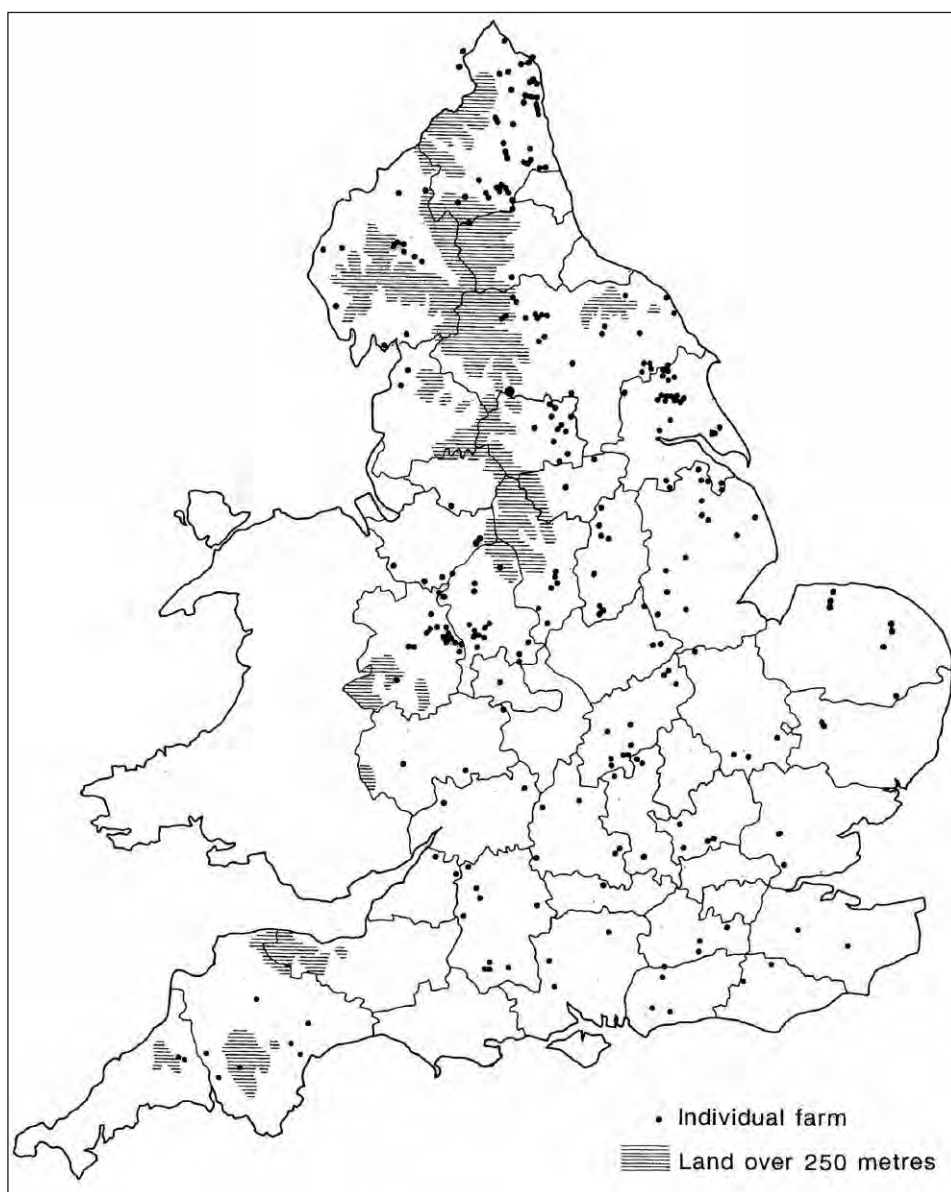


FIGURE 12.5. Distribution of farms located during the English Heritage Survey, from before 1840.

Source: Compiled from evidence collected for the English Heritage Survey.

built in the early phase are associated with the enclosure of the arable east, particularly the light chalk soils of the Lincolnshire and East Yorkshire Wolds, and also in Northumberland, with a second concentration on the Shropshire and Staffordshire estates of the Leveson Gowers (Figure 12.5).

After 1840, the pattern is more dispersed but it is in the more pastoral areas that building is concentrated (Figure 12.6). Capital from outside agriculture supported the Duke of Bedford's

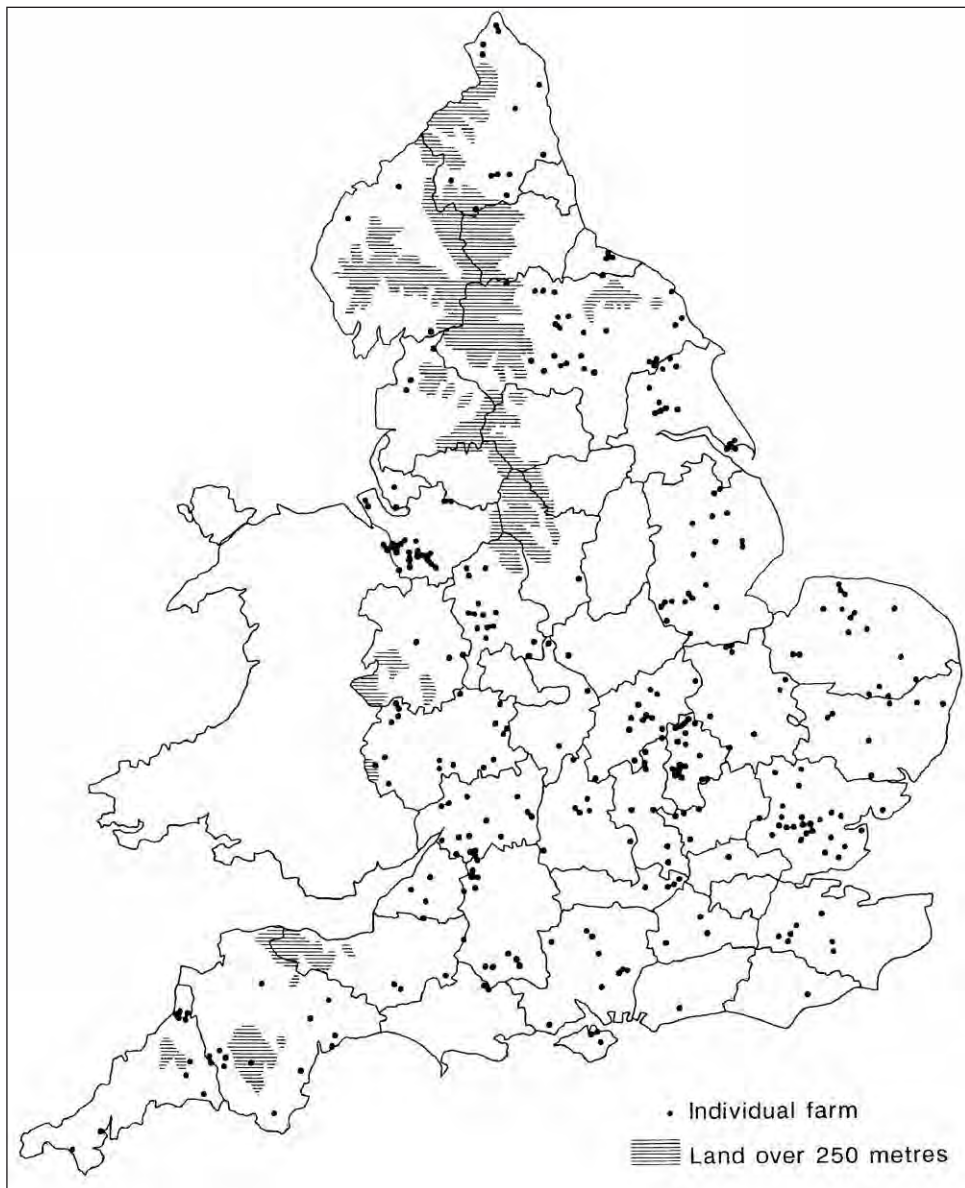


FIGURE 12.6. Distribution of farms located during the English Heritage Survey, from 1840–1914.

Source: Compiled from evidence collected for the English Heritage Survey.

activities in Bedfordshire and Devon and the Duke of Westminster was able to afford to carry on building in Cheshire, a county largely unaffected by the agricultural depression of the 1880s. Essex too was able to benefit from the London milk markets and its landowners could afford to employ the architect Frederick Chancellor to design some innovative farmsteads there.

III

We will now turn to a selection of model farms and consider how they illustrate both changing farming patterns and the philosophy behind them, starting at the top of the social hierarchy with the work of George III and his advisor, Nathaniel Kent, in Windsor Great Park in the 1790s. Kent was already establishing a reputation as a land agent and improver and no doubt this commission added greatly to his reputation as well as that of his client. When writing to the king he stressed the need for 'men of distinction' to be setting an example. 'A farm of the kind here described, situated so near the capital would excite attention, challenge imitation and be productive of great good to society'.⁶

In his book, *Hints to gentlemen of landed property* (1775), Kent had laid down several 'rules respecting new erections worth ... observing':

Not to build any thing but what will be really useful. To build upon a small compact scale, as much as possible upon squares ... To build at all times substantially, and with good materials.⁷

Kent proposed to reduce of the number of deer in Windsor Great Park and replace them with cattle and sheep. Wet land was to be drained and the heaths broken up and marled. Two new farms were to be built. The light arable was to be managed on the Norfolk system and called Norfolk Farm. The other, on the grassland, was to be managed on a West-Country system and called Gloucester, later changed to Flemish, Farm. But in spite of their prestigious owner, they were not to be showy buildings and indeed used recycled materials. Kent wrote in his journal in July 1791 that he 'examined several of the buildings standing near the [Cumberland] Lodge to inform myself which of them would answer removal to the intended Norfolk farm'.⁸

A week later he staked out all the intended buildings for inspection by George III. Stables, ox-stalls, a cart house and pigsties were moved to their new site for the very reasonable price of £300. In May the following year he marked out the foundations of the barn at Norfolk Farm. This had been completed and thatched by August. Although both farms were later rebuilt by Prince Albert, Kent's plans survive and show courtyard layouts of barns, stables and yards with stack yards behind the barns. Not all the buildings were thatched and, in spite of his utilitarian approach to farm buildings, Kent did make some concessions to the fashions of the time, painting the local red Berkshire slates grey so that they looked like Welsh slate.

Several other prominent landowners stand out from this early period as self-promoted agricultural improvers. The fifth Duke of Bedford took over his extensive estates based at Woburn in Bedfordshire in 1787 and immediately embarked on a programme of estate improvements, much of it conducted under the guidance of Robert Salmon. Salmon had come to the estate as clerk of the works in 1790 and was promoted to 'architect and mechanist' in 1794, and agent in 1806, after the sixth duke inherited. Salmon was an early example of

⁶ Royal Archives, 'Plan for improving Windsor Park (1775), p. 146. by Nathaniel Kent'.

⁸ Royal Archives, Nathaniel Kent's Journal, p. 1.

⁷ N. Kent, *Hints to gentleman of landed property*

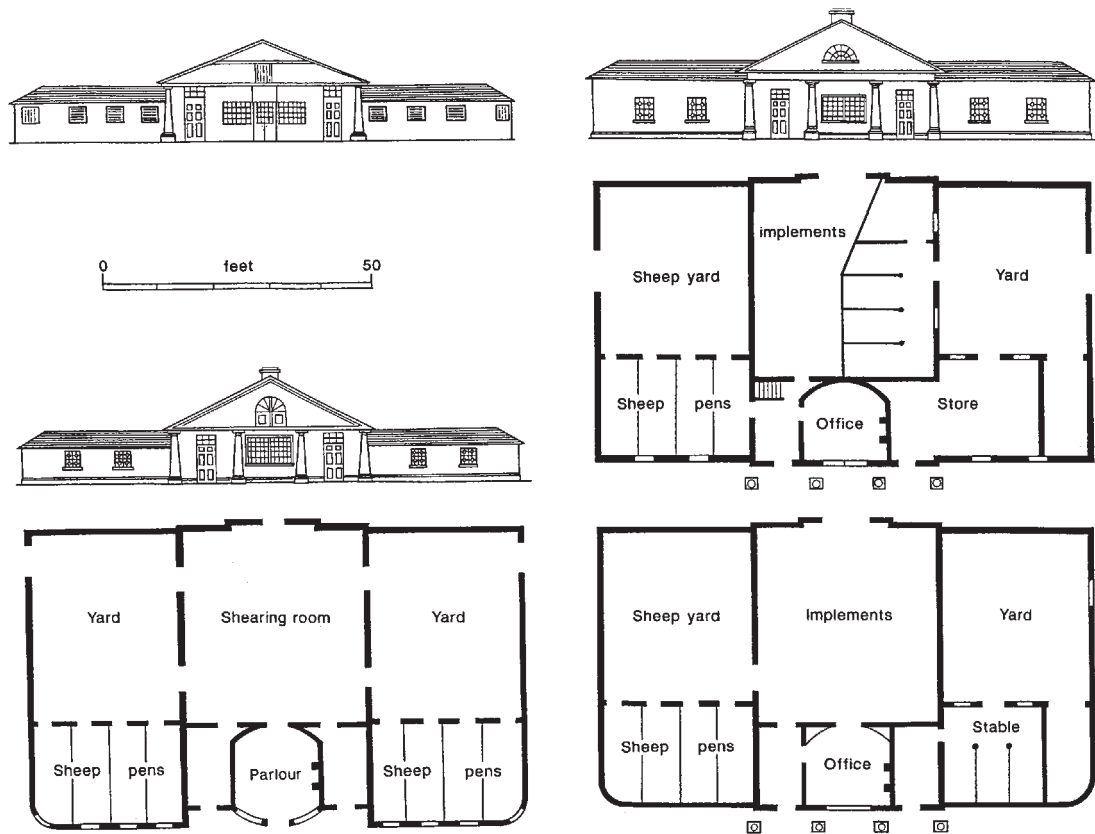


FIGURE 12.7. Designs for the sheep-shearing house at Park Farm, Woburn, by Robert Salmon.

Source: Bedford Record Office R.Box 818, Bundle 1814, redrawn by Phillip Judge.

a new profession, the estate architect. His major surviving work is Park Farm, which he equipped with up-to-date machinery, some of his own invention. The farm was opened up for inspection once a year at the annual sheep shearings that began in 1787, the year the building was completed. The original buildings consisted of three ranges with yards behind. Nearby was the elegant little sheep house with classical façade, where sheep were penned in a yard to the rear before being driven into the shearing room. In the pillared and pedimented central block was a 'parlour' from where dignitaries could watch the shearings and inspect the fleeces. The lower matching wings contained sheep pens (Figure 12.7).

The fifth Duke died in 1805 and was followed by his brother, also an agriculturalist of some renown. However, by 1813, he was beginning to lose interest and the sheep shearings ended that year. In 1821 he resigned from the Smithfield club declaring that 'there was nothing further to be done in animal husbandry' and lost interest in his estates.⁹ Except at Park Farm, little survives of this early period of improvement.

⁹ D. Spring, *The English landed estate in the nineteenth century* (1963), p. 24.

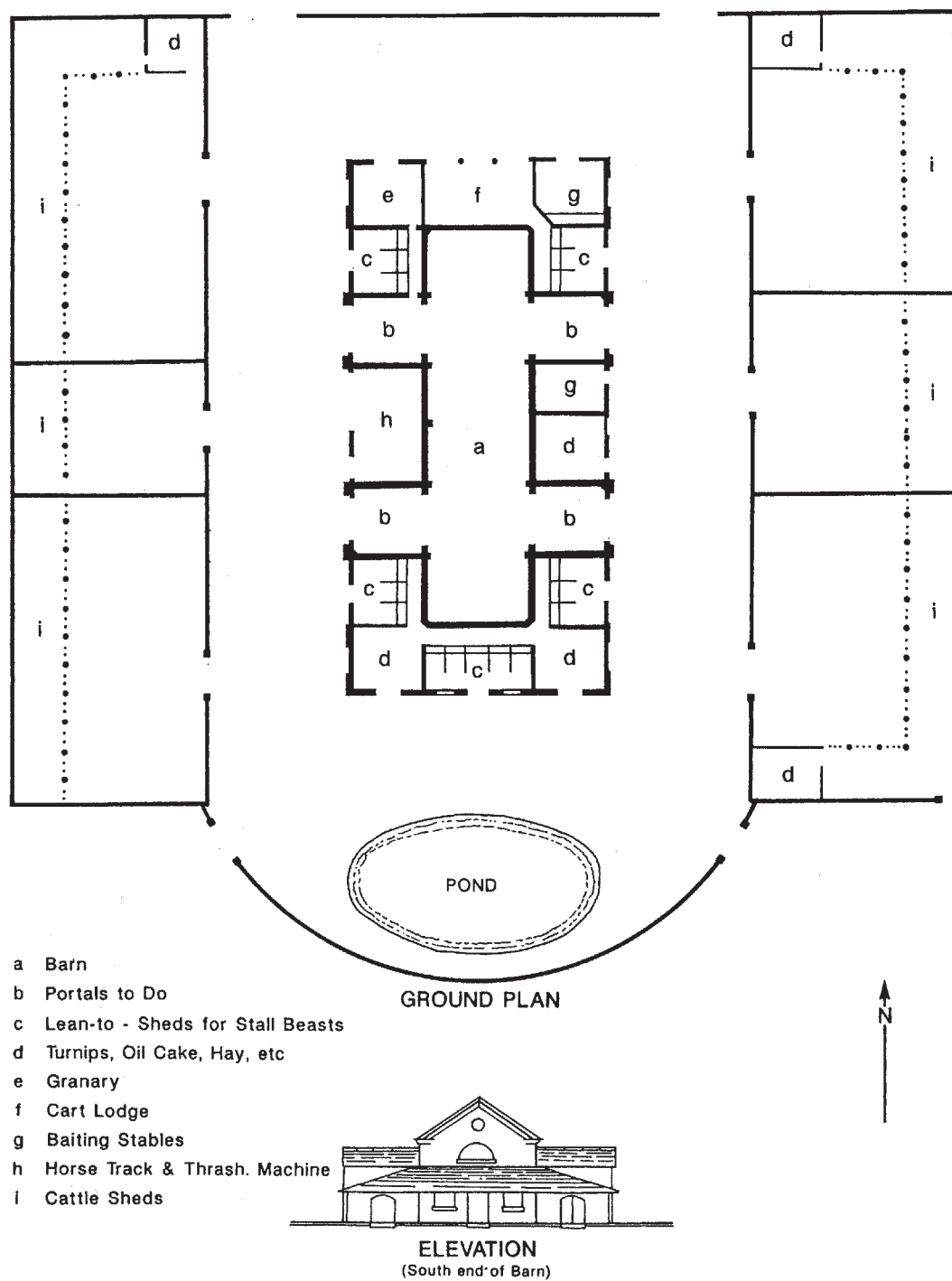


FIGURE 12.8. The Great Barn at Holkham, designed by Samuel Wyatt as a backdrop for the sheep shearings and built c.1790.

Source: From R. N. Bacon, *The agriculture of Norfolk* (Sec edn., 1844), redrawn by Phillip Judge.

Thomas William Coke and the fifth Duke of Bedford were both colleagues and rivals in the field of agricultural improvement. Coke held his sheep shearings on his Norfolk estate at Holkham, with its great barn designed by the fashionable country house architect, Samuel Wyatt, as backdrop (Figure 12.8). The plan differed from that usually associated with a planned farm in that the barn was in the middle of the buildings with the yards around, all with easy access to the spent straw as it was produced by the thrashing in the barn.¹⁰ Wyatt designed similar buildings for Lord Petre at Hatch Farm, Thorndon¹¹ and for Sir Thomas Delves at Demesne Farm, Doddington.¹² Wyatt's other work at Holkham included Leicester Square Farm at South Creake. Both these large sets of premises were criticized by Nathaniel Kent as being too extravagant: 'such buildings make a great waste of timber, and are unnecessary and, moreover very bad examples, as one farmer will always covet a similar thing to what he sees his equal in possession of'.¹³ Nearly all of Coke's 70 farms were remodelled in the late-eighteenth and early-nineteenth century: 23 were completely rebuilt. Building work was going on at as many as five farms at a time during the early nineteenth century, but it was mostly on a modest scale.¹⁴ Francis Blaikie, newly appointed as agent at Holkham in 1816 was at pains to restrain his employer's more extravagant schemes:

It would be greatly to the advantage of the tenant as well as to the landlord and much to the credit of the former if they would condescend to be guided by the sound advise that I give them in regard to the buildings on their farms.¹⁵

Moving into the industrial west Midlands, the work carried out by the second Marquis of Stafford and master-minded from 1812 by his agent, James Loch, is amongst the most famous in Britain. The lands around Stafford's seat at Trentham and in Shropshire and Staffordshire was enclosed, marshes were drained and sometimes as many as five farms amalgamated into one. Thirty seven sets of new premises were built and eight more considerably enlarged.

Although an estate architect, John Smith, was employed at Trentham from 1805, Loch was intimately concerned with the detail, often sending long letters complaining of unnecessary expense or the use of faulty materials. In order to justify the social upheavals involved, particularly on his estates in Scotland, and to explain his philosophy of improvement, Loch published, in 1820, *An account of the improvements on the estates of the Marquis of Stafford*, which contains plans and descriptions of many of the farms. What shines through his writings, is his confidence in what he was doing. It was the duty of the landowner to 'improve' for the national good at almost any human cost. The farm plans in Loch's book, one of which is shown in Figure 12.9, allows an analysis of farm layout on model farms built to serve holdings of between 100 and 300 acres. They were expensive, at about £1500 each, but were mostly a simple U-plan, open to the south with cow byres, stables and barns on the three sides. Only one was built with a steam-engine house, whilst another was water-powered and a third had a horse walk. They are simple, practical, brick and tile buildings – what

¹⁰ S. Wade Martins, *A great estate at work* (1980), pp. 135, 154.

¹¹ Wade Martins, *English model farm*, p. 62.

¹² P. S. Barnwell and C. Giles, *English farmsteads, 1750–1914* (1997), p. 129.

¹³ N. Kent, *General view of the agriculture of the county of Norfolk* (1796), p. 111.

¹⁴ Wade Martins, *Great estate*, p. 143.

¹⁵ *Ibid.*, p. 70.

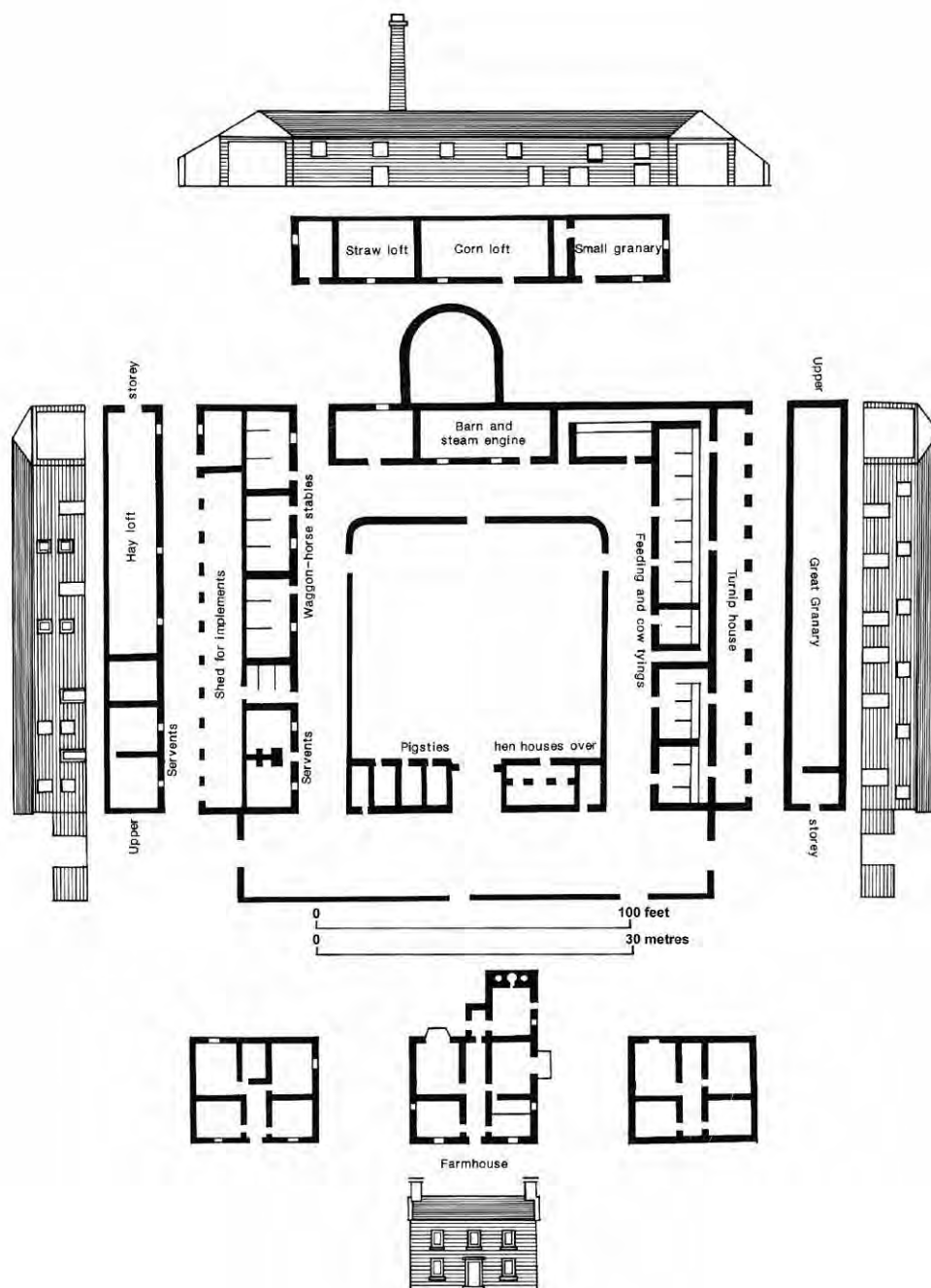


FIGURE 12.9. Plan of Day House Farm, Shropshire, built 1812–13 on the estates of the Marquis of Stafford under the management of James Loch. Built on a courtyard plan with a barn and steam-engine house on one side, cow byres down another and stables opposite, there is a central open yard which fatstock shared with a few pigs and poultry.

Source: From J. Loch, *An Account of the Improvements on the estates of the Marquis of Stafford* (1820), redrawn by Phillip Judge.

Loch called, 'common country style, uniting as many advantages with as few faults as many buildings of the sort, and will supply useful hints to others'.¹⁶

The link between agriculture and industry is crucial to the story of model farms. In this instance it was the money from the Leveson-Gower's Staffordshire coal mines as well as the profits of the Bridgewater Canal that financed his work. Much has been made of the fact that without an increased home food supply the Industrial Revolution would not have been possible, but the importance of industrialization to farming has not received the same emphasis. The threshing machine and wind, water and steam power were all products of industrialization as were iron ploughs and new building materials and techniques. While these links are clearly in place during the first phase of model farm building, they become increasingly obvious from the mid-nineteenth century. They are well articulated by John Bailey Denton in his book of exemplary farm plans, *Farm homesteads of England* (1863), where he wrote:

To farm successfully with defective and ill-arranged buildings is no more practical than to manufacture profitably in scattered inconvenient workshops in place of one harmoniously contrived, completely fitted mill.

No set of buildings illustrates this more clearly than those built in and around Belper in Derbyshire by the Strutt family of industrialists in the 1830s. They also serve as a link between the early phase of building and that of mid-nineteenth century high farming. The Strutt's involvement in Belper began in 1787 when Jedediah Strutt bought a spinning mill in the town. His business expanded and, in 1796, a second mill was built, which used the innovative building methods also to be found in his farm buildings. It was iron-framed with floors tiled for fire protection. Hollow earthenware pipes within the walls and with vents to different floors provided ventilation. Strutt began to acquire land in the 1790s, but the farms, one of which is shown in Figure 12.10, probably date from the 1830s. They were conceived as providers of dairy produce for the factory workforce and all had ample haybarns and cattle sheds. A carefully planned layout included inclined walkways and chutes from feed stores into mixing chambers, reminiscent of the handling of goods being processed through a factory, but originally suggested by Arthur Young in 1770. Many of the buildings took advantage of their valley-side position to allow for the efficient movement of feed down through the buildings.

This meant that the buildings lack a symmetrical layout, but it does not detract from the farms' planned character. Many of the buildings were iron-framed and very little wood was used in their construction. Cattle sheds were ventilated by complicated systems of pipes through the walls and up onto the roofs.¹⁷

There was very little building during the 1830s and 1840s, but the 1850s saw many changes taking place in which the model estate farms led the way. Much of this was connected with an increased interest in science and its application to farming. There was a shift from the belief that a farmer should be, in the Holkham agent's words 'a practical farmer – and no theorist'

¹⁶ J. Loch, *An account of the improvements on the estates of the Marquis of Stafford* (1820), pp. 180–1.

¹⁷ Wade Martins, *English model farm*, pp. 94–9.

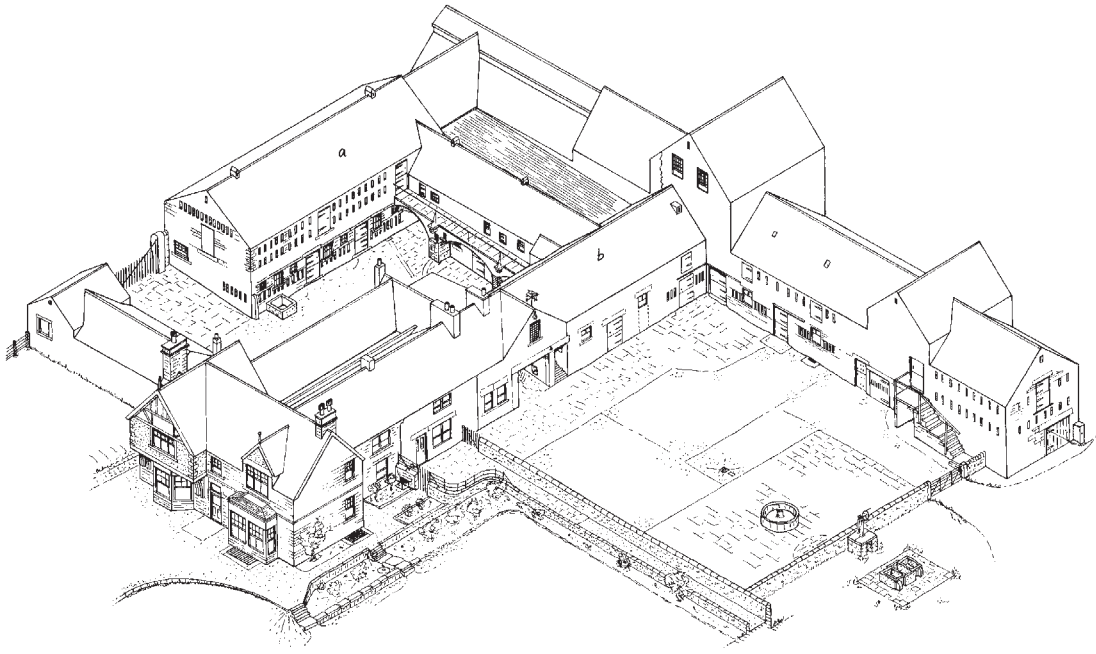


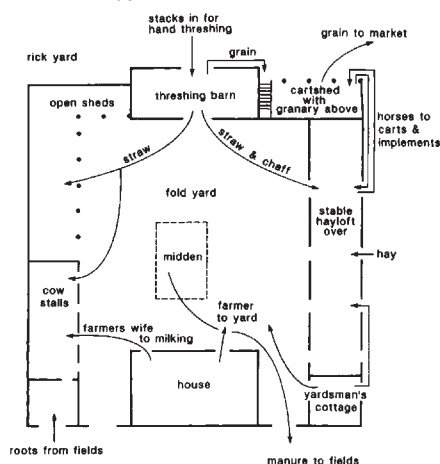
FIGURE 12.10. Farm buildings at Dalley Farm, Belper. An inclined walkway links the first-floor haybarn to the left of the illustration with the cowsheds. The windows to the farm buildings are iron-framed and ventilators on the ridges of many of roofs are connected to ducts from the ground floor byres. Liquid manure from underground tanks could be pumped out using the pump outside the front wall.

Drawing: Graham Douglas.

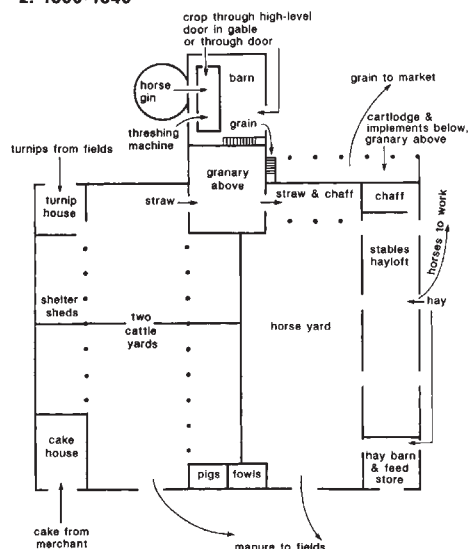
to an understanding that an agricultural and scientific education was needed for a progressive farmer. This shift in attention is demonstrated by the founding of the Royal Agricultural Society in 1839 with the motto, 'Practice with science', followed by the establishment of the Agricultural College at Cirencester in 1845. The work of the agricultural scientists such as John Bennett Lawes at Rothamstead, which built on Humphrey Davy's earlier work, *Elements of agricultural chemistry* (1813), showed the importance of understanding the chemistry of soils and fertilizers. This scientific and industrial approach to farming is reflected in farming methods and the design of farm buildings (Figure 12.11).

As animal manure was the key fertilizer, its conservation was all-important. Cattle were valued first and foremost for their manure and only secondly as a commodity for sale. So long as the standard of living of the majority of the urban population did not allow for meat eating, and transport of fat-stock was difficult, this situation was likely to persist. Gradually, after mid-century, the standard of living began to rise and the railways made transport much easier. Prices rose and cattle came to be valued for their carcasses as well as for their manure. As demand for meat rose, interest in animal husbandry increased. As we have seen, the Hanoverian planned and model farms were nearly all based on a single courtyard (U-plan) or double courtyard (E-plan) enclosing cattle yards, ideally south facing, where store cattle would be kept during the winter months on an ever-thickening layer of straw and manure.

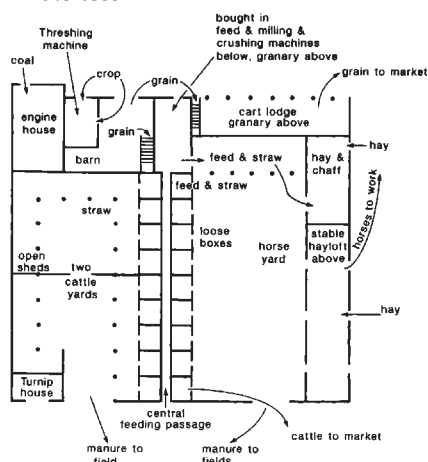
1. 1750-1800



2. 1800-1840



3. 1840-1860



4. 1860-1900

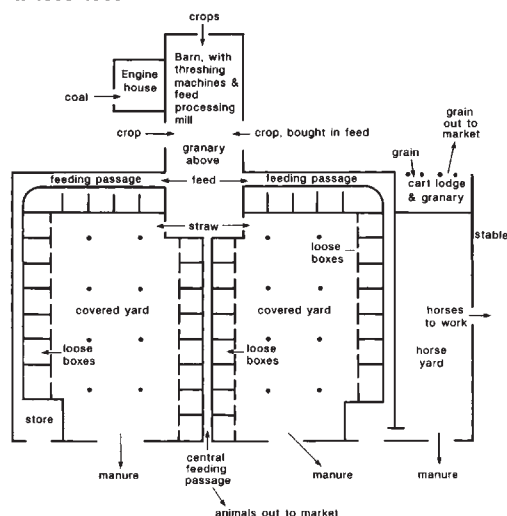


FIGURE 12.11. Changing layout of farm buildings, 1750–1900. In the earliest phase the house was normally part of the farm yard with the barn, designed for hand-threshing opposite across the yard flanked by open shelter sheds for cattle on one side and stables on the other. Cartsheds, often with a granary above, faced outwards on to a roadway. By the early 1800s, many farms now used threshing machines, so the barn was turned round to allow space for a horse or water wheel, windmill or steam engine outside the yard. As the farmer's social standing rose, the farm house was more likely to be on a separate site, with possibly a bailiff's house incorporated in a corner of the yard. More specialized management of stock could involve the dividing up of the yard. The mid-century years of high farming saw the appearance of the farmstead becoming more like that of a factory, with the steam engine and its chimney in one corner. Although some cattle were kept in open yards, others were fattened up in loose boxes. By 1860 covered yards were built on the most progressive farms and the barn had become a processing area for animal feed as well as containing the threshing machine for grain.

Drawing: Phillip Judge.

This would be emptied in the spring for spreading on the arable (Figure 12.11, 1–2). Initially, yards were divided to allow for individual feeding régimes for different groups of fatstock. By the 1850s, cattle were being housed in loose boxes, often between a central feeding passage, for the final finishing for market (Figures 12.11, 3–4). There was also increased interest in the possibility of covered yards. Scientists were establishing that manure kept in open yards where it was constantly being rained upon lost much of its value. This, coupled with the fact that cattle would fatten faster if they were kept warm in covered yards, meant that from 1850 some landowners were going to the expense of building them. Although they were widely illustrated and recommended in the agricultural journals of the time, only the wealthiest estates could afford them and they were usually confined to home farms.

In Windsor Great Park, Prince Albert was busy replacing Nathaniel Kent's buildings (see Figure 12.12 for the rebuilt Flemish Farm). His choice of designer illustrates the change in emphasis that had taken place since Kent's day. Rather than an architect, it was George Dean, who described himself as an 'agricultural engineer', who worked alongside the Windsor Castle architect, J. H. Turnbull. The widely publicized buildings were completed in 1858. Like Kent before him, Dean saw this project as setting an example to others. As their cost rocketed beyond the original estimates, he wrote:

Situating as they are, in the very centre of the Queen's private walks, they are naturally an object of much interest and ought to be such as Her Majesty could herself visit with comfort and might have satisfaction in showing her royal and other visitors. They ought beside to be of the most modern construction and should combine all the most modern equipment – in short, while executed with due attention to economy, they should be model buildings for the purpose for which they are required ... No greater benefit in my opinion could be conferred upon agriculturalists than the erection of such building as many Noblemen and landed proprietors will doubtless inspect them and go and do likewise'.¹⁸

Other borrowings from industry include the use of steam-powered machinery. When the seventh Duke of Bedford inherited in 1837, he began a programme of rebuilding on his estates, at an average cost of £10,000 a year between 1840 and 1875. Over 50 farms were rebuilt, many of them with impressive engine houses and tall chimneys to house stationary steam engines. The model farm was coming to look more and more like its industrial counterpart. For men such as Prince Albert and the Duke of Bedford, the cost was of little importance. We see here the mid-Victorian confidence in a future for agriculture supported by industry and science, displayed in these flamboyant buildings.

The world of industry not only contributed ideas of design, but also new materials to farm buildings. Cast iron was replacing timber for the supports of open sheds. Corrugated iron roofs were replacing more traditional materials. Iron tramways brought stacks to threshing machines; underground dung pits were filled via chutes from the cattle sheds above while liquid manure drained down through slated floors. Piped water fed fountains that filled a central cattle trough in the yards. There were brief experiments with the use of shuttered concrete in the 1870s and 1880s. Perhaps the most spectacular of the industrial model farms

¹⁸ Royal Archives, Privy Purse Letter Books, II, p. 11.

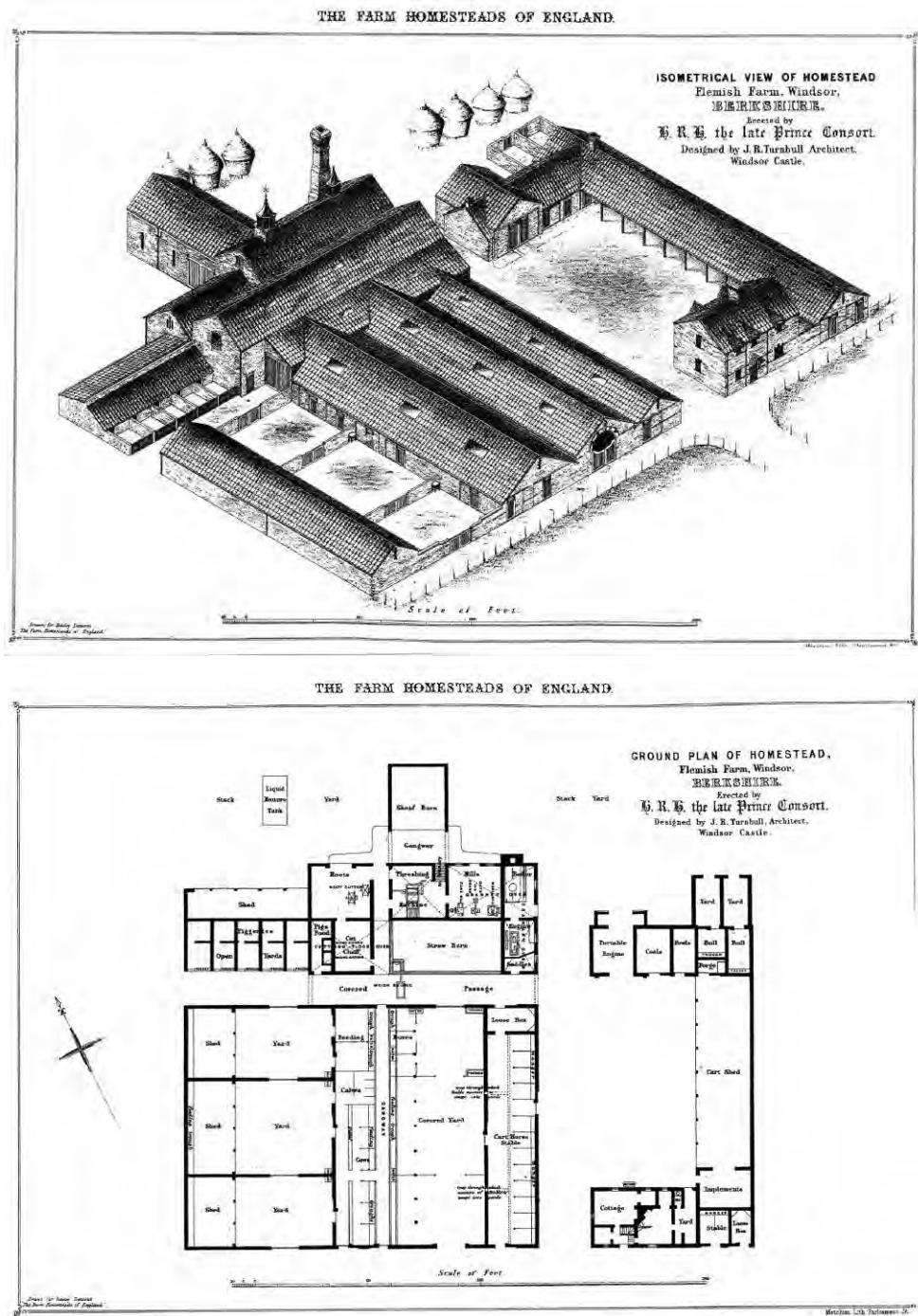


FIGURE 12.12. Flemish Farm, Windsor. Behind the ornate brickwork, the layout of Flemish Farm with its steam engine house beside the barn and its covered yards is very much that of a conventional farmstead for 'high' farming.

Source: J. B. Denton, *The Farm Homesteads of England* (1863), plate XX.

was built in 1875 as the home farm at Apley Park, Shropshire for the Ford family of ironmasters (Figures 12.13a–b). Here great arcs of laminated timber support the wide roofs over covered yards. Laminated timber had been developed in the early nineteenth century, firstly in bridge designs in Germany and then for the wide spans needed over riding schools in France. In England, the method was pioneered by Benjamin Green, a Newcastle architect who used it for early railway bridges. However, the technique was quickly superseded by cast iron and very few examples of its use survive. The only other example of its use in a farm building is on the Duke of Arundel's estate at Poling in Sussex.¹⁹ Decorative brick facades and ornate gables encase the barn, steam engine house and storage buildings at Apley, while a tall chimney rises high above the roof line.

With the onset of depression after 1875 much of the serious interest in model farms evaporated. What little new building there was showed an increased emphasis on stock and came to be concentrated either on the estates of the *nouveaux riches*, or in the dairying areas such as Cheshire, where the Duke of Westminster could afford to employ the architect, John Douglas, not only to rebuild Chester, but also to work on farms.²⁰

Perhaps a sign of the times is to be seen in a final example, built in the 1880s, not for a great landlord, but for the Express Dairy Company for their farm on the edge of London at Finchley (Figure 12.14). Here Londoners could come and see for themselves the cleanliness of the enterprise. They could drink milk in the milk bar and look through glass doors and admire the cow stalls. This farm was built by a food company, not a landowner and it was to impress the customers rather than the owner's friends.

IV

The significance of the model farm as one of the strands that makes up the 'agricultural revolution' has long been underestimated, and has continued to lose ground as the importance of farmer-led – as distinct from landlord-led – innovation has come to be appreciated by agricultural historians. However, throughout much of our period, the landlord was the provider of the infrastructure within which improved farming could flourish. This infrastructure included, along with drainage, reclamation and enclosure, the buildings to serve the farming operation. On the home farm, the owner could demonstrate, experiment and follow up in practice some of the theories of the day. It was on the model farms that the ideas of scientific planning began. An annual visit to the home farm was part of the social calendar for the tenants on many estates. The practical experience gained here allowed the owner or his agent to take an informed interest in the progress of his tenants. His pure-bred livestock might well provide the sires to improve the tenants' flocks and herds. The buildings and their management could provide an example of best-practice which could then be followed, at least in part, by the working farmers.

Model farms are as much part of the evidence for the country estate, the philosophies which had helped shape it, and the social order it controlled, as its great house and park. Beauty

¹⁹ Wade Martins, *English model farm*, p. 138.

²⁰ E. Hubbard, *The work of John Douglas* (1991), *passim*.



(a) Exterior of the farm buildings.

Photography: Susanna Wade-Martins.



(b) Interior of the covered barn.

Photography: Susanna Wade-Martins.

FIGURE 12.13. Home Farm, Apley Park, Shropshire. A remarkable survival, with its ornate polychrome brickwork and tall chimney hiding huge covered yards spanned by arches of laminated timber behind.

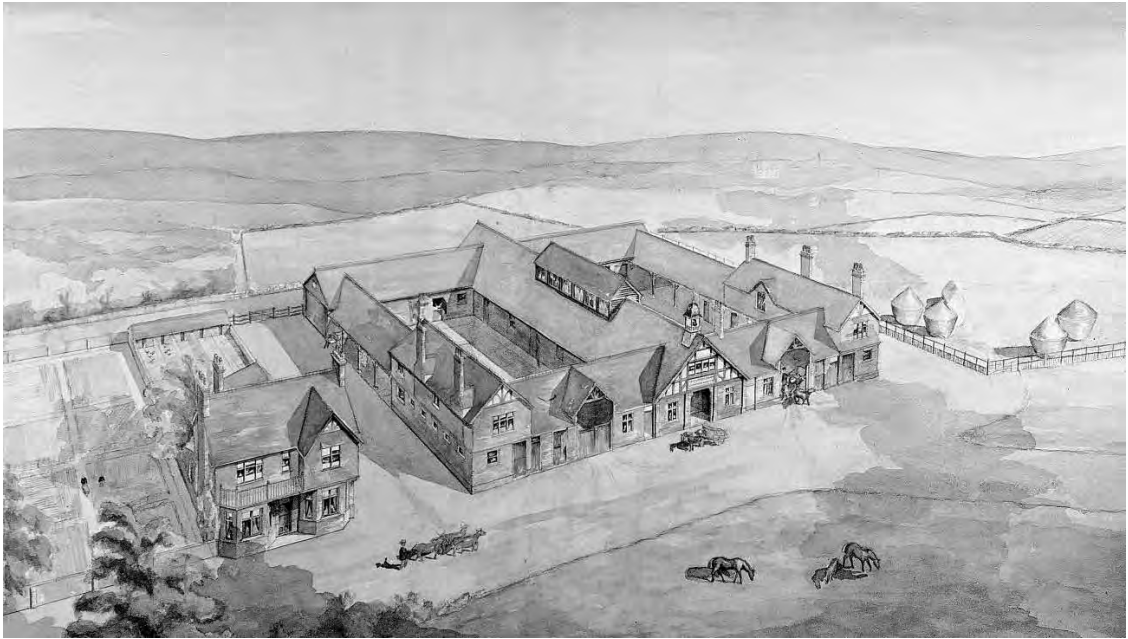


FIGURE 12.14. College Farm, Finchley, designed in 1881 by the Essex architect, Frederick Chancellor, for the Express Dairy Company. This is an example of the way patronage for model farms was being transferred from the great landlords to food companies.

Source: Essex Record Office D.F8 A37.

was to be found in a tamed, productive, useful and profitable landscape rather than in a wild and barren one. The buildings demonstrate, in a physical way, the importance of both the landlords' attitudes and their capital to agricultural improvement in the formative years of the eighteenth and nineteenth centuries.

Mechanization and rural change in England and Wales, 1850–1914

by Peter Dewey

The nineteenth century was a time of rapid population growth in Europe. Between 1760 and 1820 the population of twelve European countries rose from 84.2 million to 112.0 million (an annual average rate of 0.55 per cent), but in the period 1820–1913 the rate of population growth roughly doubled, being an annual average of 1.09 per cent per year. By 1913 the total European population was 225.9 million.¹ In England and Wales, the total population rose from 17.9 million in 1851 to 36.1 million in 1911, an almost exact doubling of the population in little more than half a century.²

In this period of remarkable population growth, the usual European experience was for the rural population to grow at a similar rate to the general population. While this had been true for England and Wales in the first half of the nineteenth century, there began after 1851 an unprecedented movement, which is still in progress: a large out-migration of people from the countryside. This out-migration was so large as to hold the rural population more or less constant until the First World War. Since the national population was rising even more rapidly than before, the result was to reduce the proportion of the national population living in rural areas very sharply.

Several estimates have been made of the numbers of rural dwellers at the decennial population censuses. The results vary according to the definitions of rural and urban areas, and whether some rural districts are to be excluded as being essentially urban in character (for example, some mining and suburban districts). The various estimates of the numbers of rural dwellers and their proportion to the national population are shown in Table 13.1. While there is no easy way of reconciling these estimates, this is not a cause of great concern here, since there is agreement on the broad mechanism at work. This nearly static (or slightly declining) rural population was the result, not of any great change in fertility or mortality, but of a

¹ Calculated from A. Maddison, *Phases of capitalist development* (1989), Table 1.3 and Appendix Table B.2. The countries are: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Sweden,

Switzerland and the UK.

² B. R. Mitchell, *British historical statistics* (1988), p. 9.

TABLE 13.1. Rural population of England and Wales, 1851–1911, in millions and as per cent of national population (%).

	<i>Census</i>		<i>Law</i>		<i>Bowley</i>		<i>Welton</i>	
		%		%		%		%
1851	8.9	49.8	8.2	46.0	-	-	7.6	42.6
1871	8.7	38.2	7.9	34.8	4.9	21.8	8.3	36.6
1891	8.1	28.0	7.4	25.5	4.6	15.9	9.1	31.2
1911	7.9	21.9	7.6	21.1	4.6	12.7	7.9	21.9

Source: adapted from B. Short, 'Rural demography, 1850–1914', in E. J. T. Collins (ed.), *The agrarian history of England and Wales*, VII, 1850–1914 (2 vols, 2000), (i), p. 1235, after Bowley (1914), Welton (1911) and Law (1967).

TABLE 13.2. Farm labour force in England and Wales, 1851 and 1911.

	<i>Agricultural labourers and farm servants</i>		<i>Farmers' relatives</i>		<i>Farmers</i>	
	<i>male</i>	<i>female</i>	<i>male</i>	<i>female</i>	<i>male</i>	<i>female</i>
1851	1,097,794	143,147	111,704	105,147	226,515	22,916
1911	622,279	13,214	97,689	56,856	208,761	20,027

Source: Census of England and Wales, 1851, 1911.

large natural increase being almost exactly offset by substantial out-migration to the towns. Altogether, between 1841 and 1911, a natural increase in rural areas of 5.3 million people (+86 per cent) was offset by a migrational loss of 4.5 million people (–73 per cent). This represented a loss of 85 per cent of the entire natural increase over these years.³

Along with the decline in the rural population, there was a sharp decline in the absolute numbers of people employed on farms in England and Wales. The first population census to record a fall in the farm workforce was that of 1861. From then on, decline was (and remains) continuous. Between 1851 and 1911, the combined numbers of agricultural labourers and farm servants fell by 475,515 (males) and 129,933 (females), a decline of 43.3 per cent and 91.8 per cent respectively. The total decline of males and females together was 605,448 (48.8 per cent). The greatest absolute decline was in the hired labour force, although the numbers of farmers' female relatives employed in agriculture also fell considerably. The number of farmers – male and female – showed little change between 1851 and 1911 (Table 13.2).

Within a broadly stable rural population, the agricultural population declined absolutely, so that its relative importance lessened. Between 1851 and 1911, the proportion of the national labour force engaged in agriculture fell from 21.7 per cent to 8.3 per cent.⁴ The relative depopu-

³ B. Short, 'Rural demography, 1850–1914', in E. J. T. Collins (ed.), *The agrarian history of England and Wales*, VII, 1850–1914 (2 vols, 2000), (i), p. 1272.

⁴ P. Deane and W. A. Cole, *British economic growth, 1688–1959* (sec. edn, 1969), p. 142, figures include forestry and fishing.

lation of the countryside and the marked decline in the farm labour force, both in absolute numbers and in labourers per farmer, provide a context in which to examine the mechanization of English and Welsh agriculture.

I

What were the possibilities for the mechanization of English and Welsh agriculture between 1850 and 1914? We may consider three main areas of work which could be mechanized: arable (sowing, cultivating and harvesting of cereals, root crops, and vegetables); grassland (the cultivation of grass, the harvesting of hay, and the raising of animals); and barn or farmyard work (threshing of crops, animal feed preparation, dairy work, storage and movement of products and materials).⁵

(a) Mechanization in arable agriculture

In arable work, seedbed preparation from 1850 through to 1914 was largely a matter of using horses to plough and cultivate, and employing ploughs, cultivators, harrows and rollers, all of which had a substantial amount of iron in their construction. By the 1870s, the great majority of ploughs were probably supplied by the factories of the newly-emerged agricultural engineering firms, most of which were located in or near the arable districts, above all in Lincolnshire and Suffolk. These implements had the advantage of cheapness, uniformity of design (although firms paid much attention to designing ploughs suitable for local conditions) and a supply of interchangeable parts for when repairs or replacement parts were required. These could be sent quickly and cheaply to all parts of the country and delivered to the railway station nearest to the customer.

For the application of seed, the horse-drawn seed drill had made substantial progress by 1870. The acme of the type was that produced by the Suffolk firm of Smyth of Peasenhall, whose 'Suffolk' drill became the market leader. In 1870 some seed was still broadcast manually, by means of a seed fiddle, or by a seed barrow, but by 1900 the use of the horse-drawn drill was almost universal except on very small plots of arable land. The application of farmyard manure was still unmechanized, and involved heavy work for the labourers, who had to cart it to the field and then spread it with hand forks. But the increasing use of artificial fertilizer gave some scope for mechanical application, since in granular form it could be delivered by a seed drill or a bespoke manure drill.

From the early days of the agricultural steam engine, agricultural experts and reformers had hoped that it could be employed in the direct ploughing and cultivating of the soil. However, its weight militated against its direct use on the land. Horses were to continue to supply most of the tractive power in agriculture until the triumph of the tractor after the Second World War. But in the mid-nineteenth century a start was made in the use of the steam engine to plough

⁵ The succeeding paragraphs are derived from various sources. The principal work on nineteenth-century British farm machinery remains G. E. Fussell, *The farmer's tools, 1500-1900* (1952); this has been supplemented by *Fream's elements of agriculture* (twelfth edn., 1932, edited by R. H. Biffen); see also the recent work by J. Brown, *Steam on the farm: a history of agricultural steam engines, 1800 to 1950* (2009); and P. Dewey, 'Iron harvests of the field'. *The making of farm machinery in Britain since 1800* (2008).

and cultivate. By 1870 John Fowler of Leeds, who ran the most notable and successful firm in the business, had perfected his indirect, cable-operated steam ploughing system. Worked either by a single engine or a pair of engines at the edge of the field, reeling between them a wire cable, to which was attached the plough itself, the system did high-quality work, and much faster than horses. But it was expensive; a double-engine Fowler system would cost about £1600 in the 1880s. For this reason, and because it was best suited to large rectangular fields on level ground, it did not make a great impact except in the eastern and southern counties of Britain. At their peak in the 1870s, there were probably about 600–700 ploughing sets at work, although the decline of the arable acreage after the 1870s reduced this to about 500 sets by 1914, of which probably over half were owned and operated by ploughing contractors. These steam sets ploughed, at a conservative estimate, 200,000 acres of arable land in Britain. However, estimates of how much land was ploughed by steam in the nineteenth century are very vague. Jonathan Brown notes that, with different assumptions, the figure of 200,000 acres might be raised to as much as 1,000,000 acres (in Britain). But whatever estimate is accepted, it would compare poorly with the 10.4 million acres of tillage in Britain in 1914.⁶

The cultivation of the newly ploughed soil required the use of more horse-drawn equipment; the harrow, then the roller and, when the seed had germinated, the horse-hoe, whose function was to keep down weeds between the rows of sprouting crop. However, hand labour was still often used, even on the eve of the First World War, both because it was a more efficient process than horse-hoeing, and because it could be used to deploy a labour force otherwise underemployed after sowing of seed in the spring.

As well as ploughing by steam, the later nineteenth century saw the ancillary cultivation operations being performed by steam engines. In this, a large role was played by the steam-engine contractor. The high cost of the steam engines and their implements led to the emergence of the specialist contractor, who was either a local farmer (who could fall back on cultivating his own land when contracts were difficult to come by) or a more specialist operator, deploying upwards of a dozen or so of the double-engine ploughing sets popularized by Fowler. One of the earliest of these was the Gloucestershire Steam Ploughing Company, formed in 1860, with a nominal share capital of £50,000. It came rapidly to financial disaster, and was wound up in 1862. A more successful and larger one was the Oxfordshire Steam Plough Company, founded in 1874, which continued in the steam cultivation business until the 1930s. In between came many contractors who might operate only one set of ploughing engines, and who spent much of their time on operations other than ploughing (e.g., cultivating, drainage, threshing). The number of steam cultivation businesses was not large; the population census of 1911 returned only 7346 ‘agricultural machine proprietors’, but even a small firm could work a large acreage over the year, given that the average steam ploughing set could cultivate about 1800 acres in a working year of 100 days. While horse power continued to dominate the ploughing of the land, threshing was for most farmers done by the steam engine contractors.

The harvesting of field crops had, by 1870, been substantially, although not completely, mechanized. The horse-drawn reaper and, in the 1890s, the reaper-binder (usually just referred

⁶ P. E. Dewey, *British agriculture in the first world war* (1989), p. 60; Brown, *Steam on the farm*, p. 127 and ch. 12, ‘Contractors’.

to as a binder) set new standards for speed and efficiency in harvesting, replacing the sickle, bagging hook, and scythe. The scythe still had some part to play, and it is estimated that in England and Wales in the 1870s only two-thirds of all corn harvested was got by machine, the remainder being collected by large gangs of temporary manual labour, using scythes and other hand cutting tools. But by 1914 very little reaping by hand was to be found; its main uses were to scythe round the edge of a field before harvesting, to open up a path for the reaper-binder, and to get in crops laid low by wind and rain.⁷

By the First World War, the pattern of arable harvesting had been established; cereal crops were cut and formed into sheaves by the reaper-binder, and ejected out onto the field. At this point, hand labour came into its own, and large numbers of regular farm labourers, together with the temporary labour of women and children, came into the fields to stack the sheaves into vertical tent-shaped 'stooks'. These would be left to ripen for some days before being collected by the regular farm labourers and raised into horse-drawn wagons. They would then be built into ricks, either in the field or in the barnyard, before being threshed by machine in the autumn and winter season. Further seed cleaning could be done by a winnowing machine, often still hand-cranked.

Mechanization had thus made a patchy contribution to arable farming; seedbed preparation was done by horse-drawn machines; harvesting was thoroughly mechanized; collection of cut crops was not mechanized at all; and threshing had been thoroughly mechanized.

(b) Grassland

Grassland work presented somewhat similar opportunities for mechanization. Most grassland was 'permanent', or in other words was not included in the arable rotation. Here the grass itself was the crop, and apart from the occasional rolling or dragging of a light harrow or chains across the field to keep down weeds, and the application of some farmyard manure by manual labour, it received little attention. If a hay crop was being grown, then machinery came into play; mowing machines, and haymaking machines such as tedders and kickers were commonplace by the 1870s, although some hay crops were still being got in by hand, especially on the smaller farms, up to 1914. The collection of hay from the field was beginning to be mechanized by the end of the nineteenth century; horse-drawn hay sweeps could be used to collect up the hay, hayloaders could be used to raise the hay onto the wagon, and the hay elevator could be used to build the haystack. Elevators seem to have been used more freely for the hay crop than the corn crop, presumably because they would have caused shedding of the ears of corn in their journey up the elevator chain to the top of the corn rick. In this respect, the hayfield was more highly mechanized than the cornfield.

(c) Barn or farmyard work

This was to a large extent mechanized before the First World War. The area in which mechanization had proceeded furthest was the preparation of animal feed. By the 1870s, agricultural engineering firms were marketing cheap and simple machines such as cattlecake crushers,

⁷ E. J. T. Collins, 'The age of machinery', in G. E. Mingay (ed.) *The Victorian countryside* (2 vols, 1981), (i), p. 205.

hay cutters, and turnip slicers. These were, for the most part, manually operated, although the advent of the portable or small stationary steam engine from the 1850s and the small oil or petrol engine from c.1900, made it possible to use more power. A significant innovation from c.1890 was the mechanical sheep-shearing clippers; originally hand-cranked, they were later powered by a small oil engine. This was an inexpensive and popular innovation, although not fully adopted until after 1918.⁸ However, the care and feeding of animals was still essentially unmechanized: carting feed, supplying water, milking, removing manure and building manure heaps were tasks still done by human effort alone.

The harvested cereal crops, gathered by men, wagons and horses, and stacked in ricks, were by the 1870s largely being threshed by machine. Earlier in the century, fixed or horse-powered machines had been used. By the 1870s the 'portable' (i.e. mounted on wheels and therefore movable) steam engine was being used in conjunction with the threshing box, also mounted on wheels. The advantages of the portable steam threshing sets were that the operation could be done at any time, and required much less labour than did the use of the traditional flail. The larger farm might employ the more powerful, self-propelled 'traction engine' as a power source. This had the further advantage that it could be used for hauling wagons on the farm or on country roads, and it was used by threshing contractors to take their wagon train comprising engine, threshing 'box', water wagon, tools and living quarters to the next contract. But ownership of a steam engine was expensive, and confined to the larger farms. In 1907, there were only 16,959 steam engines on British farms, as compared with a total of almost 300,000 farms.⁹ For the most part, farmers got their crops threshed by the use of threshing contractors, or by using a neighbour's threshing set. The movement of materials and cut crops was almost universally done by man and wagon; the occasional well-publicized ventures into farm railway systems must be regarded as eccentric and expensive rarities.

In dairying, the mechanization process was slow, and fraught with technical problems. The main processes in dairying were milking, the separation of cream from milk, and the manufacture of butter and cheese. Many attempts had been made to develop a workable and hygienic milking machine and by the 1890s these were reaching the stage of commercial development. In 1898 the Highland and Agricultural Society held a trial of milking machines, but only two types were entered. Two years later the Royal Agricultural Society of England also held a trial, and again only two types were entered. One of these, the Lawrence and Kennedy Universal Cow Milker, was the first really practical milking machine. In 1905 J. and R. Wallace, of Castle Douglas, showed their machine at the Royal Agricultural Society's Show, and in 1910 a machine by Vaccar Ltd came on the market. But on the eve of the war, mechanical milking was a rarity, and another quarter of a century was to pass before the machines became reliable enough for mass use. But the separation of cream from milk had been largely achieved by the use of the cream separator, a cheap and easily-worked machine, which could be cranked by

⁸ The main firm in this business, the Wolseley Sheep Shearing Machine Co., was established in 1889, but its progress was adversely affected by poor quality control and customer dissatisfaction; R. Church, *Herbert Austin: the British motor car industry to 1941* (1979),

p. 3.

⁹ Collins, 'Age of machinery', p. 209; BPP, 1912-13, X, Board of Agriculture and Fisheries, *The agricultural output of Great Britain*, p. 21.

TABLE 13.3. Farm machinery stock in Essex, July 1917.

	<i>In good repair</i>	<i>Capable of being repaired</i>	<i>Total</i>
Ploughs	13,373	464	13,387
Corn and seed drills	3918	83	4001
Toothed harrows	13,128	318	13,446
Disc harrows	742	12	754
Horse cultivators	3360	105	3465
Rollers	8054	171	8235
Potato sprayers	58	4	62
Binders	3999	330	4329
Threshing machines	420	22	444
Portable steam engines	569	42	611
Traction engines	280	12	292

Source: J. Sheail, 'Land improvement and reclamation: the experience of the First World War in England and Wales', *AgHR* 24 (1976), p. 118.

hand or powered by a small oil or petrol engine. By the end of the century much butter – and some cheese – making had moved from the farm into the factory.¹⁰

If it is relatively easy to say which areas of agricultural practice had been mechanized, there are difficulties in measuring the degree of mechanization by 1914. No national census of machinery on British farms is available to the historian until 1942. An attempt was made at a national survey in the First World War, the surveys being carried out in 1917 by the government-sponsored County War Agricultural Executive Committees, but the returns have survived only for one county, Essex (Table 13.3). This survey covered all of the 9055 agricultural holdings in the county, and shows some variations in the machinery stock. The supply of ploughs, simple (toothed) harrows, and rollers is copious, there being more than one plough and one harrow per holding, and almost one roller per holding. Cultivators, drills and binders occur at roughly the rate of one for every three farm holdings. But there is comparatively little investment in steam engines, whether of the simple portable type or the more expensive and complex traction engine type. It may be assumed that these were to some extent provided through the services of ploughing and threshing contractors, whose equipment would not have figured in this survey of equipment on farms. The larger farm or estate would be more likely to own one of the larger traction engines, which would be used for a variety of tasks, and some of the middling sort of farmers would have owned a portable steam engine; both sorts could be used to operate the farm's threshing machine in the slack winter season, when threshing took place. But for most of the smaller farms, ownership of a portable steam engine or traction engine or even a threshing machine was not economic; these may well have been the sorts of farms who

¹⁰ Fussell, *Farmer's tools*, pp. 196–8; C. S. Orwin and E. Whetham, *History of British agriculture, 1846–1914* (1964), p. 347; T. Jansson, *A historical review of the development of the milking machine with special reference to technical advances and improvements* (Alfa-Laval, Tumba, Sweden, 1973).

TABLE 13.4. Farm occupiers' capital, United Kingdom, 1867–1914, after Boreham (£m).

	<i>Livestock^a</i>	<i>Crops^b</i>	<i>Machinery and implements</i>	<i>Other items</i>	<i>Total capital</i>
1867–73	178.2	261.7	5.4	27.5	472.7
1874–8	196.8	248.3	5.4	29.2	479.7
1879–83	179.3	190.7	4.9	24.9	399.8
1884–96	159.4	180.0	4.2	22.7	366.3
1897–1910	171.8	179.8	4.5	25.0	381.1
1911–14	190.8	194.9	7.0	28.4	421.2

Notes:

^a Cattle, sheep, pigs, poultry, horses.

^b Capital and cash reserves required for producing wheat, oats, barley, potatoes, hay, straw, turnips, beans, peas and mangolds.

Source: A. J. Boreham, 'A series of estimates of occupier's capital, 1867–1938', *The Farm Economist* 7 (1953), pp. 260–3.

bought one of the smaller stationary steam engines of 1–5 HP, or a petrol or oil engine. At the 1908 agricultural census, in addition to the 16,959 steam engines on British farms, there could now be added 12,807 oil engines, 1347 petrol engines and 1482 gas engines.¹¹

The Essex survey is a reminder that the process of mechanization was a patchy affair. It is also a reminder that it was, for the most part, still a question of using fairly simple machines or implements. The most complex machine shown by Table 13.3 to be in widespread use (at the rate of roughly one for every two holdings) was the binder, a reminder that farmers were prepared to pay (about £60 a machine in the late nineteenth century) for the peace of mind that came from being able to get one's crops in at a time of one's own choosing, untrammelled by the whims of contractor or neighbour.¹²

An alternative approach is to calculate the national value of the capital invested by farmers in implements and machinery. Although separate estimates for England and Wales do not exist, estimates have been made by Boreham of the value of farm occupiers' capital in the UK at various dates and these are presented in Table 13.4. Although Boreham's estimates include Ireland, whose farms would have had less machinery than those in England and Wales, and are thus probably biased downwards, it appears that investment in machinery was a very small part of the total investment made by farm occupiers in their business; although at a little over 1 per cent for most of this period, it rose to nearer 2 per cent by the First World War. How is this to be explained?

¹¹ Board of Agriculture and Fisheries, *Agricultural Output*, p. 21.

¹² £60 was the average price of the binders tested

at the *Highland and Agricultural Society's* trials at Glasgow in 1882: Fussell, *Farmer's tools*, p. 137.

III

The first possible explanation is that Boreham's estimates are simply too low. It has been suggested that in 1909–13 British farmers (in England, Wales and Scotland) were spending £3.5 million annually on farm machinery.¹³ This is a fairly reliable figure, since it is based on the value of the output of the farm machinery industry as returned at the 1907 Census of Production, and the value of farm machinery exports is known from the trade returns. Deduction of the value of exports from the value of total production, and the addition of retained imports, gives the value of home machinery sales. If the Boreham estimate (which includes Ireland) is reliable, the conclusion would be that, just before the First World War, farmers were replacing at least half of the value of their machinery stock every year. This is highly unlikely, since the average depreciation rate of the total stock of farm machinery would not have been as high as that. This is not the place to attempt a new estimate of the capital value of farmer's stock of machinery, but even if the Boreham figure is raised several times, it would remain the case that investment in farm machinery was a very small proportion of the total of farm occupiers' capital.

The second possible explanation lies in the size-structure of British farming. The large farm (150 acres upwards) would have had a more or less complete complement of implements and machines, from ploughs upwards, including a portable steam engine and a threshing machine. It was suggested at the end of the First World War that in 1914 the average very large farm (300 acres, of which half was arable) would have required capital investment in machinery and implements at the rate of £10 an acre.¹⁴ But this was a counsel of perfection. Primrose McConnell's tabulation of the machinery and implement requirements of arable farms of various sizes in 1910 implies that on a 300-acre farm the investment in machinery was less than £140, although this did not take into account the cost of implements. Even in 1931–3, when tractors and oil engines were already employed on the larger holdings, a survey of 1000 farms in the eastern counties of England showed that machinery and equipment accounted only for about 18 per cent of total capital of farms between 100 and 300 acres, or about £2 an acre. Even this may be a high estimate, since the average farm was much smaller than 300 acres. In Britain in 1908 there were only 168,000 agricultural holdings of 50 acres or over, although 290,000 persons described themselves as 'farmers' in the 1911 Census.¹⁵ Most farms were well under 100 acres, and it is doubtful if a farm of that size (containing perhaps 50 acres tillage, which was conventionally regarded as the area a two-horse ploughing team could manage in the course of a year) needed to invest more than £150–200 in mechanical equipment and implements. Leaving aside the permanent grassland, with its low requirements for machinery, in 1913 there were some 14 million acres of arable land in Britain, and it is unlikely that the total capital stock of machinery and implements amounted to as much as £1–2 an acre.¹⁶ Of course, it was increasingly the case that farmers, especially in arable areas, did not own the heavier

¹³ Dewey, *British agriculture*, Table 16.2.

¹⁴ BPP 1919, VIII, Agricultural Wages Board, *Report of the enquiry into the financial results of the occupation of agriculture and the cost of living of rural workers*,

App. I.

¹⁵ Board of Agriculture, *Agricultural output*, p. 62.

¹⁶ See the discussion in Collins, 'Age of machinery', pp. 211–12.

items of equipment, but employed contractors as necessary, trading the cash expenditure for savings on their capital outlay. Measures of farmer's capital may therefore underestimate the capital equipment they could access.

Thirdly, technical improvement and the associated mechanization of farm operations had been a patchy process. While commentators were enchanted by technologically sophisticated innovations such as the steam plough, the threshing machine, and the reaper-binder, whose cunning knotting mechanism bound the corn sheaves with twine before disgorging them onto the ground, large areas of mechanical innovation remained at a fairly simple level. This was true of most of the process of seedbed preparation, from ploughing until the harvest was ready to be gathered in. In this whole process, the only complex machine to be employed was the seed drill, and this was comparatively inexpensive. While the new ploughs, harrows and rollers were iron-built, performed more efficiently and lasted longer than their wooden predecessors, they were comparatively simple devices, requiring only low-cost maintenance, and were cheap to buy and repair. This was also true of much of the barn machinery, which could be operated by hand on the smallholding. Even on the larger holding, horse-driven gears, and, later, the small and cheap oil engine, would suffice to operate a range of barn machinery, even including some of the smaller threshing or winnowing machines. The portable threshing machines operated by a steam engine were on a larger scale. In grassland work, it was not a big expense to buy one of the new mowing machines, a hay tedder, a horse rake, or even an elevator to help build the hay rick.

Fourthly, investment in implements and machinery started in the mid-nineteenth century from a low point, and may not have risen very much as a part of total farm capital. As E. J. T. Collins has observed:

The expenditure on tools and equipment was larger in 1910 than in 1837, but the proportion of farm capital which it represented was probably very little different ... During this the first stage of mechanisation the emphasis was on simple mechanical devices offering modest but acceptable savings in time and labour at least cost. The benefits of the most expensive machines were diffused through hiring.¹⁷

In explaining the comparatively low capital investment in modern machines and improved implements, it can be said that a little investment went a long way to raise productivity. Output per worker in British agriculture rose by 70 per cent between 1840 and 1900. Much of this was linked to the use of machinery, directly and indirectly. For example, in harvesting and threshing wheat, machinery yielded a saving over hand labour of approximately 70 per cent. This not only saved labour, but allowed the more productive deployment of the labour force that was retained, since the winter labour formerly intermittently employed on back-breaking flail work could be used to better effect around the farmstead, in feeding livestock, or in the fields, under-draining and carrying roots.¹⁸

It was also the case that structural changes in farming were not conducive to mechanization, as the corn area shrank and the grassland area rose. From c.1870 until the end of the 1890s, British farming was subject to the devastating foreign competition that was labelled

¹⁷ Ibid., pp. 211–12

¹⁸ Ibid., pp. 210–11.

the 'Great Depression' by the historian of British farming, Lord Ernle. In 1870 the area of permanent grass in England and Wales was 11.1 million acres, and the area of tillage was 11.7 million acres. By 1913 the figures were 16.1 and 8.5 million, so that some 3 million acres had shifted from growing cereals to growing grass. Since there was less scope for using machinery in grassland than in arable farming, this structural shift reduced the potential for further mechanization.¹⁹

Some conclusions may be drawn on the process of farm mechanization in late nineteenth- and early twentieth-century England and Wales. Mechanization was slow to develop, having most effect on the getting and threshing of cereals, and the bringing in of the hay harvest. Mechanization of the earlier processes of ploughing, cultivation, and weeding was much less evident. Hence mechanization depended on investment in horse power and the improved iron implements which became available after 1815. The most highly mechanized seedbed operation was the application of seed itself, via the horse-drawn seed drill, which had reached a high state of technical perfection. Mechanization of field operations was in truth a rather spotty affair. It was also evident that mechanization tended to occur more on the larger farms, and less on the smaller, family-run holdings, which employed little or no non-family labour, and thus had less financial incentive to mechanize operations, even if the farmer could have afforded to buy the latest thing in machinery. Such estimates of capital investment in machinery and implements as have been made suggest that a little went a long way to improve labour productivity.

IV

It is clear that farming lost labour at a very high rate after the middle of the nineteenth century. In this, it was alone amongst the great British industries. This exodus of labour from farming must have contributed to the out-migration from the countryside to the towns that was such a feature of late-Victorian life. How may one account for the exodus from agriculture? In particular, what part was played by the mechanization of farming?

(a) The labour market and mechanization

The market for agricultural labour was clearly very different from those of other industries. In sixty years (1851–1911), during which the total population of England and Wales almost doubled and all the major industries expanded their labour forces, the agricultural labour force fell by some two-fifths. The balance between labour supply and demand in agriculture was producing very different results to those in the economy as a whole. The potential agricultural labour force, in the form of the total rural population, remained comparatively stable. Whichever estimate from Table 13.1 is adopted, it is clear that the rural areas had lost most of their natural increase (almost 5 million between 1841 and 1911) in this period through migration and emigration.

¹⁹ Ministry of Agriculture, *A century of agricultural statistics, 1866–1966* (1968), Tables 43, 44. The rising total of cultivated land is explained by the inclusion, from 1891, of 'rough grazing in sole right' – upland grazings formerly excluded from the annual agricultural statistics.

The potential supply of agricultural labour was thus more than adequate. Was the explanation for the numerical decline in farm labour that rural populations (in all countries) tried to leave the countryside as soon as the opportunity presented itself, as Longstaff had postulated as early as 1893? Or was it the case that the decline of the agricultural labour force was induced by a declining demand for labour by farmers?²⁰ If the latter, then the decline of the labour force should have been accompanied by a greater tendency to unemployment and underemployment. But the evidence indicates that, on the contrary, labour markets were tightening after 1850. In the case of casual and seasonal labour, the supply had deteriorated by the 1870s, and the deterioration continued until the end of the century. In the late 1840s, there had been a minimum of three casual workers to every two regularly employed, and at times this could move to 3:1. By the 1900s the balance had shifted decisively to 3:1 or even 4:1 in favour of the regularly employed; in the 1920s it was to reach 5:1.

The decline in the supply of seasonal labour from around mid-century was shortly followed by that of the regular labour force. There is no evidence that this was accompanied by greater unemployment in the shape of winter lay-offs. Such evidence as there is suggests that the incidence of winter unemployment among 'regular' farm staffs remained fairly constant. In the 1860s, returns from some 42,000 (largely arable) acres in Berkshire showed that the regular labour force was reduced by 4 per cent (males) and 42 per cent (females) in the winter quarter. Half a century later, in 1914, an estimate by the Board of Trade showed that, for the whole regular labour force in England and Wales, January employment was lower than July employment by 4 per cent (males) and 37 per cent (females).²¹

The broad evidence of the labour market is that falling labour demand was matched by falling labour supply, so that unemployment did not rise. But this still leaves the possibility that the decline in the labour force was substantially *initiated* by technical and structural changes within agriculture. Here, two possibilities suggest themselves; increased mechanization, and the decline of tillage.

The spread of machinery had coincided with the decline of the labour force. Which came first? Engels had argued as early as the 1840s that the introduction of 'threshing and other machines' had thrown large numbers of men out of work, which suggested that the farmers' decisions to mechanize preceded the decision of the labouring population to quit agriculture. But if the long-term tendency of labour to leave the land was the environment in which farmers had to operate after mid-century, then the likelihood is that farmers were responding to labour market changes rather than initiating them.

This interpretation is strengthened by recent research, which notes that the agricultural labour market tightened at the peak of the trade cycles, and that this was reflected in rapidly rising wages, shortages of harvest labour, and strikes. It was at this point that farmers were induced to purchase machinery, rather than risk losing a high proportion of the harvest. The effect of mechanization was therefore to undermine the position of the labourer at intervals, but in a short-run fashion, and long-term technological unemployment does not seem to have been a major social problem in agriculture in the nineteenth century. Thus agricultural

²⁰ G. B. Longstaff, 'Rural depopulation', *J. Royal Statistical Soc.* 56 (1893), pp. 413-14.

²¹ See the discussion in P. Dewey, 'Farm labour', in Collins (ed.), *Agrarian history*, VII (i), pp. 849-50.

mechanization did not result in the mass exodus of farm labourers and the creation of Marx's 'industrial reserve army of the unemployed'.²²

(b) The decline in tillage

If mechanization did not lie at the root of the exodus of labour, what of the decline in tillage after the 1870s? This was considerable; the tillage area in England and Wales fell by 28 per cent between 1870 and 1914, entailing a loss of 3,314,000 acres (from 11,877,000 to 8,563,000), which was largely converted to permanent grass, with much lower labour requirements per acre. The possible connection between labour loss and tillage decline has been examined with a rank order (Spearman) correlation test, the decline in the corn (wheat, barley, oats and rye) area from 1870–1914 being ranked against the loss of labour (agricultural labourers, farm servants and shepherds) from 1871 to 1911 for each county in England and Wales. The national correlation was slight ($R = 0.126$), but it was found that a few of the great eastern corn counties (Norfolk, the East Riding of Yorkshire, Cambridgeshire and Lincolnshire) lost only very small proportions of corn, and also of their labour force. In these cases, therefore, the maintenance of the corn area may have served to retain farm labour. Conversely, Leicestershire and Somerset showed a high loss of both labour and corn. The correlation between labour loss and corn decline was poorest for most of the Welsh counties; in view of their small tillage areas in the 1870s, this is perhaps not surprising.²³

(c) Low wages and alternative occupations

The background to the exodus of farm labour was that agricultural wages were much lower than urban wages throughout this period. An estimate of agricultural wages (including allowances in kind) has been made for 1907, and this shows that, even for the more skilled labourers (those with responsibility for animals), weekly wages amounted to less than £1.00 a week (Table 13.5). This may be compared with urban wages of at least £1.00 in the poorest trades, and wages for semi-skilled workers of at least £1.50. Skilled workers such as bricklayers earned about £2.00 a week.²⁴ We are moving closer to the position adopted by Longstaff, which is that rural labour, disadvantaged by low wages, would leave the countryside as soon as the opportunity presented itself. This became much easier after mid-century. Moreover, knowledge of the opportunities outside the countryside became more widely disseminated.²⁵

The novel features of the post-1850 period were the changes in transport and communications. The railway had penetrated the rural areas very thoroughly by the 1870s, and was to spread comprehensively over the countryside by 1914. Newspapers were widely available and rural

²² F. Engels, 'The condition of the working class in England', in Anon. (ed.), *Karl Marx and Frederick Engels on Britain* (sec. edn, Moscow, 1962), p. 229; E. J. T. Collins, 'The rationality of "surplus" agricultural labour: mechanization in English agriculture in the nineteenth century', *AgHR* 35 (1987), p. 45; id., 'The "machinery question" in English agriculture in the nineteenth century', *Research in Economic Hist.*, Supp. 5 (1989), pp. 214–5.

²³ Dewey, 'Farmlabour', App. II and the accompanying map.

²⁴ G. Routh, *Occupation and pay in Great Britain, 1906–60* (1965), pp. 170–8.

²⁵ Longstaff, 'Rural depopulation', pp. 413–14; E. J. T. Collins, 'Harvest technology and labour supply in Britain, 1790–1870' (unpublished Ph.D. thesis, University of Nottingham, 1970), p. 214; F. Kitchen, *Brother to the ox* (1943; new edn, 1981), p. 192.

TABLE 13.5. Values of weekly cash wages, perquisites, and allowances in kind in England and Wales, 1907.

	<i>Weekly cash wages</i>	<i>Extra earnings and estimated value of allowances in kind</i>	<i>Total</i>
England			
Shepherds	15s. 11d.	3s. 8d.	19s. 7d.
Horsemen	15s. 3d.	3s. 6d.	18s. 9d.
Cattlemen	16s. 1d.	3s. 0d.	19s. 1d.
Ordinary labourers	14s. 1d.	3s. 0d.	16s. 6d.
Wales			
Ordinary labourers	13s. 9d.	4s. 3d.	18s. 2d.

Source: following P. Dewey, 'Farm labour', in Collins (ed.), *Agrarian history*, VII (i), p. 829.

literacy was much improved. For those unwilling to leave the countryside, there were the new employment opportunities provided by the county police forces and the railway. In addition, the fall in the cost of living and the rise in the labourer's real wage after the 1870s reduced the relative costs of travel and of migration. There seems little doubt that, once movement became cheaper and information on the wider world became effectively diffused within the farming community, labourers voted with their feet at the earliest opportunity.²⁶

V

In retrospect, agriculture stands out as the last of the great industries to undergo mechanization in the course of the British Industrial Revolution. It had been preceded on this path by textiles, metals, engineering, transport on land and water, and mining. To be sure, the process had not been complete in any of these, and there remained in all of them large areas of work which still relied on hand labour – perhaps most noticeably in coal mining. In agriculture also, it is clear that the mechanization process had been a patchy affair, with limitations on the use of the steam engine in field work, and an almost complete absence of mechanical devices in the dairy. But by 1914 there had been a sufficient development of mechanization over a broad range of tasks to permit farmers to cope for most of the year with not much more than half of the regular labour force they had employed in the year of the Great Exhibition at the Crystal Palace. The occasional use of large numbers of workers from the village to assist in getting in corn or hay crops provided good photo opportunities, but were erratic survivals of a bygone age.

It might have been expected that the loss of large numbers of labourers would lead to a rise in relative wages for those still employed on the farm. This was not the case. Farm workers

²⁶ P. J. Perry, 'Working class isolation and mobility in rural Dorset, 1837–1936: a study of marriage distances', *Trans. Inst. British Geographers* 46 (1969), shows that personal mobility in rural Dorset increased greatly between 1877–86 and 1887–96.

shared in the general slow rise in living standards in the second half of the nineteenth century, but immediately before the First World War the gap in real wages between agricultural and other workers was still marked. This may be attributed to the weak competitive position of British farming; unlike the other great industries, it had no export market worth the name, and was subject to competition from imports, which grew rapidly after the 1870s. In economists' terms, farming was now supplying 'inferior' goods, demand for which was weak compared to that of other industries, and the employers' economic position was correspondingly weak. It is unlikely to have been an industry making super-normal profits, which could be shared with the workforce; it was only during the First World War that farming profits could be said to be super-normal for a few years.²⁷

Finally, it may be suggested that, since the broad tendency of mechanization was to substitute capital for labour, this worked to the advantage of the large farmer, who could replace a factor of production whose costs were variable (labour) with one whose costs were fixed (machinery), and thus reduce the cost of production per unit of output. For the small farm, run entirely by family labour, a living could be eked out by means of not paying wages, but profits and living standards would remain low. The middling farm, which could not invest in much labour-saving machinery, and still had to pay out some wages, got the worst of both worlds. In the inter-war period, further possibilities for labour-saving investment would arise, in the shape of the tractor and milking machine, and the economic advantage of the larger farm would continue to increase.

²⁷ P. E. Dewey, 'British farming profits and government policy during the First World War', *ECHR* 37 (1984), pp. 377–8.

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